

FILAMENT



FLUORESCENT



INFRARED



MERCURY



SUN



GERMICIDAL



OZONE



CATALOG OF
LARGE

Lamps

Progress Is Our Most Important Product

GENERAL  ELECTRIC

FOREWORD

This Catalog has been prepared as a service to utilities and agents, commercial, industrial and residential customers and all other interests concerned with the practical use of the most efficient General Electric lamps available for specific lighting services.

Of the tens of thousands of lamps developed by General Electric, only those in popular demand are included in the Catalog. These are the types and sizes that represent the great majority of the nation's annual lamp requirements. They include such recent General Electric developments as Coloramic Lamps, Bonus Line Lamps, Colored Reflector and Projector Lamps, High Output and Power Groove Fluorescent Lamps and White Mercury Lamps. They do not include any of numerous special service lamps, photographic lamps, automotive, flashlight and other miniature lamps.

Essential technical information, scaled illustrations and brief descriptions of usage are given to assist buyers and sellers in selecting the right lamp for any particular application. For no matter what the lighting requirement may be, there is a General Electric lamp designed specifically for that service. Information on lamps for more specialized services, as well as additional types of lamps for services listed, may be obtained through your General Electric Lamp Sales or Service District representative.

LARGE LAMP DEPARTMENT

GENERAL  ELECTRIC



Edison's incomparable skill and genius and his tireless research efforts produced the first practical incandescent lamp. This first unit of the industry also laid the pattern for General Electric lamp development laboratories and research programs from which have come many memorable achievements that highlight three quarters of a century of continuous progress.

GENERAL ELECTRIC

catalog of large lamps

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G-E LAMPS BY LIGHTING SERVICES OR TYPES

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Lamps shown in this catalog are approximately one-third actual size except Fluorescent, Germicidal, Lumiline, and the Mercury Lamps. Colored lamps are shown in as close to actual colors as possible. Fluorescent lamps and the Surprise Pink Lumiline lamp are shown in approximately the colors as they appear when lighted.

One of the many private laboratories in which scientists continually work out answers to new design problems.



Progress Is Our Most Important Product

In General Electric's new Lamp Development Laboratories at Nela Park a staff of experts carry on a broad program of research and experimentation with greatly expanded facilities and supported by a vast accumulation of scientific data. From these efforts will come continued progress in the development of

more efficient lamps and new types of lamps to meet new lighting requirements—progress that will pass along to the public huge benefits in the form of tremendous savings in the cost of light and broader horizons of living made possible by better lamps and better lighting.

Installed in this section are nearly 300 lamps, 22 different types and sizes, making possible innumerable combinations of lighting effects.



Progress in application engineering is demonstrated in several "classrooms" of the General Electric Lighting Institute at Nela Park. Here, during each year, new light sources and techniques in lighting are explained and demonstrated to many thousands of "students" by the most authoritative staff of lighting experts in the world. In the above section of the Lighting Institute is demonstrated applications of lighting in retail store areas. In other sections, with equal flexibility, lighting of industrial plants, offices, schoolrooms, recreation centers, restaurants, streets, homes and many other special fields are demonstrated.

Visitors to the Institute include representatives from every division of the lighting industry; utility executives, architects, engineers, students, lighting equipment manufacturers, wholesalers, salesmen and many thousands of others who have special interest in the newest developments in lamps and lighting for home, industry or commerce.

A feature display at the Institute is a panorama of lamp types which portray the amazing range of services for which General Electric has developed specialized sources of light and related radiation. It suggests the scope of available manufacturing, engineering and distribution services.

The Measure of QUALITY!

The basic function of a lamp is to transform electric current into light. How efficiently it performs this function during its normal life is the measure of its quality.

The current any lamp consumes costs many times the cost of the lamp itself. For instance a 100-watt lamp which costs 23 cents may use more than 10 times its cost in current during its life of 750 hours. A lamp that initially, or at any time during its life, is as little as one percent less efficient than another is therefore an extravagance regardless of its cost or life rating.

Lamp quality begins with design. To make the best lamp possible for any particular lighting service requires the skill of the most expert in lamp design. For each of the more than 10,000 different types of General Electric incandescent lamps now manufactured, complete specification for each lamp part is required.

There are at present about 700 different specifications for glass parts, 200 specifications for bases, about 6000 specifications for lead-in wires and supports, a countless variety of filament wire sizes, lengths, diameters and processing schedules and more than 200 different chemicals or components. Each item must contribute to the quality

of the finished product.

Each specification, length and diameter of filament, spacing between coils, mandrel size and so forth is specified sometimes to a one hundred-thousandth part of an inch. A filament which in a single spot is 1% less in diameter (in a 6-watt lamp that is five-millionths of an inch) than specified, may reduce its life 25%. All specifications, for more than 10,000 different types of lamps, are promptly revised when new data indicates a possible improvement.

Also essential to uniform high quality is the development of lamp-making machinery and manufacturing procedures that will assure each lamp's conformance with all details of design. This is a challenge to the greatest ingenuity and skill. General Electric specialists have always met this challenge and produced machines and methods of such amazing accuracy that the most rigid standards of quality are attainable in the manufacture of any type of lamp. To make sure that all quality standards are maintained, a comprehensive testing of lamps is made during each phase of manufacture — 480 tests and checks are made from raw material to finished product — and millions of sample lamps are tested every year.

This photo shows part of the extensive life test and photometric facilities at Nela Park which are employed constantly in quality testing of lamps. Random selections of lamps from all factories arrive daily for testing. There are over 12,000 sockets for

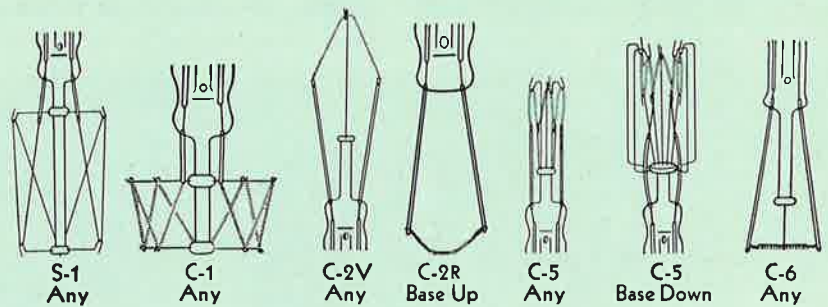
lamps of all types and sizes. Voltage is controlled by electronic devices to within one tenth of a volt in 120-volt circuits. Time of burning is determined by automatic time recorders.



G-E FILAMENT LAMPS

FILAMENTS

Electric current passing through the filament must overcome its resistance and the power consumed heats the filament to incandescence. The almost universally used filament material is tungsten. The filament may be straight wire, a coil, or a coiled-coil (indicated respectively by the letters S, C and CC). Coiling the wire reduces gas losses, increases efficiency. The illustrations show some of the commonly used filament forms (numerals) and their specific burning positions.



Gas

Used in most lamps of 40 watts and above, prevents rapid evaporation of the filament, permitting higher temperatures which result in higher efficiencies. Gas-filled lamps are indicated by the letter C, vacuum lamps by the letter B. Usual gas is a mixture of nitrogen and argon. Some lamps for special services may use krypton.

Lead-in Wires

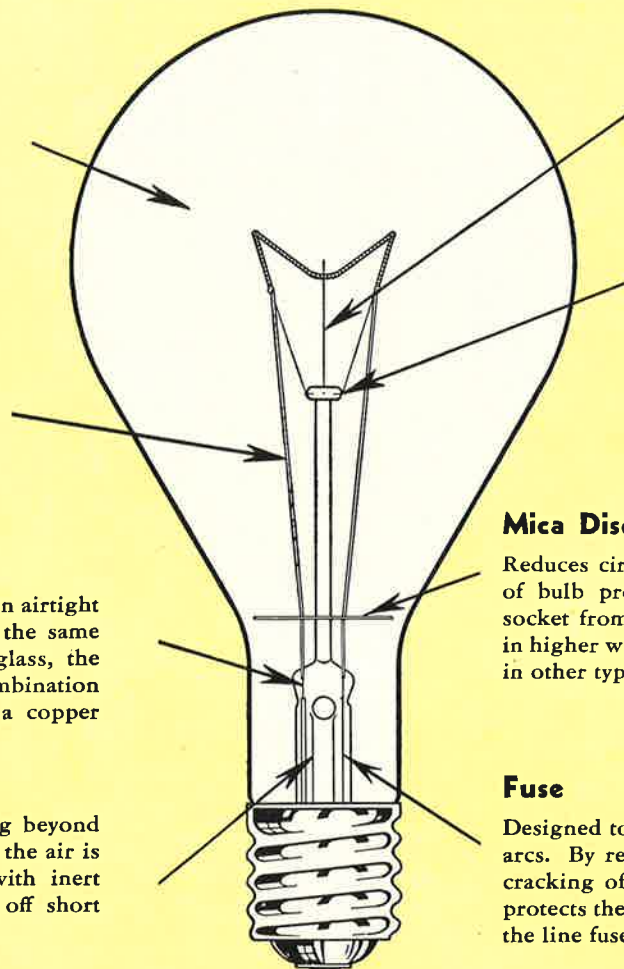
Conduct the current to and from the filament; copper used from base to stem press and nickel from stem press to filament.

Stem Press

The glass and lead-in wires have an airtight seal here. To have substantially the same coefficient of expansion as the glass, the lead-in wire at this point is a combination of a nickel-iron alloy core and a copper sleeve (Dumet wire).

Exhaust Tube

It is through this tube, projecting beyond the bulb during manufacture, that the air is exhausted and the bulb filled with inert gases. The tube is then sealed off short enough for the base to fit over it.



Support Wires

Molybdenum wires hold the filament in place; minimum number desirable to reduce heat losses.

Button

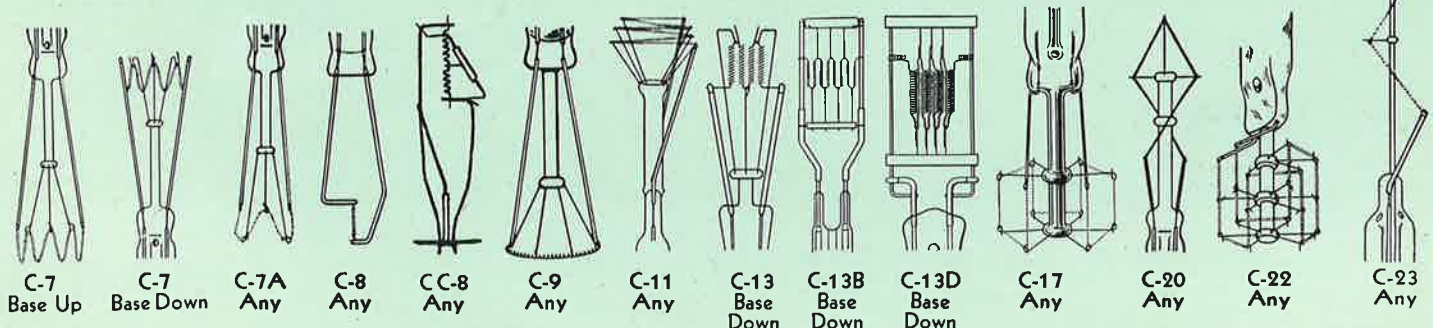
The glass is softened during assembly and the support wires stuck in it. It is supported by the button rod.

Mica Disc

Reduces circulation of hot gases into neck of bulb protecting stem press, stem and socket from excessive temperatures. Used in higher wattage general service lamps and in other types when needed.

Fuse

Designed to open the circuit if the filament arcs. By reducing sputtering of the metal, cracking of the bulb is prevented. It also protects the circuit and prevents blowing of the line fuses.



BASES

Screw bases in one of several sizes are used on most lamps. Bipost or prefocus bases are used where accurate position of light source with relation to optical elements is important. Mechanical bases are used in some high wattage lamps, flood lights and street series lamps to provide greater strength and better all around performance.



Candelabra
Cand.



Candelabra Skirted
Cand. Skirted



Intermediate
Inler.



Single Contact Bayonet Candelabra
S. C. Bay.



Double Contact Bayonet Candelabra
D. C. Bay.



Candelabra Prefocus
S. C. Pl.
D. C. Pl.



Medium
Med.



Three Contact Medium
3 C. Med.



Admedium
Admed.



Medium Prefocus
Med. Pl.



Disc
(Lumiline)



Medium Skirted
Med. Skt.



Medium Skirted
Med. Skt.



Medium Skirted
Med. Skt.



Admedium Skirted
Admed. Skt.



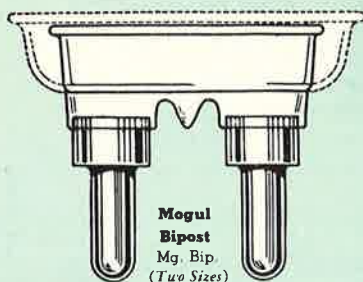
Mogul
Mog.



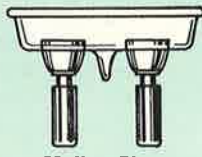
Three Contact Mogul
3 C. Mog.



Mogul Prefocus
Mog. Pl.



Mogul Bipost
Mg. Bip.
(Two Sizes)



Medium Bipost
Md. Bip.



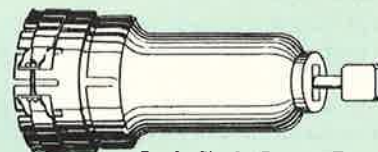
Medium Bipin
Med. Bipin
(T-8 F Lamp)



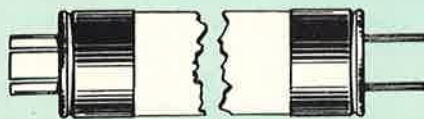
Medium Bipin
Med. Bipin
(T-12 F Lamp)



Mogul Bipin
Mog. Bipin
(T-17 F Lamp)

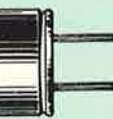


Spade Single Contact Terminal
S. C. Term.
(H3000 A-9 Lamp)

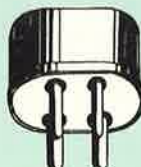


3-Prong

(Type RF Lamp)



2-Prong



Oval Small 4-Pin
(4-Watt Germicidal)



Single Pin
(T-6 Slimline)



Single Pin
(T-8 Slimline)



Single Pin Fluted
(T-8 Cold Cathode)



Single Pin
(T-12 Slimline)



4-Pin
(Circline)



Double Contact Recessed Base
(High Output Lamps)
(Power Groove Lamps)



Miniature Bipin
Min. Bipin
(T-5 F Lamp)

BULB SHAPES



The general shape of a lamp bulb is indicated by a letter or letter combination which usually is the initials of the word or words describing the shape. Thus the shapes indicated by the letters under the lamps above are:

C — Cone Shape, S — Straight Side, P — Pear Shape, F — Flame Shape, G — Globular, F — Fluorescent, T — Tubular, PS — Pear Shape, straight neck, PAR — Parabolic,

R — Reflector, FC — Fluorescent Circline, B — Arbitrary Designation, BT — Combination B and T Shapes, PG — Power-Groove.

The over-all length of a lamp is measured from top of bulb to bottom of base. The approximate diameter, measured through the greatest diameter, is given in eighths of an inch. Thus a G-25 bulb is globe shape — twenty-five eighths inches or three and one-eighth inches in diameter.

BULB FINISHES

Several different finishes are applied to lamp bulbs to obtain a desired control of light, to affect the quality of the light or to produce desired color of light. Lamp ordering abbreviations are generally made up of wattage, bulb shape, size in eighths of an inch and finish, use or other description.



G-E INSIDE FROSTED LAMPS



10S14/IF



15A15



25A



40A



50A
60A
75A



100A



150A



200A



200/IF

These lamps, which are recommended for most general lighting applications, have an inside frosting which diffuses the light, eliminates striations and helps soften shadows. The outer bulb surfaces are smooth, easy to clean, and the frosting absorbs very little light.

The range of wattages and lumen values is comprehensive. These lamps, combined with the many types of good equipments now available, provide tools to meet the many and diverse needs for residential, commercial and industrial lighting. There are small units for local lighting

and low mounting heights and larger ones for higher mounting and wider spacing. The right lamp in combination with the right reflector is essential for effective and comfortable lighting.

The 750-watt, and 1000-watt lamps are listed with tubular bulbs of heat-resistant glass and medium bipost bases. These lamps make possible the design of commercial and industrial lighting equipments smaller in size than would be necessary if designed for equal wattages in standard PS bulbs.



300M/IF



300/IF



500/IF



750T24
1M/T24



750/IF
1000/IF
1500/IF

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovrl. Lgth. |
|----------------------------------|-------|-------|----------|-------|----------------------|-------|----------|--------------------------|--------|-------------------------|------------------------|
| 10S14/IF | 10 | S-14 | Med. | 120 | 120 | B | C-9 | 1500 | 79 | 2 1/2 | 3 1/2 |
| 15A15 | 15 | A-15 | Med. | 120 | 120 | B | C-9 | 1200 | 142 | 2 3/8 | 3 1/2 |
| 25A | 25 | A-19 | Med. | 120 | 120 | B | C-9 | 1000 | 265 | 2 1/2 | 3 15/16 |
| 40A | 40 | A-19 | Med. | 120 | 120 | C | C-9 | 1000 | 465 | 2 7/8 | 4 1/4 |
| 50A | 50 | A-19 | Med. | 120 | 120 | C | CC-6 | 1000 | 665 | 3 1/8 | 4 7/16 |
| 60A | 60 | A-19 | Med. | 120 | 120 | C | CC-6 | 1000 | 840 | 3 1/8 | 4 7/16 |
| 75A | 75 | A-19 | Med. | 120 | 120 | C | CC-6 | 750 | 1150 | 3 1/8 | 4 7/16 |
| 100A | 100 | A-21 | Med. | 120 | 120 | C | CC-6 | 750 | 1640 | 3 7/8 | 5 5/16 |
| 150A | 150 | A-23 | Med. | 120 | 60 | C | CC-6 | 750 | 2700 | 4 9/8 | 6 15/16 |
| 150 | 150 | PS-25 | Med. | 120 | 60 | C | C-9 | 750 | 2600 | 5 1/4 | 6 15/16 |
| 200A | 200 | A-25 | Med. | 120 | 60 | C | CC-6 | 750 | 3800 | 5 1/4 | 6 15/16 |
| 200/IF | 200 | PS-30 | Med. | 120 | 60 | C | C-9 | 750 | 3700 | 6 | 8 1/16 |
| 300M/IF | 300 | PS-30 | Med. | 120 | 60 | C | C-9 | 750 | 5950 | 6 | 8 1/16 |
| 300/IF | 300 | PS-35 | Mog. | 120 | 24 | C | C-9 | 1000 | 5700 | 7 | 9 3/8 |
| 500/IF | 500 | PS-40 | Mog. | 120 | 24 | C | C-9 | 1000 | 9900 | 7 | 9 3/4 |
| 750/IF | 750 | PS-52 | Mog. | 120 | 6 | C | CC-8 | 1000 | 16700 | 9 1/2 | 13 1/16 |
| 750T24 ^{②③} | 750 | T-24 | Md. Bip. | 120 | 24 | C | C-13 | 1000 | 14200 | 5 1/2 | 9 1/8 |
| 1M/T24 ^{②③} | 1000 | T-24 | Md. Bip. | 120 | 24 | C | C-13 | 1000 | 20000 | 5 1/2 | 9 1/8 |
| 1000/IF | 1000 | PS-52 | Mog. | 120 | 6 | C | CC-8 | 1000 | 23000 | 9 1/2 | 13 1/16 |
| 1500/IF ^① | 1500 | PS-52 | Mog. | 120 | 6 | C | C-7A | 1000 | 33000 | 9 1/2 | 13 1/16 |

①Recommended burning position any within 60° vertically base up or base down but lumen maintenance is best when burned vertically base up.

②Burn base up.

③Special glass bulb — Heat-resistant.

G-E CLEAR LAMPS



10S14



25A/CL



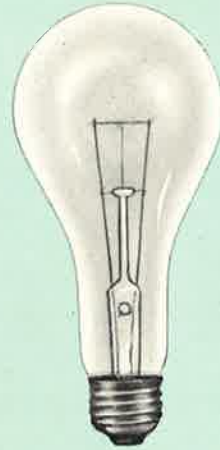
40A/CL



50A/CL
60A/CL
75A/CL



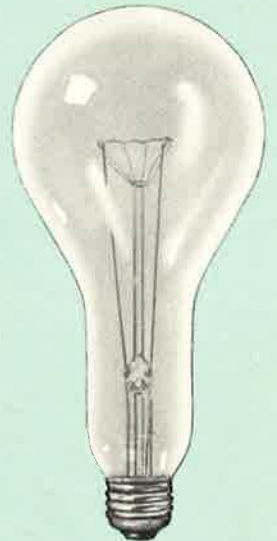
100A/CL



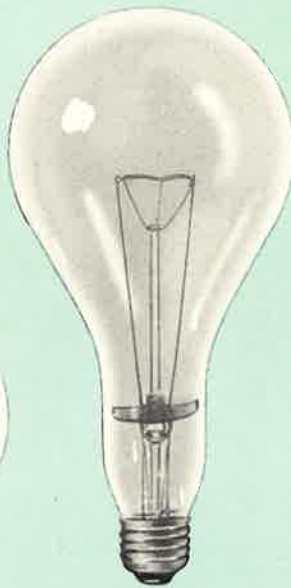
150A/CL



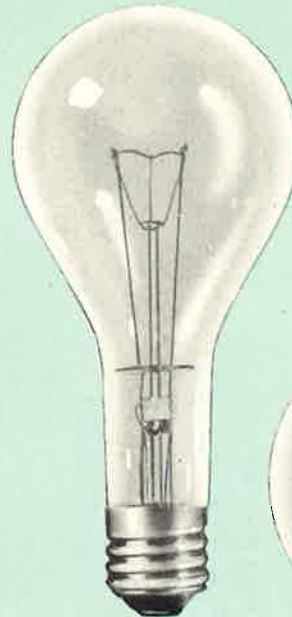
15A15/CL



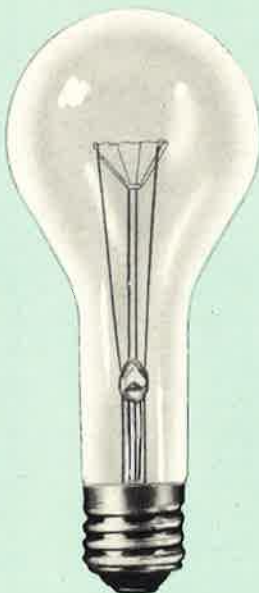
200



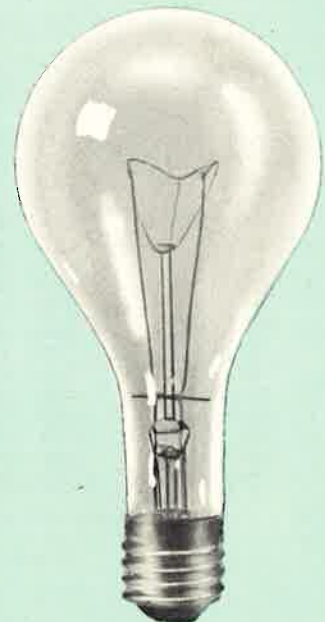
300M



300



200PS30/12



500



Clear lamps are suitable for general lighting where the bright filaments are modified by diffusing equipments or are adequately shielded by reflectors.

Gala lighting for amusement and festive areas can be obtained with clear, low-wattage lamps, unshielded. Or the lamps may be partially shielded by prisms, beads and spangles.

Some reflecting or refracting units, designed for defined beam patterns, need clear lamps for a control more accurate than is obtainable with frosted lamps.

The 1M/PS52/44 and 1500/PS52/46 lamps are made with bulbs of heat-resistant glass. They are intended for use in open floodlights for lighting outdoor sports, gas stations and parking areas. Lamp Nos. 750 and 1000 are bonus line lamps. With the new type filament in these lamps, light output is increased 15%.

In most cases 750- and 1000-watt bonus line lamps are advantageous for floodlighting service. In special cases where the beam pattern formed by the axial filament in these lamps is not satisfactory, the former C-7A filament lamps (750/7 and 1000/7) are available.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Approx. Initial Lumens | Light Cntr. Lgth. | Max. Ovrl. Lgth. |
|----------------------------------|-------|-------|------|-------|----------------------|-------|----------|--------------------------|------------------------------|-------------------------|------------------------|
| 10S14 | 10 | S-14 | Med. | 120 | 120 | B | C-9 | 1500 | 80 | 2 1/2 | 3 1/2 |
| 15A15/CL | 15 | A-15 | Med. | 120 | 120 | B | C-9 | 1200 | 144 | 2 3/8 | 3 1/2 |
| 25A/CL | 25 | A-19 | Med. | 120 | 120 | B | C-9 | 1000 | 270 | 2 1/2 | 3 1/2 |
| 40A/CL | 40 | A-19 | Med. | 120 | 120 | C | C-9 | 1000 | 465 | 2 7/8 | 4 1/4 |
| 50A/CL | 50 | A-19 | Med. | 120 | 120 | C | CC-6 | 1000 | 665 | 3 1/8 | 4 7/8 |
| 60A/CL | 60 | A-19 | Med. | 120 | 120 | C | CC-6 | 1000 | 840 | 3 1/8 | 4 7/8 |
| 75A/CL | 75 | A-19 | Med. | 120 | 120 | C | CC-6 | 750 | 1150 | 3 1/8 | 4 7/8 |
| 100A/CL | 100 | A-21 | Med. | 120 | 120 | C | CC-6 | 750 | 1640 | 3 7/8 | 5 1/8 |
| 150A/CL | 150 | A-23 | Med. | 120 | 60 | C | CC-6 | 750 | 2700 | 4 5/8 | 6 1/8 |
| 150/CL | 150 | PS-25 | Med. | 120 | 60 | C | C-9 | 750 | 2600 | 5 1/4 | 6 1/8 |
| 200A/CL | 200 | A-25 | Med. | 120 | 60 | C | CC-6 | 750 | 3800 | 5 1/4 | 6 1/8 |
| 200 | 200 | PS-30 | Med. | 120 | 60 | C | C-9 | 750 | 3700 | 6 | 8 1/8 |
| 200PS30/12 | 200 | PS-30 | Mog. | 120 | 60 | C | C-9 | 750 | 3650 | 6 3/8 | 8 1/8 |
| 300M | 300 | PS-30 | Med. | 120 | 60 | C | C-9 | 750 | 5950 | 6 | 8 1/8 |
| 300 | 300 | PS-35 | Mog. | 120 | 24 | C | C-9 | 1000 | 5700 | 7 | 9 3/8 |
| 500 | 500 | PS-40 | Mog. | 120 | 24 | C | C-9 | 1000 | 9900 | 7 | 9 3/4 |
| 750 | 750 | PS-52 | Mog. | 120 | 6 | C | CC-8 | 1000 | 16700 | 9 1/2 | 13 1/8 |
| 1000 | 1000 | PS-52 | Mog. | 120 | 6 | C | CC-8 | 1000 | 23000 | 9 1/2 | 13 1/8 |
| 1500 ^② | 1500 | PS-52 | Mog. | 120 | 6 | C | C-7A | 1000 | 33000 | 9 1/2 | 13 1/8 |
| 1M/PS52/44 ^① | 1000 | PS-52 | Mog. | 120 | 6 | C | C-7A | 1000 | 21500 | 9 1/2 | 13 1/8 |
| 1500PS52/46 ^{①②} | 1500 | PS-52 | Mog. | 120 | 6 | C | C-7A | 1000 | 33000 | 9 1/2 | 13 1/8 |

① Special glass bulb — heat-resistant.

② Recommended burning position any within 60° of vertically base up or base down but lumen maintenance is best when burned vertically, base up.

G-E SILVERED AND SEMI-SILVERED BOWL



60A/SB



100A/1SBIF



100A/1SB



150/SB



200/SBIF

Silvered bowl lamps have long been popular for efficient indirect lighting of schools, offices, homes and commercial buildings. They are also used in direct lighting equipment such as dome-type reflectors, spotlight and floodlight reflectors, and in recent designs of large-area louvered equipment. The mirrored reflecting surface is sealed against dust and dirt. The opaque bowl shields the glaring lamp filament from view; this in turn allows fixture design in which the lamp bowl is exposed so that lamp replacement is simple and direct.

Semi-silvered bowl lamps have a small open area at the bottom to provide direct downlighting emphasis over counter or display areas in stores.



200/SBIF/1



300MS/SBIF



300/SBIF



300/SBIF/1

LAMPS



500/SBIF



500/SBIF/1



750/SBIF
1000/SBIF

The process by which G-E Silvered Bowl lamps are silvered assures a high quality reflecting surface which does not dull, tarnish or deteriorate throughout the life of the lamp. The bulb is first chemically cleaned and sensitized to receive a coating of pure silver. A protective copper layer is then electrolytically deposited over the silver to prevent oxidation due to filament heat. To this is added, further, a surface of overlapping aluminum flakes. These metallic deposits, approximately 1/5000th of an inch in thickness, are firmly sealed to the glass to create a highly efficient, mirror-like reflector.

Silvered Bowl and Semi-Silvered Bowl lamps should be burned base up. Sizes from 100-watt and up should be burned in porcelain sockets.

SILVERED BOWL LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Light Cntr. Lgth. | Max. Ovrl. Lgth. |
|----------------------------------|-------|-------|----------|-------|------------------|----------------------|-------|----------|--------------------------|-------------------------|------------------------|
| 60A/SB | 60 | A-19 | Med. | 120 | I. F. Silvered | 120 | C | CC-6 | 1000 | 3 1/8 | 4 7/8 |
| 100A/1SB ^① | 100 | A-21 | Med. | 120 | I. F. Silvered | 120 | C | CC-6 | 1000 | 3 7/8 | 5 5/8 |
| 100A/1SBIF ^① | 100 | A-21 | Med. | 120 | I. F. Silvered | 120 | C | CC-6 | 1000 | 3 7/8 | 5 5/8 |
| 150/SB | 150 | PS-25 | Med. | 120 | I. F. Silvered | 60 | C | C-9 | 1000 | 5 1/4 | 6 13/16 |
| 200/SBIF | 200 | PS-30 | Med. | 120 | I. F. Silvered | 60 | C | C-9 | 1000 | 6 | 8 1/16 |
| 200/SBIF/1 | 200 | PS-30 | Med. | 120 | I. F. Semi-Silv. | 60 | C | C-9 | 1000 | 6 | 8 1/16 |
| 300MS/SBIF | 300 | PS-35 | Md. Skt. | 120 | I. F. Silvered | 24 | C | C-9 | 1000 | 7 1/2 | 9 7/8 |
| 300/SBIF | 300 | PS-35 | Mog. | 120 | I. F. Silvered | 24 | C | C-9 | 1000 | 7 | 9 3/8 |
| 300/SBIF/1 | 300 | PS-35 | Mog. | 120 | I. F. Semi-Silv. | 24 | C | C-9 | 1000 | 7 | 9 3/8 |
| 500/SBIF | 500 | PS-40 | Mog. | 120 | I. F. Silvered | 24 | C | C-9 | 1000 | 7 | 9 3/4 |
| 500/SBIF/1 | 500 | PS-40 | Mog. | 120 | I. F. Semi-Silv. | 24 | C | C-9 | 1000 | 7 | 9 3/4 |
| 750/SBIF | 750 | PS-52 | Mog. | 120 | I. F. Silvered | 6 | C | C-7A | 1000 | 9 1/2 | 13 1/16 |
| 1000/SBIF | 1000 | PS-52 | Mog. | 120 | I. F. Silvered | 6 | C | C-7A | 1000 | 9 1/2 | 13 1/16 |

^① For use only in porcelain sockets and in fixtures so designed that the temperatures of the lamp and fixture do not exceed limits for satisfactory operation.

G-E DAYLIGHT LAMPS



Daylight lamps give a somewhat "whiter" color quality of light than regular filament lamps. The use of either frosted or clear daylight lamps is usually simply a matter of choice.

However, the frosting diffuses light and helps reduce glare and sharp shadows. The clear lamps give more sparkle and shine to merchandise, such as jewelry.

DAYLIGHT LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovr. Lgth. |
|----------------------------|-------|-------|------|---------|----------------|----------------|-------|----------|--------------------|--------|-------------------|-----------------|
| 10S14/D | 10 | S-14 | Med. | 115-125 | Clear | 120 | B | C-9 | 1500 | 47 | 2 1/2 | 3 1/2 |
| 25A/D | 25 | A-19 | Med. | 115-125 | Clear | 120 | B | C-9 | 1000 | 169 | 2 1/2 | 3 1/2 |
| 60A/D | 60 | A-19 | Med. | 115-125 | Inside Frosted | 120 | C | CC-6 | 1000 | 490 | 3 1/8 | 4 1/8 |
| 100A/D | 100 | A-23 | Med. | 115-125 | Inside Frosted | 120 | C | CC-6 | 750 | 980 | 4 3/8 | 6 1/8 |
| 150/D | 150 | PS-25 | Med. | 115-125 | Inside Frosted | 60 | C | C-9 | 1000 | 1320 | 5 1/4 | 6 1/8 |
| 150/DCL | 150 | PS-25 | Med. | 115-125 | Clear | 60 | C | C-9 | 1000 | 1320 | 5 1/4 | 6 1/8 |
| 200/D | 200 | PS-30 | Med. | 115-125 | Clear | 60 | C | C-9 | 1000 | 2000 | 6 | 8 1/8 |

G-E WHITE BOWL LAMPS

White Bowl lamps are designed principally for use in open type direct lighting fixtures. They have a white enamel coating on the inside of the bowl which redirects about 80% of the light upward. About 20% of the light is diffused downward through the bowl. This redirection and diffusion improves the quality of illumination by softening shadows and reducing glare.



WHITE BOWL LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Light Cntr. Lgth. | Max. Ovr. Lgth. |
|----------------------------|-------|-------|------|-------|--------------|----------------|-------|----------|--------------------|-------------------|-----------------|
| 150/WB | 150 | PS-25 | Med. | 120 | Inside White | 60 | C | C-9 | 750 | 5 1/4 | 6 1/8 |
| 200/WB | 200 | PS-30 | Med. | 120 | Inside White | 60 | C | C-9 | 750 | 6 | 8 1/8 |
| 300/WB | 300 | PS-35 | Mog. | 120 | Inside White | 24 | C | C-9 | 1000 | 7 | 9 3/8 |

G-E THREE-LITE LAMPS



Three-lite lamps with their two filaments provide three levels of lighting. Each filament is of a different wattage and may be lighted individually or in combination with the other.

The lower wattage is for decorative or casual effects. The combined wattage of the two filaments is for use where seeing requirements are important.

The 30/230M/W, 50/150 and 100/300-watt

sizes are particularly applicable to floor, table and wall lamps having diffusing bowls. However, the 50/150R/W is especially for use in portable lamps without diffusing bowls because of its shape and special white diffusing coating. The 30/100 finds much use in vanity and dresser lamps.

Three-lite lamps are designed for base down operation with the exception of the mogul base 50/150-watt size.

THREE-LITE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Light Center Length | Max. Ovrl. Length | Approx. Initial Lumens |
|----------------------------------|-------------------|--------|---------|-------|----------------------|-------|----------|--------------------------|---------------------------|-------------------------|------------------------------|
| 30/100 | 30 70 100 | A-21 | 3c Med. | 120 | 120 | C | 2C-9 | 750 | 3¾ | 5 5/16 | 300, 980, 1280 |
| 30/230M/1W | 30 200 230 | A-25 | 3c Med. | 120 | 120 | C | 2C-2R | 1000 | 3 7/8 | 5 11/16 | 270, 3250, 3520 |
| 50/150M | 50 100 150 | PS-25 | 3c Med. | 120 | 60 | C | 2C-2R | 750 | 3 7/8 | 5 11/16 | 610, 1520, 2130 |
| 50/150 | 50 100 150 | PS-25 | 3c Mog. | 120 | 60 | C | 2C-2R | 1000 | 5 | 6 11/16 | 590, 1450, 2040 |
| 50/150M/W | 50 100 150 | PS-25 | 3c Med. | 120 | 60 | C | 2C-2R | 750 | 3 7/8 | 5 11/16 | .... .... |
| 50/150R/W | 50 100 150 | R-40 ① | 3c Med. | 120 | 24 | C | 2C-2R | 1000 | .... | 6 1/8 | 580, 1420, 2000 |
| 100/300 | 100 200 300 | G-30 ① | 3c Mog. | 120 | 60 | C | 2C-2R | 1000 | 3¾ | 6¾ | 1410, 3250, 4660 |

① Burn Base Down.

G-E DECORATIVE ENAMEL BOWL LAMPS



The Decorative Enamel Bowl lamp — “The lamp with the built-in shade” — is a complete lighting device in itself and is ready to use in open-type single and cluster ceiling fixtures now using bare lamps. Designed for base-up burning, the lamp has an enameled bowl of a warm pleasing tint for homes and similar interiors which directs approximately 2/3 of the light upward and 1/3 downward.

The 50-watt lamp in ivory or pink, is especially appropriate for two, three, four and five light fixtures. The 100-watt size in ivory only is recommended for single socket fixtures. The graceful contours and unusual style of these lamps appeal to the decorative tastes of many users such as homes, hotels, clubs, restaurants and public buildings.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Max. Ovrll. Lgth. |
|----------------------------|-------|-------|------|---------|---|----------------|-------|----------|--------------------|--------|-------------------|
| 50GA | 50 | GA-25 | Med. | 115-125 | Semi Indirect ^① I. F. Decorated Enamel Bowl | 60 | C | C-9 | 1000 | 600 | 4 $\frac{7}{16}$ |
| 50GA/DPK | 50 | GA-25 | Med. | 115-125 | Dawn Pink ^① Enamel Bowl | 60 | C | C-9 | 1000 | 600 | 4 $\frac{7}{16}$ |
| 100GA | 100 | GA-30 | Med. | 115-125 | Semi Indirect ^① I. F. Decorated Enamel Bowl | 60 | C | C-9 | 1000 | 1450 | 6 $\frac{3}{16}$ |

① Burn Base Up.

G-E YELLOW LAMPS

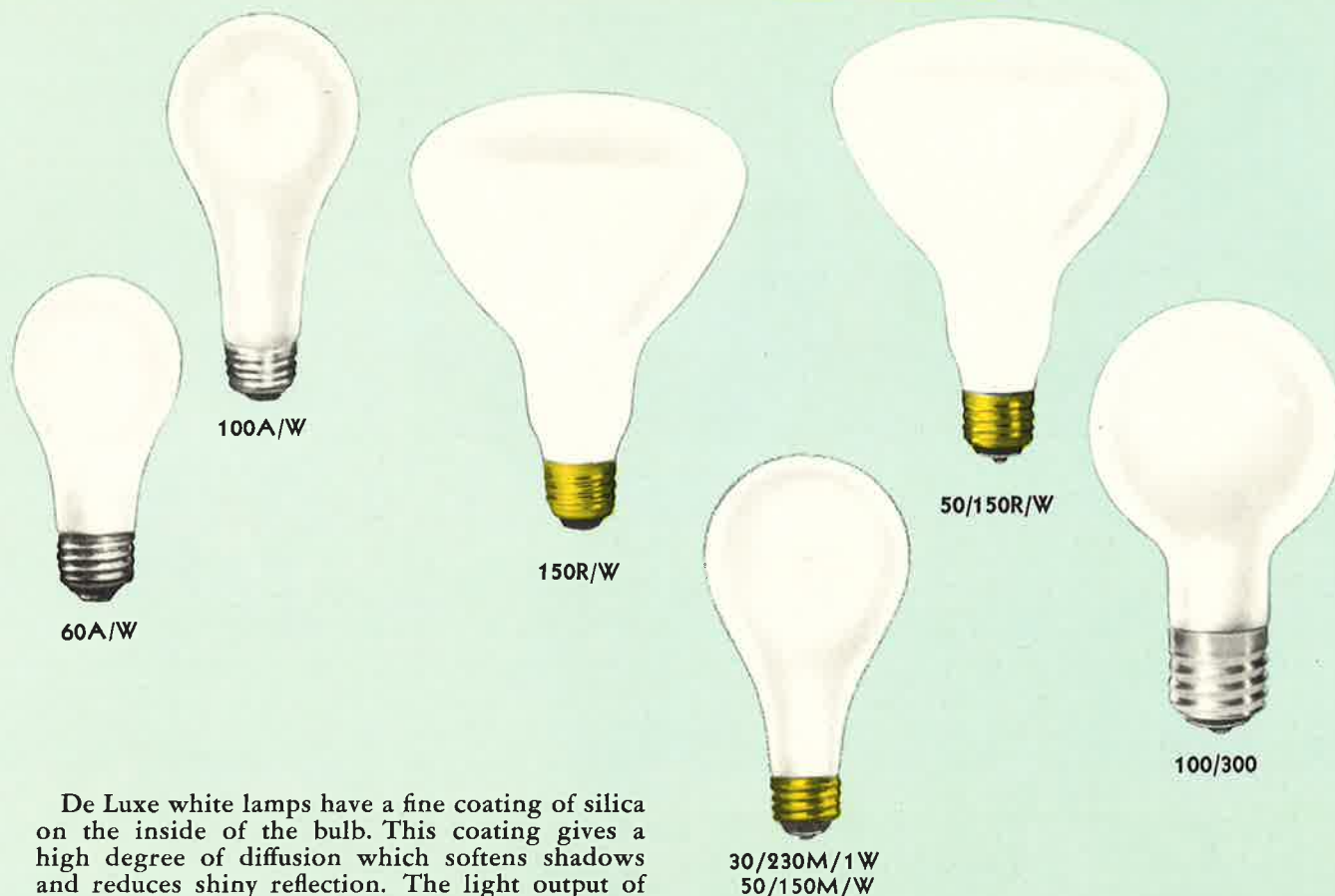


G-E Enameled Yellow Lamps, excellent for decorative lighting, are designed primarily for outdoor lighting during the season of night-flying insects. They have less attraction for insects than lamps of other colors.

Yellow lamps are used on open porches, outdoor recreation areas, filling stations, camps, roadside stands, carnivals — any place where people enjoy outdoor activities under lights.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Max. Ovrll. Lgth. |
|----------------------------|-------|-------|------|---------|----------------|-------|----------|--------------------|-------------------|
| 25A/Y | 25 | A-19 | Med. | 115-125 | 120 | B | C-9 | 1000 | 3 $\frac{5}{16}$ |
| 40A/Y | 40 | A-21 | Med. | 115-125 | 120 | B | C-9 | 1000 | 4 $\frac{7}{16}$ |
| 60A/Y | 60 | A-19 | Med. | 115-125 | 120 | C | CC-6 | 1000 | 4 $\frac{7}{16}$ |
| 100A21/61Y | 100 | A-21 | Med. | 115-125 | 120 | C | CC-6 | 1000 | 5 $\frac{5}{16}$ |
| 150PS25/Y | 150 | PS-25 | Med. | 115-125 | 60 | C | C-9 | 1000 | 6 $\frac{5}{16}$ |

G-E DE LUXE WHITE BULBS



De Luxe white lamps have a fine coating of silica on the inside of the bulb. This coating gives a high degree of diffusion which softens shadows and reduces shiny reflection. The light output of white lamps is approximately the same as that of inside frosted lamps of the same wattage. Since bulb blackening is not apparent through this new diffuse coating the lamps appear clean and white throughout life. The 50/150M/W lamp is for base down burning in floor, table or wall lamps.

The 60A/W and 100A/W lamps are especially suitable for use in residential fixtures and portable lamps.

The 30/230M/W provides the highest range between high and low levels of light.

The 150R/W and 50/150R/W have a special bulb shape and diffusing coatings with a variation in density which produces a controlled distribution of light when used in portable floor, table and wall lamps without diffusing bowls.

DE LUXE WHITE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovrl. Lgth. |
|----------------------------|-------------|-------|-------------|-------|---|----------------|-------|----------|--------------------|----------------------|-------------------------------|--------------------------------|
| 30/230M/1W | 30-200-230 | PS-25 | 3C | 120 | High-Low De Luxe White ^① | 60 | C | 2C-2R | 1000 | 270 3250 3520 | 3 ⁷ / ₈ | 5 ¹ / ₁₆ |
| 60A/W | 60 | A-19 | Med. | 120 | White | 120 | C | CC-6 | 1000 | 835 | .... | 4 ⁷ / ₁₆ |
| 100A/W | 100 | A-21 | Med. | 120 | White | 120 | C | CC-6 | 750 | 1640 | 3 ⁷ / ₈ | 5 ¹ / ₁₆ |
| 150R/W | 150 | R-40 | Med. | 120 | White Indirect ^① | 24 | C | C-9 | 1000 | 2200 | .... | 6 ³ / ₈ |
| 50/150R/W | 50-100-150 | R-40 | 3C. Med. | 120 | White Indirect ^① Three Lite | 24 | C | 2C-2R | 1000 | 580 1420 2000 | .... | 6 ³ / ₈ |
| 50/150M/W | 50-100-150 | PS-25 | 3C. Med. | 120 | White Indirect ^① | 60 | C | 2C-2R | 750 | .... | 3 ⁷ / ₈ | 5 ¹ / ₁₆ |
| 100/300 | 100-200-300 | G-30 | 3C. Mog. | 120 | White Indirect Three Lite ^① | 60 | C | 2C-2R | 1000 | 1410 3250 4660 | ... | 6 ³ / ₄ |

① Burn Base Down

G-E COLORAMIC LAMPS



60A/DPK



25F/DPK



50GA/DPK



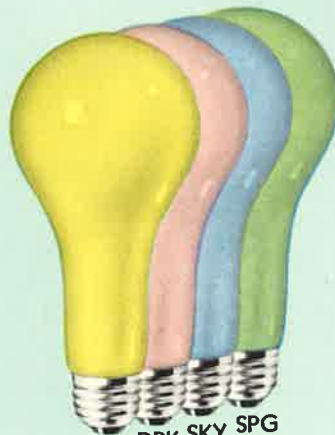
100/300/DPK



SKY SPG SUN DPK
75A



SPG SUN DPK SKY
100A



SUN DPK SKY SPG
150A



DPK SKY SPG SUN
50/150M

These new G-E Coloramic Lamps introduce a new concept in residential lighting and provide new lighting effects for shops, hotels, restaurants and special displays. The four colors were selected to work harmoniously with a wide variety of colors and color schemes. The light from each color is also softened by the diffuse ceramic enamel coating on the lamp bulbs.

All four colors in the Coloramic line achieve highly desirable and pleasing effects on both furnishings and complexions because each contains a special exclusive G-E development — the "Red Component" of color. This is the element in light that gives the vital glow of life and health to all it touches. Even in light from Spring Green and Sky Blue bulbs, the warm tones persist. One or more colors may be used with pleasant color effects in any room, with any color scheme. They enhance the appearance of any material, woods, fabrics, metals, leather and bring out soft glowing skin tones. All colors produce intriguing changes from ordinary white light.

The four General Electric Coloramic colors are Sun Gold, Dawn Pink, Spring Green and Sky Blue. The Dawn Pink is the previous Deluxe Pink.

Each color of light is delicate and each is related to the colors of light found in nature's effects which each name suggests.

Sun gold is luminous, radiant, warm, — like the sunset.

Dawn Pink is rosy, warm, soft — like the tinted early morning clouds.

Spring Green is mildly cool, verdant — the color of new foliage.

Sky Blue is cool and soft. Its rosy overtones create new warmth and glow. Everything that is red is brought to life even though the light is bluish.

Each of the four Coloramic colors are available in four wattages — 75, 100, 150 and 50/100 watts.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Max. Ovrl. Lgth. | Light Center Lgth. |
|----------------------------------|-------------------|-------------------|-------------|---------|---|----------------------|-------|----------|--------------------------|------------------------|--------------------------|
| 25F/DPK | 25 | F15 Decorative | Med. | 115-125 | Coloramic Dawn Pink | 120 | B | C-9 | 750 | 4½ | ..... |
| 50GA/DPK | 50 | GA-25 | Med. | 115-125 | Coloramic Enamel Bowl Dawn Pink | 60 | C | C-9 | 1000 | 4⅞ | ..... |
| 60A/DPK | 60 | A-19 | Med. | 115-125 | Coloramic Dawn Pink | 120 | C | CC-6 | 1000 | 4⅞ | 3⅞ |
| 100/300/DPK | 100 200 300 | G-30 | 3C. Mog. | 115-125 | Three-Lite Indi- rect Coloramic Dawn Pink | 60 | C | 2C-2R | 1000 | 6¾ | 3⅞ |
| 50/150M/SKY | 50 100 150 | PS-25 | 3C. Med. | 115-125 | Coloramic Three-Lite Sky Blue | 60 | C | 2C-2R | 750 | 5½ | 3⅞ |
| 50/150M/SPG | 50 100 150 | PS-25 | 3C. Med. | 115-125 | Coloramic Three-Lite Spring Green | 60 | C | 2C-2R | 750 | 5½ | 3⅞ |
| 50/150M/SUN | 50 100 150 | PS-25 | 3C. Med. | 115-125 | Coloramic Three-Lite Sun Gold | 60 | C | 2C-2R | 750 | 5½ | 3⅞ |
| 50/150M/DPK | 50 100 150 | PS-25 | 3C. Med. | 115-125 | Coloramic Three-Lite Dawn Pink | 60 | C | 2C-2R | 750 | 5½ | 3⅞ |
| 75A/SKY | 75 | A-19 | Med. | 115-125 | Coloramic Sky Blue | 120 | C | CC-6 | 1000 | 4⅞ | 3⅞ |
| 75A/SPG | 75 | A-19 | Med. | 115-125 | Coloramic Spring Green | 120 | C | CC-6 | 1000 | 4⅞ | 3⅞ |
| 75A/SUN | 75 | A-19 | Med. | 115-125 | Coloramic Sun Gold | 120 | C | CC-6 | 1000 | 4⅞ | 3⅞ |
| 75A/DPK | 75 | A-19 | Med. | 115-125 | Coloramic Dawn Pink | 120 | C | CC-6 | 1000 | 4⅞ | 3⅞ |
| 100A/SKY | 100 | A-21 | Med. | 115-125 | Coloramic Sky Blue | 120 | C | CC-6 | 1000 | 5½ | 3⅞ |
| 100A/SPG | 100 | A-21 | Med. | 115-125 | Coloramic Spring Green | 120 | C | CC-6 | 1000 | 5½ | 3⅞ |
| 100A/SUN | 100 | A-21 | Med. | 115-125 | Coloramic Sun Gold | 120 | C | CC-6 | 1000 | 5½ | 3⅞ |
| 100A/DPK | 100 | A-21 | Med. | 115-125 | Coloramic Dawn Pink | 120 | C | CC-6 | 1000 | 5½ | 3⅞ |
| 150A/SKY | 150 | A-23 | Med. | 115-125 | Coloramic Sky Blue | 60 | C | CC-6 | 1000 | 6½ | 3⅞ |
| 150A/SPG | 150 | A-23 | Med. | 115-125 | Coloramic Spring Green | 60 | C | CC-6 | 1000 | 6½ | 3⅞ |
| 150A/SUN | 150 | A-23 | Med. | 115-125 | Coloramic Sun Gold | 60 | C | CC-6 | 1000 | 6½ | 3⅞ |
| 150A/DPK | 150 | A-23 | Med. | 115-125 | Coloramic Dawn Pink | 60 | C | CC-6 | 1000 | 6½ | 3⅞ |

G-E DECORATIVE LAMPS



6S6/R

6S6/W



15FC



15B9 1/2

15B9 1/2/W



25G16 1/2 C

25G16 1/2 C/W



15T8C

15T8C/W

15T8/N



15S11/13



25G18 1/2 FT

25G18 1/2 V

25G18 1/2 W



25G25 FT

25G25 V

25G25 W



25F

25F/FT

25F/V

25F/W



40F15

40F15/W



40G FT

40G V

40G W



60A21/AO

60A21/B

60A21/FT

60A21/G

60A21/V

60A21/RO

60A21/R

60A21/Y



7 1/2 S

7 1/2 S/AO

7 1/2 S/B

7 1/2 S/G

7 1/2 S/R

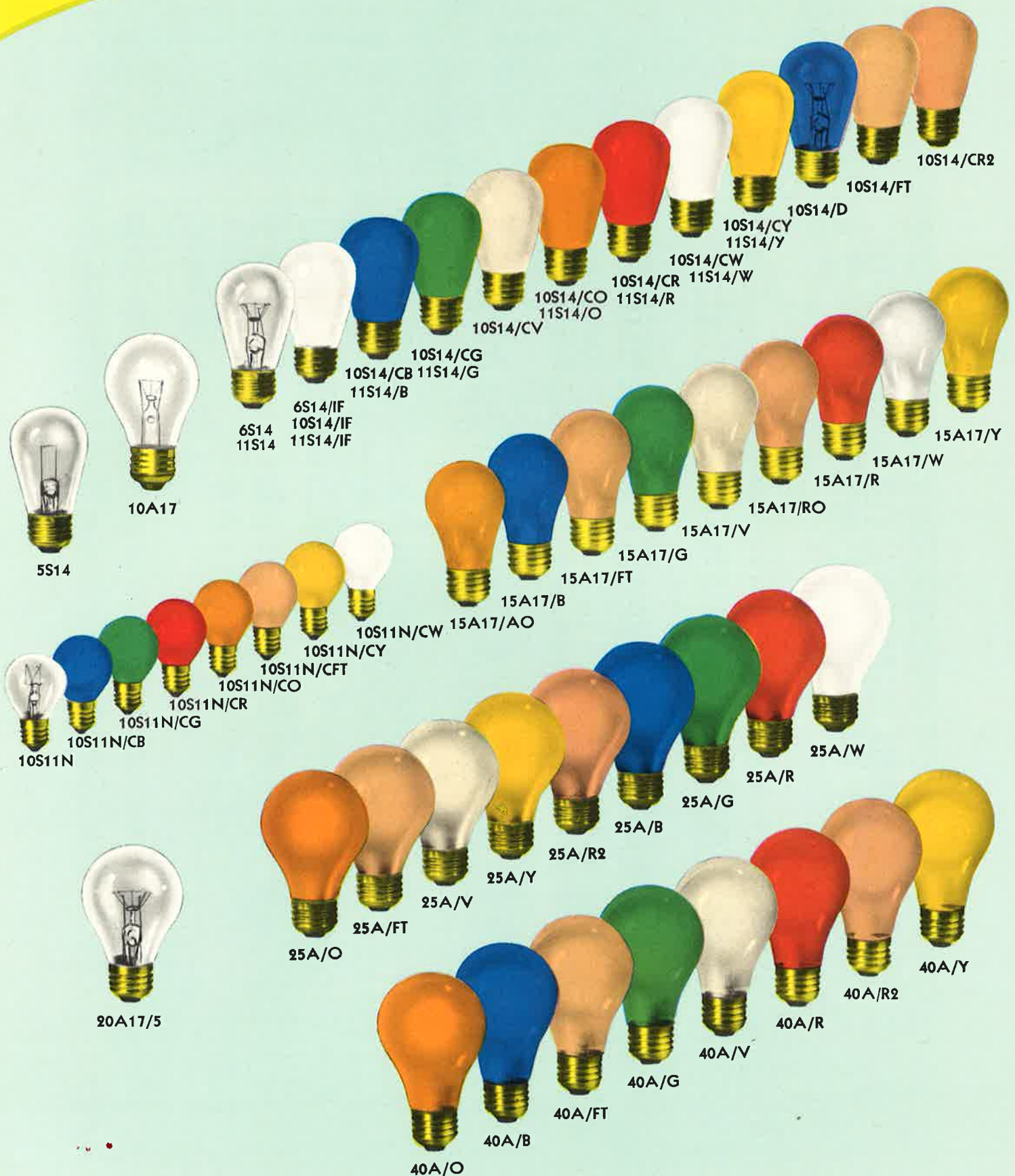
7 1/2 S/W

These lamps are designed for interior applications such as cove lighting, decorative designs, and special effects in homes, theatres, public buildings, restaurants, lobbies, and foyers. Outside coated lamps are not recommended for outdoor use.

DECORATIVE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Length | Max. Ovrl. Length |
|----------------------------------|-------|----------|--------|---------|--------------|----------------------|-------|----------|--------------------------|--------|--------------------------|-------------------------|
| 6S6/R | 6 | S-6 | Cand. | 115-125 | Red | 240 | B | C-7A | 1500 | ..... | ..... | 1 7/8 |
| 6S6/W | 6 | S-6 | Cand. | 115-125 | White | 240 | B | C-7A | 1500 | ..... | ..... | 1 7/8 |
| 7 1/2 S | 7 1/2 | S-11 | Med. | 115-125 | Clear | 120 | B | C-7A | 1400 | 52 | ..... | 2 1/4 |
| 7 1/2 S/CO | 7 1/2 | S-11 | Med. | 115-125 | Orange | 120 | B | C-7A | 1400 | ..... | ..... | 2 1/4 |
| 7 1/2 S/CB | 7 1/2 | S-11 | Med. | 115-125 | Blue | 120 | B | C-7A | 1400 | ..... | ..... | 2 1/4 |
| 7 1/2 S/CG | 7 1/2 | S-11 | Med. | 115-125 | Green | 120 | B | C-7A | 1400 | ..... | ..... | 2 1/4 |
| 7 1/2 S/CR | 7 1/2 | S-11 | Med. | 115-125 | Red | 120 | B | C-7A | 1400 | ..... | ..... | 2 1/4 |
| 7 1/2 S/CW | 7 1/2 | S-11 | Med. | 115-125 | White | 120 | B | C-7A | 1400 | ..... | ..... | 2 1/4 |
| 15FC | 15 | F-10 | Cand. | 115-125 | Clear | 60 | B | C-7A | 750 | 145 | ..... | 3 1/16 |
| 15FC/FT | 15 | F-10 | Cand. | 115-125 | OC-Flametint | 60 | B | C-7A | 750 | ..... | ..... | 3 1/16 |
| 15FC/V | 15 | F-10 | Cand. | 115-125 | OC-Ivory | 60 | B | C-7A | 750 | ..... | ..... | 3 1/16 |
| 15FC/W | 15 | F-10 | Cand. | 115-125 | OC-White | 60 | B | C-7A | 750 | ..... | ..... | 3 1/16 |
| 15FN | 15 | F-10 | Inter. | 115-125 | Clear | 60 | B | C-7A | 750 | 145 | ..... | 3 1/8 |
| 15FN/W | 15 | F-10 | Inter. | 115-125 | White | 60 | B | C-7A | 750 | ..... | ..... | 3 1/8 |
| 15S11/13 | 15 | S-11 | Cand. | 115-125 | Clear | 120 | B | C-7A | 750 | 145 | 1 5/8 | 2 1/4 |
| 15T8C | 15 | T-8 | Cand. | 115-125 | Clear | 60 | B | C-7A | 750 | 144 | ..... | 3 1/16 |
| 15T8C/W | 15 | T-8 | Cand. | 115-125 | OC-White | 60 | B | C-7A | 750 | ..... | ..... | 3 1/16 |
| 15T8/N | 15 | T-8 | Inter. | 115-125 | Clear | 60 | B | C-7A | 750 | 144 | ..... | 3 1/8 |
| 15B9 1/2 | 15 | B-9 1/2 | Cand. | 115-125 | Clear | 60 | B | C-7A | 750 | 147 | ..... | 3 5/16 |
| 15B9 1/2/W | 15 | B-9 1/2 | Cand. | 115-125 | OC-White | 60 | B | C-7A | 750 | ..... | ..... | 3 1/16 |
| 25F | 25 | F-15 | Med. | 115-125 | Clear | 120 | B | C-9 | 750 | 275 | ..... | 4 1/2 |
| 25F/FT | 25 | F-15 | Med. | 115-125 | OC-Flametint | 120 | B | C-9 | 750 | ..... | ..... | 4 1/2 |
| 25F/V | 25 | F-15 | Med. | 115-125 | OC-Ivory | 120 | B | C-9 | 750 | ..... | ..... | 4 1/2 |
| 25F/W | 25 | F-15 | Med. | 115-125 | OC-White | 120 | B | C-9 | 750 | ..... | ..... | 4 1/2 |
| 25G16 1/2 C | 25 | G-16 1/2 | Cand. | 115-125 | Clear | 60 | B | C-7A | 750 | 260 | ..... | 3 |
| 25G16 1/2 C/W | 25 | G-16 1/2 | Cand. | 115-125 | White | 60 | B | C-7A | 750 | ..... | ..... | 3 |
| 25G18 1/2/FT | 25 | G-18 1/2 | Med. | 115-125 | OC-Flametint | 120 | B | C-9 | 750 | ..... | ..... | 3 9/16 |
| 25G18 1/2/V | 25 | G-18 1/2 | Med. | 115-125 | OC-Ivory | 120 | B | C-9 | 750 | ..... | ..... | 3 9/16 |
| 25G18 1/2/W | 25 | G-18 1/2 | Med. | 115-125 | OC-White | 120 | B | C-9 | 750 | ..... | ..... | 3 9/16 |
| 25G25/FT | 25 | G-25 | Med. | 120 | OC-Flametint | 60 | B | C-9 | 750 | ..... | ..... | 4 7/16 |
| 25G25/V | 25 | G-25 | Med. | 120 | OC-Ivory | 60 | B | C-9 | 750 | ..... | ..... | 4 7/16 |
| 25G25/W | 25 | G-25 | Med. | 120 | OC-White | 60 | B | C-9 | 750 | ..... | ..... | 4 7/16 |
| 40F15 | 40 | F-15 | Med. | 115-125 | Clear | 120 | C | C-9 | 750 | 450 | ..... | 4 1/2 |
| 40F15/W | 40 | F-15 | Med. | 115-125 | White | 120 | C | C-9 | 750 | ..... | ..... | 4 1/2 |
| 40G/FT | 40 | G-25 | Med. | 115-125 | OC-Flametint | 60 | B | C-9 | 750 | ..... | ..... | 4 1/16 |
| 40G/V | 40 | G-25 | Med. | 115-125 | OC-Ivory | 60 | B | C-9 | 750 | ..... | ..... | 4 1/16 |
| 40G/W | 40 | G-25 | Med. | 115-125 | OC-White | 60 | B | C-9 | 750 | ..... | ..... | 4 1/16 |
| 60A21/AO | 60 | A-21 | Med. | 115-125 | OC-Amber | 120 | C | C-9 | 1000 | ..... | ..... | 4 15/16 |
| 60A21/B | 60 | A-21 | Med. | 115-125 | OC-Blue | 120 | C | C-9 | 1000 | ..... | 3 3/8 | 4 15/16 |
| 60A21/FT | 60 | A-21 | Med. | 115-125 | OC-Flametint | 120 | C | C-9 | 1000 | ..... | 3 3/8 | 4 15/16 |
| 60A21/G | 60 | A-21 | Med. | 115-125 | OC-Green | 120 | C | C-9 | 1000 | ..... | 3 3/8 | 4 15/16 |
| 60A21/V | 60 | A-21 | Med. | 115-125 | OC-Ivory | 120 | C | C-9 | 1000 | ..... | 3 3/8 | 4 15/16 |
| 60A21/RO | 60 | A-21 | Med. | 115-125 | OC-Old Rose | 120 | C | C-9 | 1000 | ..... | 3 3/8 | 4 15/16 |
| 60A21/R | 60 | A-21 | Med. | 115-125 | OC-Red | 120 | C | C-9 | 1000 | ..... | 3 3/8 | 4 15/16 |
| 60A21/Y | 60 | A-21 | Med. | 115-125 | OC-Yellow | 120 | C | C-9 | 1000 | ..... | 3 3/8 | 4 15/16 |

G-E SIGN AND DECORATIVE LAMPS



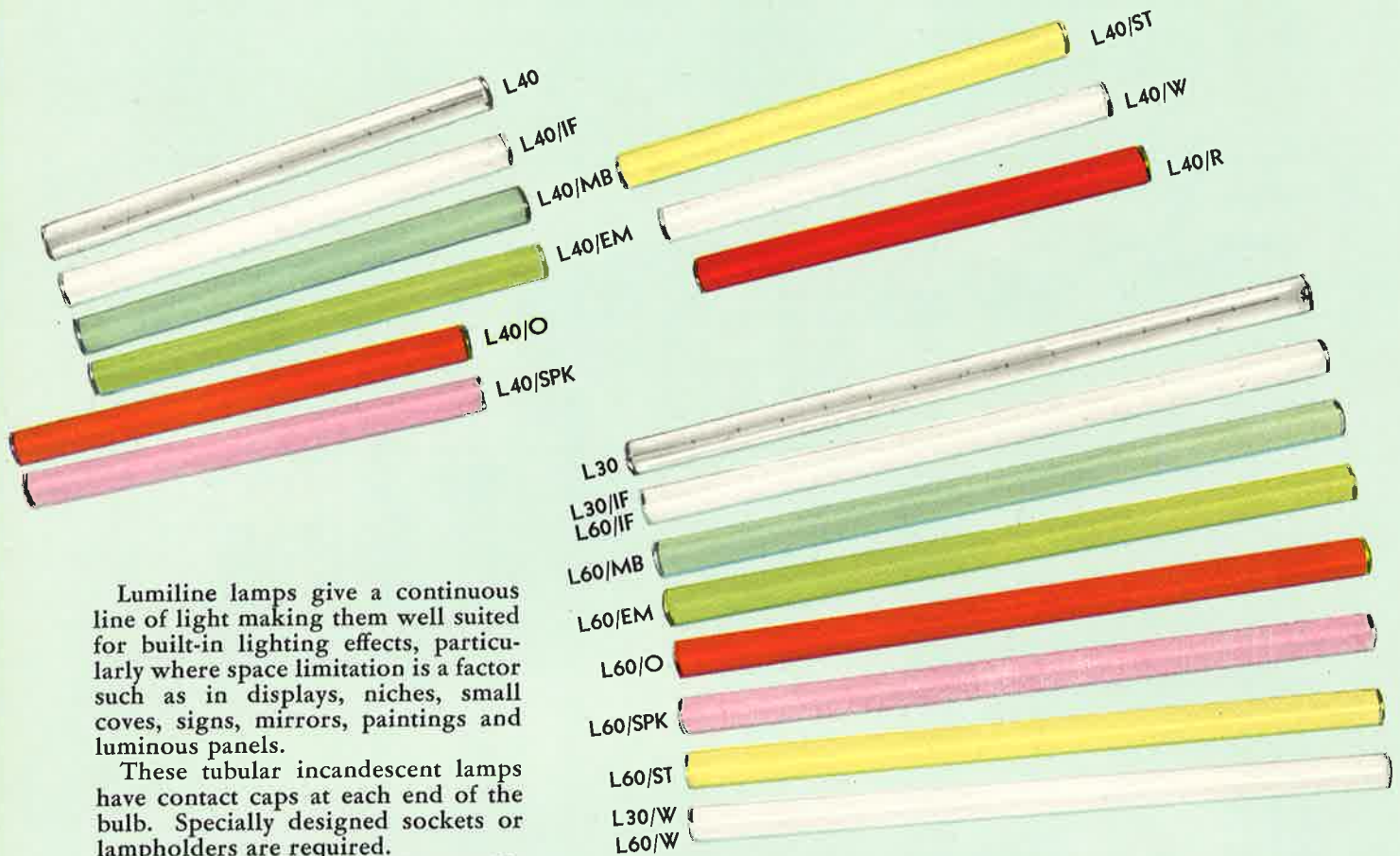
These lamps are used for outdoor signs, Christmas and other decorations, carnivals, fairs, and festoon lighting as well as many

interior applications. The color is a fired on, glass-like material that will not scratch, chip, peel, or come off when exposed to the weather. Colors are clear and bright, and they are designed for maximum appeal both in combination and alone.

SIGN AND DECORATIVE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovrll. Lgth. |
|----------------------------|-------|------|--------|---------|----------------|----------------|-------|----------|--------------------|--------|-------------------|-------------------|
| 6S14 | 6 | S-14 | Med. | 115-125 | Clear | 120 | B | C-9 | 1500 | 41 | 2 1/2 | 3 1/2 |
| 6S14/IF | 6 | S-14 | Med. | 115-125 | Inside Frosted | 120 | B | C-9 | 1500 | 41 | 2 1/2 | 3 1/2 |
| 10S11N | 10 | S-11 | Inter. | 115-125 | Clear | 120 | B | C-7A | 1500 | 80 | 1 5/8 | 2 5/16 |
| 10S11N/CB | 10 | S-11 | Inter. | 115-125 | Blue | 120 | B | C-7A | 1500 | ..... | ..... | 2 5/16 |
| 10S11N/CG | 10 | S-11 | Inter. | 115-125 | Green | 120 | B | C-7A | 1500 | ..... | ..... | 2 5/16 |
| 10S11N/CR | 10 | S-11 | Inter. | 115-125 | Red | 120 | B | C-7A | 1500 | ..... | ..... | 2 5/16 |
| 10S11N/CO | 10 | S-11 | Inter. | 115-125 | Orange | 120 | B | C-7A | 1500 | ..... | ..... | 2 5/16 |
| 10S11N/CFT | 10 | S-11 | Inter. | 115-125 | Flametint | 120 | B | C-7A | 1500 | ..... | ..... | 2 5/16 |
| 10S11N/CY | 10 | S-11 | Inter. | 115-125 | Yellow | 120 | B | C-7A | 1500 | ..... | ..... | 2 5/16 |
| 10S11N/CW | 10 | S-11 | Inter. | 115-125 | White | 120 | B | C-7A | 1500 | ..... | ..... | 2 5/16 |
| 11S14 | 11 | S-14 | Med. | 120 | Clear | 120 | B | C-9 | 3000 | 80 | 3 1/2 | 2 1/2 |
| 11S14IF | 11 | S-14 | Med. | 120 | Inside Frosted | 120 | B | C-9 | 3000 | 79 | 3 1/2 | 2 1/2 |
| 11S14/B | 11 | S-14 | Med. | 115-125 | Blue | 120 | B | C-9 | 3000 | ..... | 3 1/2 | 2 1/2 |
| 11S14/G | 11 | S-14 | Med. | 115-125 | Green | 120 | B | C-9 | 3000 | ..... | 3 1/2 | 2 1/2 |
| 11S14/O | 11 | S-14 | Med. | 115-125 | Orange | 120 | B | C-9 | 3000 | ..... | 3 1/2 | 2 1/2 |
| 11S14/R | 11 | S-14 | Med. | 115-125 | Red | 120 | B | C-9 | 3000 | ..... | 3 1/2 | 2 1/2 |
| 11S14/W | 11 | S-14 | Med. | 115-125 | White | 120 | B | C-9 | 3000 | ..... | 3 1/2 | 2 1/2 |
| 11S14/Y | 11 | S-14 | Med. | 115-125 | Yellow | 120 | B | C-9 | 3000 | ..... | 3 1/2 | 2 1/2 |
| 10S14/CB | 10 | S-14 | Med. | 115-125 | Blue | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 10S14/CG | 10 | S-14 | Med. | 115-125 | Green | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 10S14/CR | 10 | S-14 | Med. | 115-125 | Red | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 10S14/CO | 10 | S-14 | Med. | 115-125 | Orange | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 10S14/CY | 10 | S-14 | Med. | 115-125 | Yellow | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 10S14/CW | 10 | S-14 | Med. | 115-125 | White | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 10S14/CFT | 10 | S-14 | Med. | 115-125 | Flametint | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 10S14/CV | 10 | S-14 | Med. | 115-125 | Ivory | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 10S14/CR2 | 10 | S-14 | Med. | 115-125 | Rose | 120 | B | C-9 | 1500 | ..... | ..... | 3 1/2 |
| 15A17/AO | 15 | A-17 | Med. | 115-125 | Amber-Orange | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 15A17/B | 15 | A-17 | Med. | 115-125 | Blue | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 15A17/FT | 15 | A-17 | Med. | 115-125 | Flametint | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 15A17/G | 15 | A-17 | Med. | 115-125 | Green | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 15A17/V | 15 | A-17 | Med. | 115-125 | Ivory | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 15A17/RO | 15 | A-17 | Med. | 115-125 | Old Rose | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 15A17/R | 15 | A-17 | Med. | 115-125 | Red | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 15A17/W | 15 | A-17 | Med. | 115-125 | White | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 15A17/Y | 15 | A-17 | Med. | 115-125 | Yellow | 120 | B | C-9 | 1200 | ..... | ..... | 3 5/8 |
| 20A17/5 | 20 | A-17 | Med. | 115-125 | Clear | 120 | C | C-9 | 1000 | 150 | 2 3/8 | 3 5/8 |
| 25A/O | 25 | A-19 | Med. | 115-125 | Flashing Sign | 120 | B | C-9 | 1000 | ..... | ..... | 3 15/16 |
| 25A/FT | 25 | A-19 | Med. | 115-125 | Orange | 120 | B | C-9 | 1000 | ..... | ..... | 3 15/16 |
| 25A/Y | 25 | A-19 | Med. | 115-125 | Flametint | 120 | B | C-9 | 1000 | ..... | ..... | 3 15/16 |
| 25A/R2 | 25 | A-19 | Med. | 115-125 | Yellow | 120 | B | C-9 | 1000 | ..... | ..... | 3 15/16 |
| 25A/B | 25 | A-19 | Med. | 115-125 | O. Rose | 120 | B | C-9 | 1000 | ..... | ..... | 3 15/16 |
| 25A/G | 25 | A-19 | Med. | 115-125 | Blue | 120 | B | C-9 | 1000 | ..... | ..... | 3 15/16 |
| 25A/R | 25 | A-19 | Med. | 115-125 | Green | 120 | B | C-9 | 1000 | ..... | ..... | 3 15/16 |
| 25A/W | 25 | A-19 | Med. | 115-125 | Red | 120 | B | C-9 | 1000 | ..... | ..... | 3 15/16 |
| 25A/V | 25 | A-19 | Med. | 115-125 | White | 120 | B | C-9 | 1000 | 220 | ..... | 3 15/16 |
| 40A/O | 40 | A-21 | Med. | 115-125 | Ivory | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |
| 40A/B | 40 | A-21 | Med. | 115-125 | Orange | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |
| 40A/FT | 40 | A-21 | Med. | 115-125 | Blue | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |
| 40A/G | 40 | A-21 | Med. | 115-125 | Flametint | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |
| 40A/V | 40 | A-21 | Med. | 115-125 | Green | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |
| 40A/R | 40 | A-21 | Med. | 115-125 | Ivory | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |
| 40A/R2 | 40 | A-21 | Med. | 115-125 | Red | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |
| 40A/Y | 40 | A-21 | Med. | 115-125 | Rose | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |
| | | | | | Yellow | 120 | B | C-9 | 1000 | ..... | ..... | 4 7/16 |

G-E LUMILINE LAMPS



Lumiline lamps give a continuous line of light making them well suited for built-in lighting effects, particularly where space limitation is a factor such as in displays, niches, small coves, signs, mirrors, paintings and luminous panels.

These tubular incandescent lamps have contact caps at each end of the bulb. Specially designed sockets or lampholders are required.

These lamps are supplied in inside coating which is not affected by moisture and weather conditions. However, the lamps are generally considered for interior use.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Max. Ovr. Lgth. |
|----------------------------|-------|------|------|---------|----------------|----------------|-------|----------|--------------------|--------|--------------------------------|
| L30/IF | 30 | T-8 | Disc | 115-125 | Inside Frosted | 24 | B | C-8 | 1500 | 255 | 17 ³ / ₄ |
| L30/W | 30 | T-8 | Disc | 115-125 | White | 24 | B | C-8 | 1500 | 210 | 17 ³ / ₄ |
| L40 | 40 | T-8 | Disc | 115-125 | Clear | 24 | B | C-8 | 1500 | 370 | 11 ³ / ₄ |
| L40/IF | 40 | T-8 | Disc | 115-125 | Inside Frosted | 24 | B | C-8 | 1500 | 365 | 11 ³ / ₄ |
| L40/MB | 40 | T-8 | Disc | 115-125 | Moonlight Blue | 24 | B | C-8 | 1500 | ..... | 11 ³ / ₄ |
| L40/EM | 40 | T-8 | Disc | 115-125 | Emerald | 24 | B | C-8 | 1500 | ..... | 11 ³ / ₄ |
| L40/O | 40 | T-8 | Disc | 115-125 | Orange | 24 | B | C-8 | 1500 | ..... | 11 ³ / ₄ |
| L40/SPK | 40 | T-8 | Disc | 115-125 | Surprise Pink | 24 | B | C-8 | 1500 | ..... | 11 ³ / ₄ |
| L40/ST | 40 | T-8 | Disc | 115-125 | Straw | 24 | B | C-8 | 1500 | ..... | 11 ³ / ₄ |
| L40/W | 40 | T-8 | Disc | 115-125 | White | 24 | B | C-8 | 1500 | ..... | 11 ³ / ₄ |
| L40/R | 40 | T-8 | Disc | 115-125 | Red | 24 | B | C-8 | 1500 | ..... | 11 ³ / ₄ |
| L60 | 60 | T-8 | Disc | 115-125 | Clear | 24 | B | C-8 | 1500 | 565 | 17 ³ / ₄ |
| L60/IF | 60 | T-8 | Disc | 115-125 | Inside Frosted | 24 | B | C-8 | 1500 | 560 | 17 ³ / ₄ |
| L60/MB | 60 | T-8 | Disc | 115-125 | Moonlight Blue | 24 | B | C-8 | 1500 | ..... | 17 ³ / ₄ |
| L60/EM | 60 | T-8 | Disc | 115-125 | Emerald | 24 | B | C-8 | 1500 | ..... | 17 ³ / ₄ |
| L60/O | 60 | T-8 | Disc | 115-125 | Orange | 24 | B | C-8 | 1500 | ..... | 17 ³ / ₄ |
| L60/SPK | 60 | T-8 | Disc | 115-125 | Surprise Pink | 24 | B | C-8 | 1500 | ..... | 17 ³ / ₄ |
| L60/ST | 60 | T-8 | Disc | 115-125 | Straw | 24 | B | C-8 | 1500 | ..... | 17 ³ / ₄ |
| L60/W | 60 | T-8 | Disc | 115-125 | White | 24 | B | C-8 | 1500 | 470 | 17 ³ / ₄ |

G-E LAMPS FOR OPTICAL DEVICES

A complete catalog of all General Electric lamps for optical devices would fill many pages. These lamps serve important functions throughout the fields of science, industry and education. The lamps on this page are merely a suggestion of the many types of construction and the variety of uses of such lamps. In most of these lamps, the applications for which they are intended impose exacting standards of quality and precision in design and manufacture.



7.5A/T8/92SC



7.5A/T8SCP



5A/G16 $\frac{1}{2}$ /3



150T8/2SC



150/400



25T6 $\frac{1}{2}$ DC



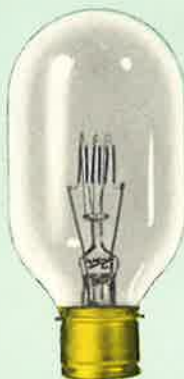
25T6 $\frac{1}{2}$ DC/IF



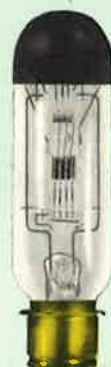
150P25/10



18A/T10/2P



500T20/64



750T12/34



100T8 $\frac{1}{2}$ /8



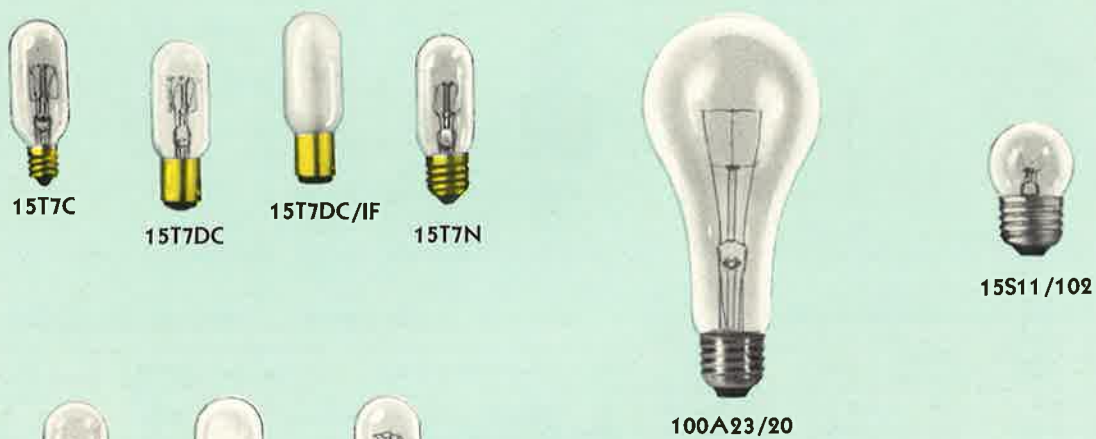
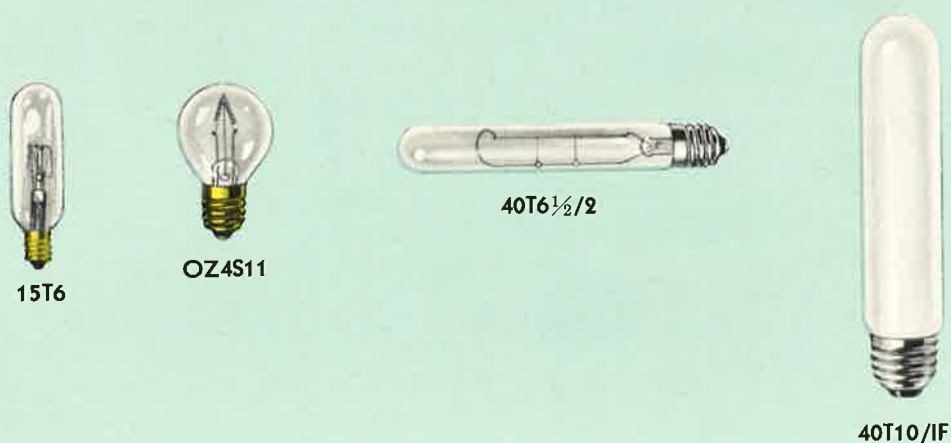
100T8 $\frac{1}{2}$ /9



125T10P

| Lamp Ordering Abbreviation | Watts or Amperes | Bulb | Base | Volts | Principle Uses | Filament | Approx. Hours Life | Lumens | L.C.L. | M.O.L. |
|----------------------------|------------------|------------------------|------------|-------|---------------------------------|----------|--------------------|--------|------------------|-----------------|
| 5A/T8SCP | 5A | T-8 | S.C. Pref. | 6 | Photoelectric Cell Excitation | C-2 | 3000 | 375 | 1 $\frac{1}{8}$ | 3 $\frac{1}{8}$ |
| 5A/G16 $\frac{1}{2}$ /3 | 5A | G-16 $\frac{1}{2}$ | S.C. Pref. | 20 | Contour Map & Micro. Proj. | CC-6 | 50 | 2500 | 1 $\frac{3}{8}$ | 3 |
| 7.5A/T8SCP | 7.5A | T-8 | S.C. Pref. | 10 | Sound Reproduction | C-6 | 100 | 1550 | 1 $\frac{3}{8}$ | 3 $\frac{1}{8}$ |
| 7.5A/T8/92SC | 7.5A | T-8 | S.C. Bay. | 10 | Sound Reproduction | C-8 | 100 | 1510 | 1 $\frac{3}{4}$ | 3 $\frac{1}{8}$ |
| 25T6 $\frac{1}{2}$ DC | 25 | T-6 $\frac{1}{2}$ | D.C. Bay. | 120 | Scale Illumination | C-8 | 1000 | 240 | ... | 5 $\frac{1}{2}$ |
| 25T6 $\frac{1}{2}$ DC/IF | 25 | T-6 $\frac{1}{2}$ I.F. | D.C. Bay. | 120 | Scale Illumination | C-8 | 1000 | 240 | ... | 5 $\frac{1}{2}$ |
| 100T8 $\frac{1}{2}$ /8 | 100 | T-8 $\frac{1}{2}$ | Med. Pf. | 120 | Microscope Illumination | CC-13 | 50 | 1850 | 2 $\frac{3}{16}$ | 5 $\frac{3}{4}$ |
| 100T8 $\frac{1}{2}$ /9 | 100 | T-8 $\frac{1}{2}$ | Med. | 120 | Microscope Illumination | CC-13 | 50 | 1850 | 3 | 5 $\frac{1}{2}$ |
| 18A/T10/2P | 18A | T-10 | Med. Pf. | 6 | Slit Illumination & Microscopes | SR-6A | 50 | 2000 | 2 $\frac{3}{16}$ | 5 $\frac{3}{4}$ |
| 125T10P | 125 | T-10 | Med. Pf. | 120 | Dental Spotlight | C-13B | 500 | 1750 | 2 $\frac{3}{16}$ | 5 $\frac{3}{4}$ |
| 150T8/2SC | 150 | T-8 | S.C. Bay. | 120 | Advertising Projection | 2CC-8 | 200 | ... | 1 $\frac{3}{8}$ | 3 $\frac{5}{8}$ |
| 150P25/10 | 150 | P-25I.F. | Med. | 120 | Hospital Spotlight | C-5 | 200 | 2100 | 3 | 4 $\frac{3}{4}$ |
| 150/400 | 250 | PS-35 | 3C. Mog. | 120 | Hospital Spotlight | 2C-7A | 200 | ... | 7 | 9 $\frac{3}{8}$ |
| | 400 | | | | | | | | | |
| 500T20/64 | 500 | T-20 | Med. Pf. | 120 | Display Spotlight | C-13 | 500 | 9500 | 2 $\frac{3}{16}$ | 5 $\frac{3}{4}$ |
| 750T12/34 | 750 | T-12 | Med. Pf. | 120 | Advertising Projection | C-13D | 200 | ... | 2 $\frac{3}{16}$ | 5 $\frac{3}{4}$ |

G-E LAMPS FOR APPLIANCE AND INDICATOR SERVICE



Appliance and indicator lamps add to the sales appeal, beauty, convenience and safety of a wide variety of equipment for home and commercial and industrial use. Lamps, properly used, provide effective illumination of equipment exteriors and interiors and also give clear indications of operations in progress. General Electric offers a complete line of lamps to appliance and equipment designers and engineers. These pages illustrate the more popular types which effectively serve most applications.

Incandescent lamps designed for use on equipment where they may be subjected to vibration or shock have special features such as filament wire, mount construction or filament windings. In general, these lamps can be burned in any position. However, when vibration or shock exist, better performance is obtained by mounting the lamp parallel to the principal direction of the vibration or shock. Fluorescent lamps in the shorter sizes have also proven to be good performers under vibration conditions.

For recessed locations in the walls of refrigerators and freezers, the 15T7, 25T8, 40T6½/2 and 40-

T10/IF lamps are particularly effective. Other lamps popular for refrigerator service are the 40A15/1 and 15S11/102.

Ozone lamps in home laundry equipment provide a freshening effect on laundered fabrics. The 40A15/1 is used to ballast the ozone lamp and light the interior of the washer or dryer if it can be in a dry location. If the lamp is located where water may strike the bulb, the 35A/A15 should be used.

Lamps for service in high ambient temperatures (ovens, rotisseries, etc.) have special basing cement and several other features which provide improved performance and longer life under such conditions. The 40A15/22 withstands temperatures up to 475°F. Commercial oven lamps are tested at 550°F.

The small S-6 lamps and the 7-watt, C-7 lamps have many applications in homes and industry but are not designed to withstand shock and vibration. The 6T4½/1 lamp is used where space requires a small standard-voltage lamp. The 10C7/4 provides more light than other indicator types.

APPLIANCE AND INDICATOR LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Principle Uses | Filament | Approx. Hr. Life | Lumens | M.O.L. |
|----------------------------|-------|------|-----------|----------------------|--------------------------------|----------|------------------|--------|---------|
| 6S6 | 6 | S-6 | Cand. | 12 | Indicator, Coin Machine | C-2V | 1500 | 50 | 1 7/8 |
| 3S6/5 | 3 | S-6 | Cand. | 120 | | C-7A | 1500 | 12 | 1 7/8 |
| 6S6 | 6 | S-6 | Cand. | 120 | | C-7A | 1500 | 41 | 1 7/8 |
| 6S6 | 6 | S-6 | Cand. | 135, 145 | | C-7A | 1500 | 36 | 1 7/8 |
| 6S6DC | 6 | S-6 | D.C. Bay. | 120 | Indicators ^⑤ | C-7A | 1500 | 40 | 1 11/16 |
| 6S6/R | 6 | S-6 | Cand. | 115-125 ^① | | C-7A | 1500 | 32 | 1 7/8 |
| 6S6/W | 6 | S-6 | Cand. | 115-125 ^① | | C-7A | 1500 | 41 | 1 7/8 |
| 6T4½/1 | 6 | T-4½ | Cand. | 120 | | C-7A | 1500 | 67 | 1 7/8 |
| 10S6/10 | 10 | S-6 | Cand. | High | Night Light, Clock | C-1 | 1500 | 36 | 2 1/8 |
| 7C7/W | 7 | C-7 | Cand. | 115-125 ^① | | C-7A | 3000 | 45 | 2 1/8 |
| 7C7 | 7 | C-7 | Cand. | 115-125 ^① | | C-7A | 3000 | 45 | 2 1/8 |
| 7C7/R | 7 | C-7 | Cand. | 115-125 ^① | | C-7A | 3000 | 80 | 2 1/8 |
| 10C7/4 | 10 | C-7 | Cand. | 115-125 ^① | Toys, Novelties, Decorative | C-7A | 1500 | 40 | 2 1/8 |
| 10C7 | 10 | C-7 | Cand. | 115-125 ^① | | C-7A | ② | 39 | 2 1/8 |
| 10C7DC | 10 | C-7 | D.C. Bay. | 115-125 ^① | | C-7A | ② | 39 | 2 1/8 |
| 40A15/1 | 40 | A-15 | Med. | 115-125 ^① | | C-9 | 1000 | 460 | 3 1/2 |
| 35A/A15 | 35A | A-15 | Med. | 110 | Ozone Ballast | C-9 | 2000 | 325 | 3 1/2 |
| 15S11/102 | 15 | S-11 | Med. | 115-125 ^① | | C-7 7/8 | 400 | 140 | 2 1/4 |
| 40T6½/2 | 40 | T-6½ | Inter. | 115-125 ^① | Refrig. Freezer | C-8 | 750 | 460 | 5 1/2 |
| 40T10/IF | 40 | T-10 | Med. | 120 | | C-8 | 1000 | 425 | 5 5/8 |
| 15T7C | 15 | T-7 | Cand. | 115-125 ^① | | C-7A | ③ | 118 | 2 5/8 |
| 15T7DC | 15 | T-7 | D.C. Bay. | 115-125 ^① | | C-7A | ③ | 115 | 2 5/8 |
| 15T7DC/IF | 15 | T-7 | D.C. Bay. | 115-125 ^① | Most Appliances, Coin Machines | C-7A | ③ | 113 | 2 5/8 |
| 15T7N | 15 | T-7 | Inter. | 115-125 ^① | | C-7A | ③ | 115 | 2 5/8 |
| 25T8DC | 25 | T-8 | D.C. Bay. | 115-125 ^① | | C-7A | ④ | 240 | 2 5/8 |
| 25T8DC/IF | 25 | T-8 | D.C. Bay. | 115-125 ^① | | C-7A | ④ | 235 | 2 5/8 |
| 25T8N | 25 | T-8 | Inter. | 115-125 ^① | Home Oven Commercial Oven | C-7A | ④ | 240 | 2 5/8 |
| 40A15/22 | 40 | A-15 | Med. | 115-125 ^① | | CC-9 | 750 | 460 | 4 |
| 100A23/20 | 100 | A-23 | Med. | 115-125 ^① | | C-6 | 1000 | 1550 | 6 1/8 |
| 15T6 | 15 | T-6 | Cand. | 120 | Power Switch-board, Clocks | C-1 | 2000 | 119 | 3 1/8 |
| 15T6 | 15 | T-6 | Cand. | 140 | | C-1 | 2000 | 114 | 3 1/8 |
| OZ4S11 | 4 | S-11 | Inter. | 10 | | C-1 | 4000 | 114 | 2 1/4 |

① Design Volts 120.

② Indefinite-long life, dependent on service conditions.

③ Average laboratory vibration life is 600 hours for sewing machine service.

④ Average laboratory vibration life is 200 hours for vacuum cleaner service.

⑤ Not recommended where shock or vibration is present.

* Indicators, Toys, Novelties, Coin Machines, Range, Air Cond., Clocks.

** Refrig., Ozone Ballast.

⑥ Other colors available.

G-E SPOTLIGHT LAMPS FOR THEATRES, PHOTOGRAPHIC AND TELEVISION STUDIOS

These lamps are designed with concentrated filaments for maximum light output in the controlled beams of spotlights used in theatres, television studios, motion picture and other photographic studios. For best lighting results, the filaments of these lamps must be accurately positioned, and the lamps should include mounting characteristics that will properly locate the filament in relation to the spotlight optical system. Therefore, most of the preferred spotlight lamps employ bipost or prefocus bases to assure accurate filament positioning. Older designs of spotlights used the lamps shown with screw bases and C-5 filaments; by changing sockets better performance is achieved with the lamps having more concentrated filaments and bipost or prefocus bases.

Spotlight lamps generally are designed for a life of 200 hours, to produce high light output with reasonable life. These lamps are used for stage lighting and for lighting television studio sets. In motion picture studios, however, even greater output is desired, particularly in the blue and green portions of the spectrum. For this service, lamps

are designed to produce color temperatures of 3200K and 3350K, to complement the sensitivity characteristics of color films. These highly efficient lamps have shorter lives, determined by the wattage and color temperature desired.

In studios where sensitive microphones are used near the lights, high-wattage lamps in certain lighting equipment sometimes produce enough audible noise to affect sound quality. To minimize this problem, General Electric employs a special low-noise construction in spotlight lamps with mogul bipost bases and G-48 bulbs.

For effective spotlight service, it is often necessary to design lamps of high wattage in relatively small bulbs. Also, the concentrated filament forms must have their coil segments spaced closely together. These characteristics require that the lamps be operated at the recommended burning positions shown in the table below to prevent filament segments from shorting together and to avoid glass temperatures that may cause the bulb to soften and bulge.

G-E SPOTLIGHT LAMPS For Theatres, Photographic and Television Studios

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Primary Application | Filament | Approx. Hours Life | Initial Lumens | L.C.L. | M.O.L. |
|----------------------------|-------|--------------------|--------------------------|-----------|---|----------|--------------------|----------------|-----------------|------------------|
| 100G16 $\frac{1}{2}$ /29SC | 100 | G-16 $\frac{1}{2}$ | {S.C. Bay. D.C. Bay.} | 120 | Spotlight ^① | CC-13 | 200 | 1,600 | 1 $\frac{3}{8}$ | 3 |
| 100G16 $\frac{1}{2}$ /29DC | | | | | | | | | | |
| 100A21/SP | 100 | A-21 | Med. | 120 | Spotlight ^② | C-5 | 200 | 1,350 | 3 | 4 $\frac{7}{16}$ |
| 250G/SP | 250 | G-30 | Med. | 120 | Spotlight ^① | C-5 | 200 | 4,300 | 3 | 5 $\frac{1}{8}$ |
| 400G/SP | 400 | G-30 | Med. | 120 | Spotlight ^① | C-5 | 20 | 8,000 | 3 | 5 $\frac{1}{8}$ |
| 750T24/5 | 750 | T-24 | Med. Bip. | 120 | Spotlight ^③ | C-13 | 200 | 17,200 | 2 $\frac{1}{2}$ | 6 $\frac{1}{2}$ |
| 750T24/13 | 750 | T-24 | Med. Bip. | 120 | 3350K Photography ^③ | C-13 | 12 | 24,000 | 2 $\frac{1}{2}$ | 6 $\frac{1}{2}$ |
| 750T24/16 | 750 | T-24 | Med. Bip. | 120 | 3200K Photography ^③ | C-13 | 50 | 20,500 | 2 $\frac{1}{2}$ | 6 $\frac{1}{2}$ |
| 1M/G48/11 | 1000 | G-48 | Mog. Bip. | 120 | Spotlight ^① | C-13 | 200 | 23,000 | 5 | 9 $\frac{3}{8}$ |
| 1M/G40/23 | 1000 | G-40 | Mog. Pf. | 120 | Spotlight ^① | C-13 | 200 | 23,000 | 3 $\frac{1}{8}$ | 8 $\frac{1}{8}$ |
| | | | | 115, 120, | | | | | | |
| 2M/G48/14 | 2000 | G-48 | Mog. Bip. | 125 | 3350K Photography ^③ | C-13 | 25 | 64,000 | 5 | 9 $\frac{3}{8}$ |
| 2M/G48/18 | 2000 | G-48 | Mog. Bip. | 120 | 3200K Photography ^③ | C-13 | 100 | 58,000 | 5 | 9 $\frac{3}{8}$ |
| 2M/G48/17 | 2000 | G-48 | Mog. Bip. | 120 | Spotlight ^③ | C-13 | 200 | 53,000 | 5 | 9 $\frac{3}{8}$ |
| | | | | 115, 120, | | | | | | |
| 5M/G64/3 | 5000 | G-64 | Mog. Bip. | 125 | 3350K Photography ^③ | C-13 | 75 | 165,000 | 6 $\frac{1}{2}$ | 11 $\frac{7}{8}$ |
| | | | | 115, 120, | | | | | | |
| 5M/G64/7 | 5000 | G-64 | Mog. Bip. | 125 | 3200K Photography ^③ | C-13 | 150 | 141,000 | 6 $\frac{1}{2}$ | 11 $\frac{7}{8}$ |
| 500T12/9 | 500 | T-12 | Med. Pf. | 120 | Ellipsoidal- Reflector Spotlight ^④ | C-13D | 200 | 10,200 | 3 $\frac{1}{2}$ | 6 $\frac{1}{8}$ |
| 500T14/8 | 500 | T-14 | Med. Bip. | 120 | | C-13D | 200 | 10,200 | 4 | 6 $\frac{3}{8}$ |
| 750T12/9 | 750 | T-12 | Med. Pf. | 120 | | C-13D | 200 | 16,500 | 3 $\frac{1}{2}$ | 6 $\frac{1}{8}$ |
| 750T14 | 750 | T-14 | Med. Bip. | 120 | | C-13D | 200 | 16,500 | 4 | 6 $\frac{3}{8}$ |
| 1M/T24/5 | 1000 | T-24 | Mog. Bip. | 120 | | C-13D | 200 | 21,500 | 6 $\frac{1}{2}$ | 10 |
| 1500T24/6 | 1500 | T-24 | Mog. Bip. | 120 | | C-13D | 200 | 33,500 | 6 $\frac{1}{2}$ | 10 |
| 2M/T30/1 | 2000 | T-30 | Mog. Bip. | 120 | | C-13D | 200 | 48,000 | 6 $\frac{1}{2}$ | 10 |

Recommended Burning Positions

- ① Base down to horizontal
- ② Any
- ③ Base down to 45 degrees with filament support bridges horizontal
- ④ Base up



100G16½/29SC



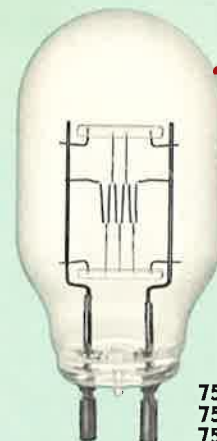
100G16½/29DC



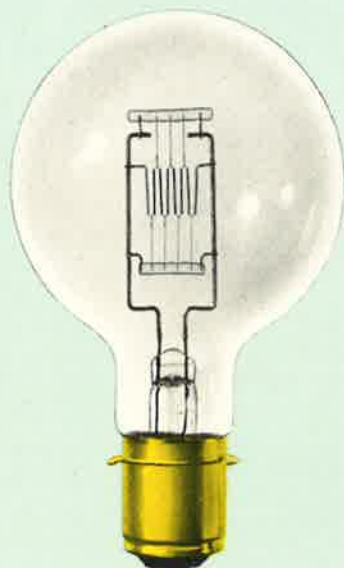
100A21/SP



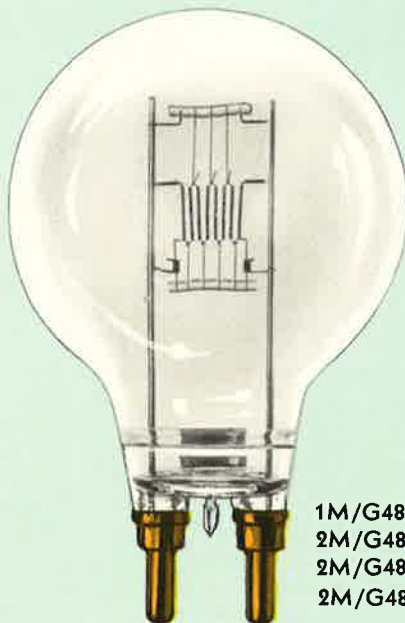
250G/SP
400G/SP



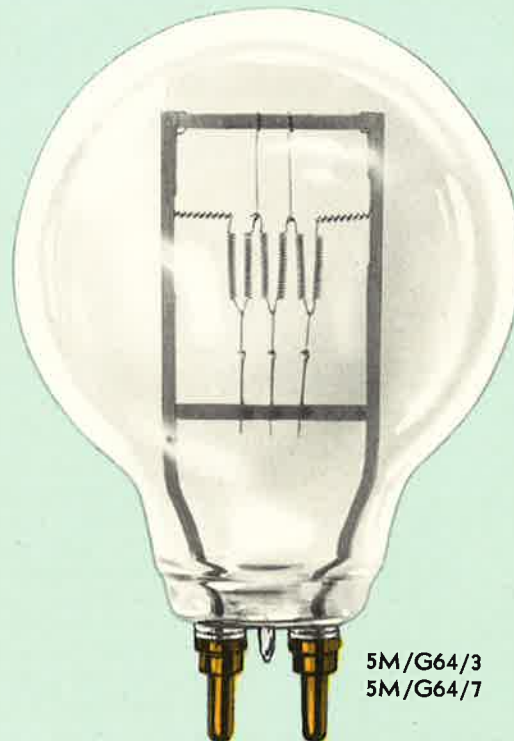
750T24/5
750T24/13
750T24/16



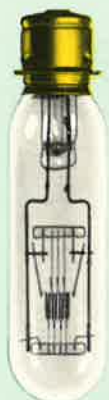
1M/G40/23



1M/G48/11
2M/G48/14
2M/G48/17
2M/G48/18



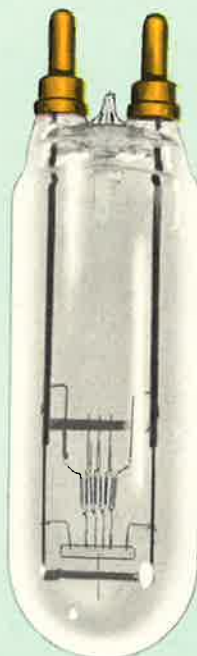
5M/G64/3
5M/G64/7



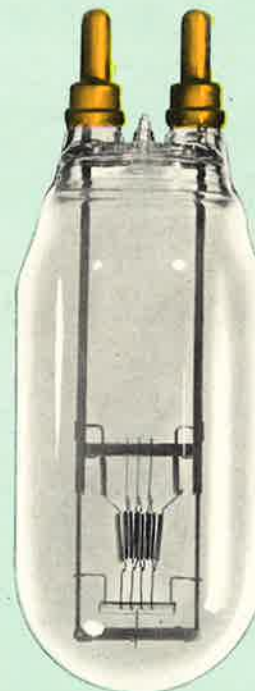
500T12/9
750T12/9



500T14/8
750T14



1M/T24/5
1500T24/6



2M/T30/1

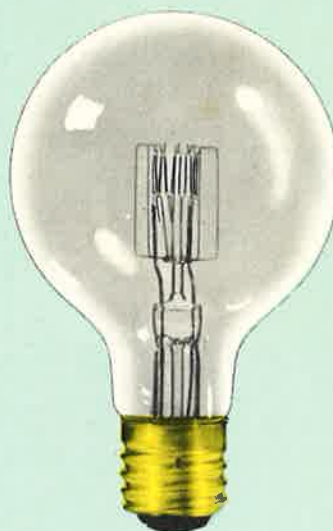
G-E FLOODLIGHT LAMPS AND SPOTLIGHT LAMPS



250G/FL
400G/FL



500G/FL



1M/G40FL



1500G48/6

These lamps have concentrated filaments and are used in equipments which produce accurately controlled beams of light. There are several "companion listings" of spotlight and floodlight lamps having the same dimensions but differing in life design. Floodlight lamps are used where burning hours are long, such as in building floodlighting and show window lighting. Spotlight lamps are used for those applications where burning hours are short and higher light output is needed — particularly in the blue and green portions of the visible spectrum. The T-12 and T-14 lamps are for use in ellipsoidal projectors where used for show windows and interior displays. The floodlight lamps are used also for underwater units.

FLOODLIGHT LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Burning Position | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovr. Lgth. |
|----------------------------|-------|-------------------|------|-------|-------------------------|----------------|-------|----------|--------------------|--------|-------------------|-----------------|
| 2 50G/FL | 250 | G-30 | Med. | 120 | Base Down To Horizontal | 60 | C | C-5 | 800 | 3850 | 3 | 5 1/8 |
| 4 00G/FL | 400 | G-30 | Med. | 120 | | 60 | C | C-5 | 800 | 6700 | 3 | 5 1/8 |
| 5 00G/FL | 500 | G-40 | Mog. | 120 | | 24 | C | C-5 | 800 | 8800 | 4 1/4 | 7 1/16 |
| 1 M/G40FL | 1000 | G-40 ^③ | Mog. | 120 | | 24 | C | C-5 | 800 | 19000 | 5 1/4 | 8 |
| 1 500G48/6 | 1500 | G-48 | Mog. | 120 | | 6 | C | C-5 | 800 | 31000 | 5 1/4 | 8 5/8 |

SPOTLIGHT LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Burning Position | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovr. Lgth. |
|----------------------------|-------|-------------------|-----------|-------|-------------------------|----------------|-------|----------|--------------------|--------|-------------------|-----------------|
| 500T12/8 | 500 | T-12 | Med. Pf. | 120 | Base Up | 24 | C | C-13 | 800 | ... | 3 1/2 | 6 1/8 |
| 500T14/7 | 500 | T-14 | Med. Bip. | 120 | Base Up | 24 | C | C-13 | 800 | ... | 4 | 6 3/8 |
| 500T20/45 | 500 | T-20 | Med. | 120 | Base Down To Horizontal | 24 | C | C-13 | 500 | ... | 3 | 5 1/2 |
| 500T20/64 | 500 | T-20 | Med. Pf. | 120 | | 24 | C | C-13 | 500 | ... | 2 3/16 | 5 3/4 |
| 400G/SP | 400 | G-30 | Med. | 120 | | 60 | C | C-5 | 200 | 7800 | 3 | 5 1/8 |
| 500G/SP | 500 | G-40 | Mog. | 120 | | 24 | C | C-5 | 200 | 10100 | 4 1/4 | 7 1/16 |
| 1M/G40SP4 1/4 | 1000 | G-40 ^③ | Mog. | 120 | | 24 | C | C-5 | 200 | 22500 | 4 1/4 | 7 1/16 |
| 1M/G40PSP | 1000 | G-40 ^③ | Mog. Pf. | 120 | ① | 24 | C | C-5 | 200 | 22500 | 3 1/8 | 8 7/16 |

① Not recommended for burning between horizontal and base up. ② Spotlight Light IF hard glass button. ③ Heat resistant glass.

G-E SHOWCASE LAMPS



Tubular bulb lamps are for use in showcases, in displays of shallow depth, and in small trough type reflectors.

The reflector-type lamp has an inside reflectorized surface covering one side of the bulb. The conventional screw base and a spring contact on the base allow desired positioning.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Max. Ovl. Lgth. |
|----------------------------|-------|---------|--------|-------|--------------------|----------------|-------|----------|--------------------|--------|-----------------|
| 25T6 1/2 | 25 | T-6 1/2 | Inter. | 120 | Clear | 60 | B | C-8 | 1000 | 240 | 5 1/2 |
| 25T6 1/2/IF | 25 | T-6 1/2 | Inter. | 120 | I. F. Showcase | 60 | B | C-8 | 1000 | 240 | 5 1/2 |
| 40T8 | 40 | T-8 | Med. | 120 | Clear | 24 | B | C-23 | 1000 | 410 | 11 7/8 |
| 40T8/IF | 40 | T-8 | Med. | 120 | I. F. Showcase | 24 | B | C-23 | 1000 | 405 | 11 7/8 |
| 25T10 | 25 | T-10 | Med. | 120 | Clear | 60 | B | C-8 | 1000 | 260 | 5 5/8 |
| 25T10/IF | 25 | T-10 | Med. | 120 | I. F. Showcase | 60 | B | C-8 | 1000 | 255 | 5 5/8 |
| 25T10/RFL | 25 | T-10 | Med. | 120 | Refl. Showcase | 60 | C | CC-8 | 1000 | 215 | 5 5/8 |
| 40T10 | 40 | T-10 | Med. | 120 | Clear | 60 | B | C-8 | 1000 | 430 | 5 5/8 |
| 40T10/IF | 40 | T-10 | Med. | 120 | Inside Frosted | 60 | B | C-8 | 1000 | 425 | 5 5/8 |
| 40T10/RFL | 40 | T-10 | Med. | 120 | Reflector Showcase | 60 | C | CC-8 | 1000 | 430 | 5 5/8 |
| 60T10/64 | 60 | T-10 | Med. | 120 | Showcase | 60 | C | C-8 | 1000 | 710 | 5 5/8 |
| 75T10/45 | 75 | T-10 | Med. | 120 | Showcase | 24 | B | C-23 | 1000 | 800 | 11 7/8 |

G-E PROJECTOR LAMPS



75 PAR/FL



150PAR/3FL



200PAR/3FL



300PAR56/WFL



500PAR64/WFL

General Electric projector and reflector lamps are self-contained spotlighting and floodlighting units. They are widely used in commercial, industrial, and home applications. Principal advantages are compactness, convenience, and elimination of reflector deterioration due to dirt.

PAR-38 projector lamps may be used outdoors in exposed locations; other projector lamps require shielding from moisture. External devices such as color roundels, louvers, and shields can be clipped directly to the PAR-38 bulbs. Side-prong lamps are designed to be supported by the bulb rim or metal shell of base and used with a heat resistant flexible connector.

Heat-resistant glass although more expensive, allows higher wattage in the same bulb size and will withstand greater thermal shocks such as from moisture on the hot bulb.

500-watt PAR lamps — Narrow Spot, Medium Flood, and Wide Flood, produce a controlled beam essentially rectangular in pattern. The lamps are made of heat-resistant glass but must be protected from moisture in both interior and exterior applications. They are designed for spot lighting and flood lighting areas where a higher intensity of light is required than is provided by other PAR Lamps.

| Ordering Abbreviation | Watts and Bulb | Base Type | Beam Type | Std. Pkg. | Approx. Beam Spread Degrees ② | Approx. Initial Beam Lumens | Approx. Total Lumens | Approx. Initial CP Av. in 10° Cone ③ | Max. Overall Length |
|-----------------------|--------------------|---------------------|-------------|-----------|-------------------------------|-----------------------------|----------------------|--------------------------------------|--------------------------------|
| 75PAR/SP① | 75-Watt PAR 38 | Med. Skt. | Spot | 12 | — | — | 770 | — | 5 ⁵ / ₁₆ |
| 75PAR/FL① | | Med. Skt. | Flood | 12 | — | — | 770 | — | 5 ⁵ / ₁₆ |
| 150PAR/SP① | 150-Watt PAR 38 | Med. Skt. | Spot | 12 | 30° x 30° | 1,100 | 1,730 | 10,500 | 5 ⁵ / ₁₆ |
| 150PAR/3SP① | | Med. Side-prong | Spot | 12 | 30° x 30° | 1,100 | 1,730 | 10,500 | 4 ⁵ / ₁₆ |
| 150PAR/FL① | | Med. Skt. | Flood | 12 | 60° x 60° | 1,350 | 1,730 | 3,400 | 5 ⁵ / ₁₆ |
| 150PAR/3FL① | | Med. Side-prong | Flood | 12 | 60° x 60° | 1,350 | 1,730 | 3,400 | 4 ⁵ / ₁₆ |
| 200PAR46/3NSP | 200-Watt PAR 46 | Med. Side-prong | Narrow Spot | 8 | 17° x 23° | 1,200 | 2,350 | 30,000 | 4 |
| 200PAR46/3MFL | | Med. Side-prong | Med. Flood | 8 | 20° x 40° | 1,300 | 2,350 | 11,000 | 4 |
| 300PAR56/NSP | 300-Watt PAR 56 | Mog. End prong | Narrow Spot | 8 | 15° x 20° | 1,800 | 3,650 | 70,000 | 5 |
| 300PAR56/MFL | | Mog. End prong | Med. Flood | 8 | 20° x 35° | 2,000 | 3,650 | 22,000 | 5 |
| 300PAR56/WFL | | Mog. End prong | Wide Flood | 8 | 30° x 60° | 2,100 | 3,650 | 10,000 | 5 |
| 500PAR64/NSP | 500-Watt PAR 64 | Ext. Mog. End prong | Narrow Spot | 8 | 13° x 20° | 3,000 | 6,000 | 110,000 | 6 |
| 500PAR64/MFL | | Ext. Mog. End prong | Med. Flood | 8 | 20° x 35° | 3,400 | 6,000 | 35,000 | 6 |
| 500PAR64/WFL | | Ext. Mog. End prong | Wide Flood | 8 | 35° x 65° | 3,500 | 6,000 | 12,000 | 6 |

① The rated average life of Projector (PAR) lamps is 2,000 hours. The average lumens and candlepower is 85% of initial.

② Heat Resistant glass.

③ To 10% of maximum candlepower.

④ Candlepower average in the central 5° cone for SP and NSP, in 10° cone for MFL and WFL.

G-E PROJECTOR COLOR LAMPS



150PAR/B



150PAR/BW



150PAR/G



150PAR/PK



150PAR/R



150PAR/Y

These new General Electric Projector Color Lamps provide a simple convenient way to obtain a variety of colored lighting effects. There are four basic colors and two tints similar to G. E. Reflector Color Lamps. Colors may be mixed to produce many other colors and tints.

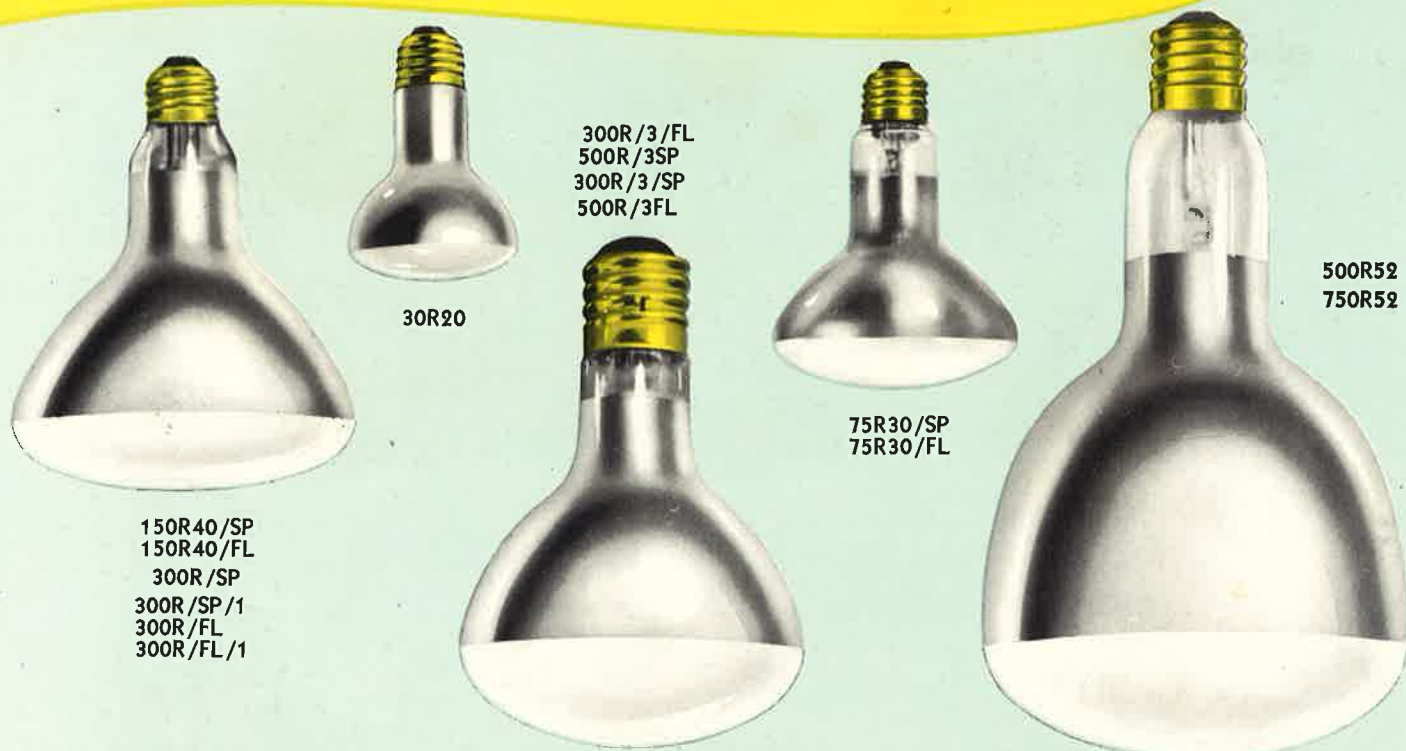
Projector Lamps have more accurate beam control than Reflector Lamps which makes it possible to project decorative color over a wide area. The beam spread is slightly broader than that of standard PAR-38 Flood Lamps. The colors are obtained from translucent ceramic enamel permanently fused

to the bulb face. They resist fading, peeling and cracking.

Projector Color Lamp Bulbs are precision molded from weather-resistant glass. Where lamps are used outdoors and aimed below horizontal they need not be shielded. When aimed above horizontal, water breakage is best avoided by mounting lamps in sheltered locations or by use of covering glass. These lamps are used extensively for lighting Motels, Restaurants, Drive-ins, Carnivals and Fairs, Gardens, Building Fronts and Entrances, Churches and many other places for decorative flood lighting.

| Lamp Ordering Abbreviation | Description | Watts | Bulb | Base | Std. Pkg. Qty. | Class | Filament | Maximum Overall Inches Length | Approx. Hours Life |
|----------------------------|-------------|-------|--------|-----------|----------------|-------|----------|--------------------------------|--------------------|
| 150PAR/B | Blue | 150 | PAR-38 | Med. Skt. | 12 | C | CC-6 | 5 ⁵ / ₁₆ | 2000 |
| 150PAR/BW | Blue White | 150 | PAR-38 | Med. Skt. | 12 | C | CC-6 | 5 ⁵ / ₁₆ | 2000 |
| 150PAR/G | Green | 150 | PAR-38 | Med. Skt. | 12 | C | CC-6 | 5 ⁵ / ₁₆ | 2000 |
| 150PAR/PK | Pink | 150 | PAR-38 | Med. Skt. | 12 | C | CC-6 | 5 ⁵ / ₁₆ | 2000 |
| 150PAR/R | Red | 150 | PAR-38 | Med. Skt. | 12 | C | CC-6 | 5 ⁵ / ₁₆ | 2000 |
| 150PAR/Y | Yellow | 150 | PAR-38 | Med. Skt. | 12 | C | CC-6 | 5 ⁵ / ₁₆ | 2000 |

G-E REFLECTOR LAMPS



G-E Reflector lamps all have built-in mirror-lite reflecting surfaces. The 30-watt, 75-watt, 150-watt and 300-watt lamps, made of ordinary glass, must be protected from weather. The 300-watt and the 500-watt heat resistant hard glass lamps may be used outdoors without protection. Performance is better, however, when they are shielded from moisture. Spots and Floods are similar in construction but the Floods have more deeply frosted bulbs to provide a wider beam spread.

The R-52 lamps, in 500- and 750-watts, are especially designed for high-bay lighting in industrial plants. The contour of the silvered portion of the bulb, and the filament position, are designed for favorable light distribution and shielding. Substantially even illumination results

when spacing between units does not exceed mounting height. These lamps are widely used in plants where there is rapid collection of dirt on lighting equipment. They are of special advantage where lighting units can be reached for maintenance only at high cost, or where production may be interrupted by tying up a crane. Typical applications are in foundries, railroad car shops, steel mills, and welding shops. Almost no dirt collects on the bottom face of the R-52, where the light is emitted. The bulb should be protected from moisture.

Lamp No's. 150R/SP, 150R/FL, 300R/SP, 300R/FL, should not be used in equipment when the base temperature will exceed 500°F.

G. E. REFLECTOR LAMPS

| Ordering Abbreviation | Watts and Bulb | Base Type | Beam Type | Std. Pkg. | Approx. Beam Spread Degrees ② | Approx. Initial Beam Lumens ② | Approx. Total Lumens | Approx. Initial CP Av. in 10° Cone | Max. Overall Length |
|-----------------------|----------------|-----------|-----------|-----------|-------------------------------|-------------------------------|----------------------|------------------------------------|---------------------|
| 30R20 | 30-Watt R-20 | Medium | Flood | 60 | 85° | 144 | 200 | 290 | 3 15/16 |
| 75R30/SP | 75-Watt R-30 | Medium | Spot | 60 | 50° | 400 | 770 | 1,800 | 5 3/8 |
| 75R30/FL | | Medium | Flood | 60 | 130° | 610 | 770 | 430 | 5 3/8 |
| 150R/SP | 150-Watt R-40 | Medium | Spot | 24 | 40° | 810 | 1,780 | 6,000 | 6 1/2 |
| 150R/FL | | Medium | Flood | 24 | 110° | 1,500 | 1,780 | 1,250 | 6 1/2 |
| 300R/SP | 300-Watt R-40 | Medium | Spot | 24 | 35° | 1,800 | 3,700 | 13,500 | 6 1/2 |
| 300R/SP/1① | | Medium | Spot | 24 | 35° | 1,600 | 3,700 | 13,500 | 6 7/8 |
| 300R/3SP① | | Mogul | Spot | 24 | 35° | ..... | 3,700 | ..... | 7 1/4 |
| 300R/FL | | Medium | Flood | 24 | 115° | 2,800 | 3,700 | 2,700 | 6 1/2 |
| 300R/FL/1① | | Medium | Flood | 24 | 115° | 2,700 | 3,700 | 2,700 | 6 7/8 |
| 300R/3FL① | | Mogul | Flood | 24 | 115° | 2,700 | 3,700 | 2,700 | 7 1/4 |
| 500R/3SP① | 500-Watt R-40 | Mogul | Spot | 24 | 35° | 3,100 | 6,400 | 22,000 | 7 1/4 |
| 500R/3FL① | | Mogul | Flood | 24 | 115° | 5,400 | 6,400 | 5,200 | 7 1/4 |
| 500R52 | 500R-52 | Mogul | Refl. Fl. | 6 | — | — | 7,550 | — | 11 3/4 |
| 750R52 | 750R-52 | Mogul | Refl. Fl. | 6 | — | — | 12,700 | — | 11 3/4 |
| 1M/RB52 | 1000-RB-52 | Mogul | Refl. Fl. | 6 | — | — | 16,300 | — | 12 3/4 |

The rated average life of Reflector (R) lamps is 2,000 hours. The average lumens and candlepower are 85% of initial.

① Heat Resistant glass.

② To 10% of maximum candlepower.

G-E REFLECTOR COLOR LAMPS



150R/R



150R/PK



150R/G



150R/Y



150R/BW



150R/B

G-E Reflector Color lamps provide dramatic display and lighting effects, and are ideal for many kinds of decorative lighting both indoors and outdoors. In show windows the four basic colors, red, green, yellow and blue are ideal for lighting backgrounds to accentuate merchandise on display.

Pink and blue-white provide general illumination as well as color effects. Pink is used for warmth and blue-white for cool highlights.

Intermediate hues are obtained by mixing appropriate pairs of the basic colors in various

combinations. For instance red and blue produce purple. Tints are created by adding white light to the four basic colors. White light is created by combining complementary colors.

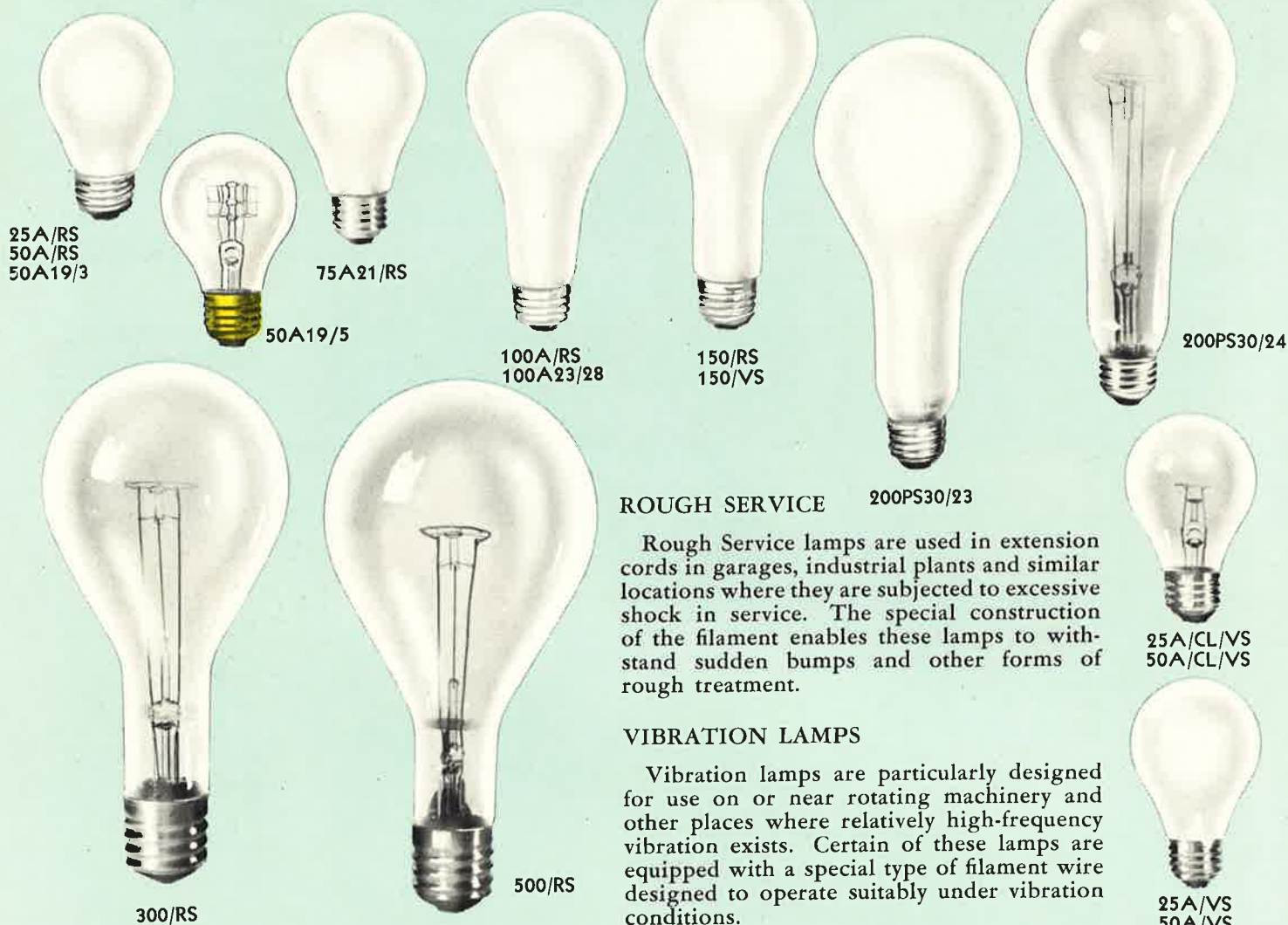
Reflector color lamps fit in regular sockets and holders. The silvered reflector is built right into the lamps, — cannot get dirty or tarnish. Color is fused onto the glass so it cannot fade, chip or peel.

When used outdoors these lamps should be sheltered or housed in suitable fixtures to protect them from rain or snow.

REFLECTOR COLOR LAMPS

| Lamp Ordering Abbreviation | Description | Watts | Bulb | Base | Volts | Std. Pkg. Qty. | Class | Filament | Max. Over-all Length Inches | Approx. Hours Life |
|----------------------------|-------------|-------|------|--------|---------|----------------|-------|----------|-----------------------------|--------------------|
| 150R/R | Red | 150 | R-40 | Medium | 115-125 | 12 | C | C-11 | 6 $\frac{7}{8}$ | 2000 |
| 150R/PK | Pink | 150 | R-40 | Medium | 115-125 | 12 | C | C-11 | 6 $\frac{7}{8}$ | 2000 |
| 150R/G | Green | 150 | R-40 | Medium | 115-125 | 12 | C | C-11 | 6 $\frac{7}{8}$ | 2000 |
| 150R/Y | Yellow | 150 | R-40 | Medium | 115-125 | 12 | C | C-11 | 6 $\frac{7}{8}$ | 2000 |
| 150R/BW | Blue White | 150 | R-40 | Medium | 115-125 | 12 | C | C-11 | 6 $\frac{7}{8}$ | 2000 |
| 150R/B | Blue | 150 | R-40 | Medium | 115-125 | 12 | C | C-11 | 6 $\frac{7}{8}$ | 2000 |

G-E ROUGH SERVICE LAMPS AND VIBRATION LAMPS



ROUGH SERVICE 200PS30/23

Rough Service lamps are used in extension cords in garages, industrial plants and similar locations where they are subjected to excessive shock in service. The special construction of the filament enables these lamps to withstand sudden bumps and other forms of rough treatment.

VIBRATION LAMPS

Vibration lamps are particularly designed for use on or near rotating machinery and other places where relatively high-frequency vibration exists. Certain of these lamps are equipped with a special type of filament wire designed to operate suitably under vibration conditions.

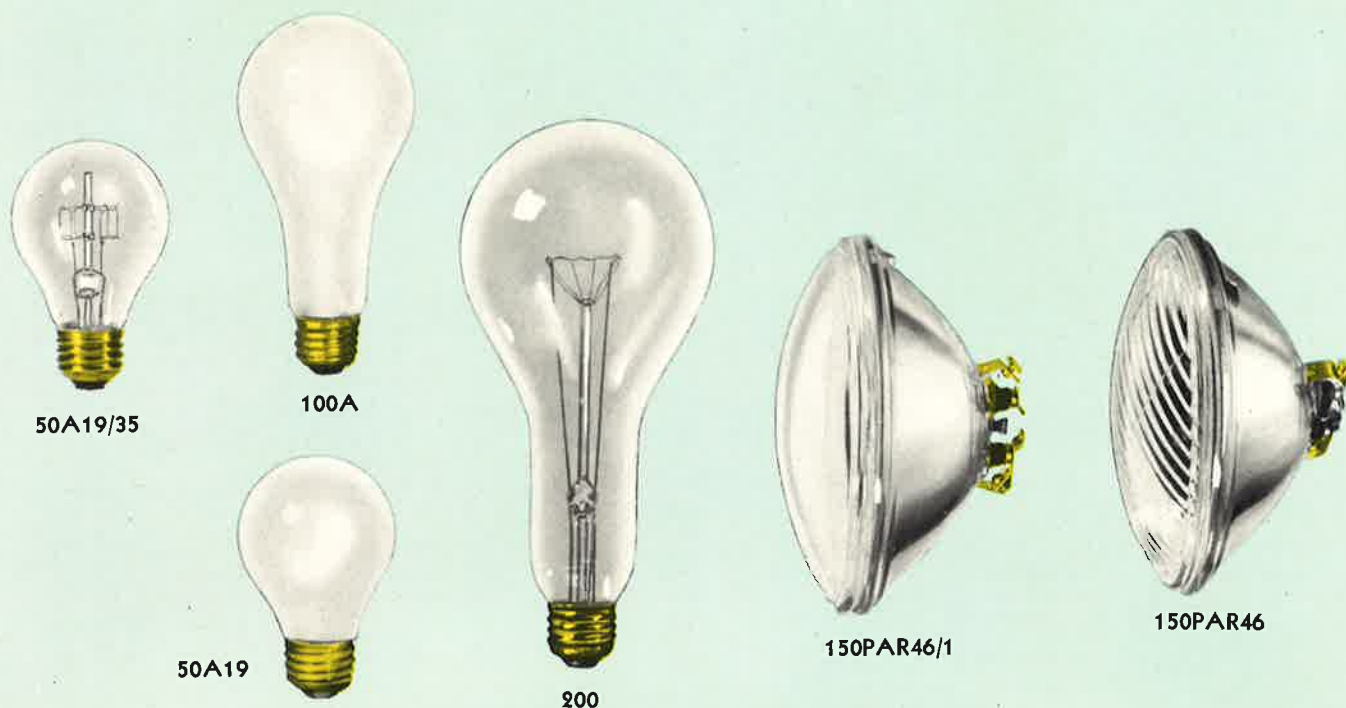
ROUGH SERVICE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovrll. Lgth. |
|----------------------------|-------|-------|------|-------|-----------------------------|----------------|-------|----------|--------------------|--------|-------------------|-------------------|
| 25A/RS | 25 | A-19 | Med. | 120 | Inside Frosted | 120 | B | C-17 | 1000 | 225 | 2½ | 3½ |
| 50A/RS | 50 | A-19 | Med. | 120 | Inside Frosted | 120 | B | C-22 | 1000 | 460 | 2½ | 3½ |
| 50A19/5 | 50 | A-19 | Med. | 120 | Clear | 120 | B | C-22 | 1000 | 465 | 2½ | 3½ |
| 50A19/3 | 50 | A-19 | Med. | 120 | I. F. Out. Ctd. Cl. Lacquer | 120 | B | C-22 | 1000 | 460 | 2½ | 3½ |
| 75A21/RS | 75 | A-21 | Med. | 120 | Inside Frosted | 120 | B | C-22 | 1000 | 710 | 2½ | 4½ |
| 100A/RS | 100 | A-21 | Med. | 120 | Inside Frosted | 120 | C | C-17 | 1000 | 1230 | 3½ | 5½ |
| 150/RS | 150 | PS-25 | Med. | 120 | Inside Frosted | 60 | C | C-17 | 1000 | 2100 | 5¼ | 6½ |
| 200PS30/23 | 200 | PS-30 | Med. | 120 | Inside Frosted | 60 | C | C-9 | 1000 | 3380 | 6 | 8½ |
| 200PS30/24 | 200 | PS-30 | Med. | 120 | Clear | 60 | C | C-9 | 1000 | 3380 | 6 | 8½ |
| 300/RS | 300 | PS-35 | Mog. | 120 | Clear | 24 | C | C-9 | 1000 | 5250 | 7 | 9¾ |
| 500/RS | 500 | PS-40 | Mog. | 120 | Clear | 24 | C | C-9 | 1000 | 9400 | 7 | 9¾ |

VIBRATION LAMPS

| | | | | | | | | | | | | |
|-----------|-----|-------|------|-----|----------------|-----|---|-----|------|------|----|----|
| 25A/VS | 25 | A-19 | Med. | 120 | Inside Frosted | 120 | B | C-9 | 1000 | 250 | 2½ | 3½ |
| 25A/CL/VS | 25 | A-19 | Med. | 120 | Clear | 120 | B | C-9 | 1000 | 255 | 2½ | 3½ |
| 50A/VS | 50 | A-19 | Med. | 120 | Inside Frosted | 120 | B | C-9 | 1000 | 550 | 2½ | 3½ |
| 50A/CL/VS | 50 | A-19 | Med. | 120 | Clear | 120 | B | C-9 | 1000 | 555 | 2½ | 3½ |
| 100A23/28 | 100 | A-23 | Med. | 120 | Inside Frosted | 120 | C | C-9 | 1000 | 1350 | 4¾ | 6½ |
| 150/VS | 150 | PS-25 | Med. | 120 | Inside Frosted | 60 | C | C-9 | 1000 | 2250 | 5¼ | 6½ |

G-E MINE LAMPS



Mine lamps, ranging from 50 to 200 watts, are available in either 275 or 300 volts for use in haulage-ways, pits, shop lighting and other general lighting areas.

The PAR lamps are designed for mine locomotives, loaders, shuttle cars, and other equipment. They will give long service under severe mine conditions because of their resilient filament mounts.

The 150PAR46/1, 32-volt lamp is especially designed for locomotive service. It has rugged filament construction and its concentrated beam closely fits haulage ways.

Proper resistors must be used in series with 32-volt and 115-volt lamps. Resistors to operate 150-watt lamps from nominal 275-volt supply should be selected to provide 4.69 amperes through 32-volt lamps and 1.30 amperes through 115-volt lamps.

MINE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Fila. | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovr. Lgth. |
|----------------------------|-------|--------|-----------|-------|------------------------|----------------|-------|-------|--------------------|--------|-------------------|-----------------|
| 50A19 | 50 | A-19 | Med. | 275 | Inside Frosted | 120 | B | C-17 | 1000 | 460 | 21½ | 31½ |
| 50A19/35 | 50 | A-19 | Med. | 275 | Clear | 120 | B | C-17 | 1000 | 465 | 21½ | 31½ |
| 50A19 | 50 | A-19 | Med. | 300 | Inside Frosted | 120 | B | C-17 | 1000 | 460 | 21½ | 31½ |
| 50A19/35 | 50 | A-19 | Med. | 300 | Clear | 120 | B | C-17 | 1000 | 465 | 21½ | 31½ |
| 100A | 100 | A-23 | Med. | 275 | Inside Frosted | 120 | C | C-7A | 1000 | 1150 | 37½ | 51½ |
| 100A | 100 | A-23 | Med. | 300 | Inside Frosted | 120 | C | C-7A | 1000 | 1150 | 37½ | 51½ |
| 200 | 200 | PS-30 | Med. | 275 | Clear | 60 | C | C-9 | 1000 | 2650 | 6 | 81½ |
| 200 | 200 | PS-30 | Med. | 300 | Clear | 60 | C | C-9 | 1000 | 2650 | 6 | 81½ |
| 150PAR46/1 | 150 | PAR-46 | S.C.Term. | 32 | Locomotive Headlight | 8 | C | CC-8 | 800 | ..... | ..... | 4 |
| 150PAR46 | 150 | PAR-46 | S.C.Term. | 115 | Locomotive Headlight ① | 8 | C | C-13 | 1000 | ..... | ..... | 4 |

① Burning position, plane through lamp axis and base terminals horizontal.

G-E TRAIN AND LOCOMOTIVE LAMPS



TRAIN LIGHTING

Train lighting lamps are specially designed to withstand the intense vibrations and shocks encountered in this service. In general they are available for operation on either 30-, 34- or 60-volt direct current circuits. To insure satisfactory life, voltage regulating devices must be kept adjusted to the proper voltage so that the voltage at the lamp socket corresponds with that shown on the lamp marking.

LOCOMOTIVE HEADLIGHTING

The 200 PAR lamp is of the sealed beam type of the all-glass construction incorporating the filament, reflector and coverglass in a single unit. It is customary to operate one lamp for switching locomotives and two for road locomotives. When applied to Diesel-electric locomotives, fixed resistors are installed in the circuit to reduce the line voltage to 30 volts.

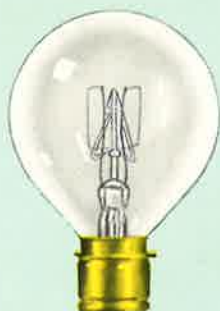
Where separate reflectors and lamps are used, the 100A21/3, 32-volt lamp is recommended

TRAIN LIGHTING LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovl. Lgth. |
|----------------------------|-------|---------|------------|-------|----------------|----------------|-------|----------|--------------------|--------|-------------------|-----------------|
| 6S6 | 6 | S-6 | Cand. | 30 | Train | 240 | B | C-2V | 1500 | 50 | ... | 1 7/8 |
| 15A | 15 | A-17 | Med. | 30 | Inside Frosted | 120 | C | C-9 | 1000 | 179 | 2 3/8 | 3 5/8 |
| 15A | 15 | A-17 | Med. | 60 | Inside Frosted | 120 | B | C-9 | 1000 | 150 | 2 3/8 | 3 5/8 |
| 15A | 15 | A-17 | Med. | 75 | Inside Frosted | 120 | B | C-9 | 1000 | 145 | 2 3/8 | 3 5/8 |
| 25A | 25 | A-19 | Med. | 30 | Inside Frosted | 120 | C | C-9 | 1000 | 350 | 2 1/2 | 3 1 1/8 |
| 25A | 25 | A-19 | Med. | 34 | Inside Frosted | 120 | C | C-9 | 1000 | 400 | 2 1/2 | 3 1 1/8 |
| 25A | 25 | A-19 | Med. | 60 | Inside Frosted | 120 | C | C-9 | 1000 | 285 | 2 1/2 | 3 1 1/8 |
| 25A | 25 | A-19 | Med. | 75 | Inside Frosted | 120 | B | C-9 | 1000 | 240 | 2 1/2 | 3 1 1/8 |
| 25T8 1/2/IF | 25 | T-8 1/2 | Med. | 30 | Inside Frosted | 60 | C | C-8 | 1000 | 350 | ... | 5 3/8 |
| 30S11DC | 30 | S-11 | D. C. Bay. | 64 | Train Marker | 120 | C | C-7A | 500 | 365 | 1 1/4 | 2 3/8 |
| 40A | 40 | A-19 | Med. | 30 | Inside Frosted | 120 | C | C-9 | 1000 | 600 | 2 7/8 | 4 1/4 |
| 40A | 40 | A-19 | Med. | 60 | Inside Frosted | 120 | C | C-9 | 1000 | 525 | 2 7/8 | 4 1/4 |
| 50A21 | 50 | A-21 | Med. | 30 | Inside Frosted | 120 | C | C-9 | 1000 | 810 | 3 3/8 | 4 1 1/8 |
| 50A21 | 50 | A-21 | Med. | 34 | Inside Frosted | 120 | C | C-9 | 1000 | 920 | 3 3/8 | 4 1 1/8 |
| 50A21 | 50 | A-21 | Med. | 60 | Inside Frosted | 120 | C | C-9 | 1000 | 720 | 3 3/8 | 4 1 1/8 |
| 50A21 | 50 | A-21 | Med. | 75 | Inside Frosted | 120 | C | C-9 | 1000 | 725 | 3 3/8 | 4 1 1/8 |
| 100A | 100 | A-23 | Med. | 30 | Inside Frosted | 120 | C | C-9 | 1000 | 1850 | 4 3/8 | 6 1 1/8 |
| 100A | 100 | A-23 | Med. | 34 | Inside Frosted | 120 | C | C-9 | 1000 | 2100 | 4 3/8 | 6 1 1/8 |
| 100A | 100 | A-23 | Med. | 60 | Inside Frosted | 120 | C | C-9 | 1000 | 1650 | 4 3/8 | 6 1 1/8 |



250P25



250P25/22



200PAR



300P25P

for switching service. In similar equipment used on road locomotives the 250-watt P-25 lamp is recommended.

LOCOMOTIVE CAB LIGHTING

The 34-volt lamps are intended for use in steam locomotive cabs. The 60-volt lamps are for Diesel-electric locomotives equipped with voltage regulators, whereas the 75-volt lamps

are for use in Diesel-electric locomotives not thus equipped.

The 6S6 lamps are used either as indicators or for instrument lighting. The 25- and 50-watt lamps are for use in the engine compartment as well as for cab lighting.

The 30-watt S-11 lamp is mainly a marker or classification lamp, operated in series with a resistance on Diesel-electric locomotives.

DIESEL ELECTRIC LOCOMOTIVE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovrl. Lgth. |
|----------------------------|-------|------|------------|-------|--------------------------------|----------------|-------|----------|--------------------|--------|-------------------|------------------|
| 6S6/5SC | 6 | S-6 | S. C. Bay. | 60 | Train | 120 | B | C-1 | 1500 | 45 | 1 $\frac{1}{8}$ | 1 $\frac{1}{8}$ |
| 15S11/3DC | 15 | S-11 | D. C. Bay. | 75 | Train | 120 | B | C-1 | 1000 | 150 | 1 $\frac{1}{4}$ | 2 $\frac{3}{8}$ |
| 15S14/IF | 15 | S-14 | Med. | 34 | Loco. Cab | 120 | B | C-9 | 1000 | 144 | 2 $\frac{1}{2}$ | 3 $\frac{1}{2}$ |
| 25A17/RS | 25 | A-17 | Med. | 75 | I. F. Train | 120 | B | C-9 | 1000 | 250 | 2 $\frac{3}{8}$ | 3 $\frac{5}{16}$ |
| 30S11/DC | 30 | S-11 | D. C. Bay. | 64 | Rough Serv. | 120 | C | C-7A | 500 | 365 | 1 $\frac{1}{4}$ | 2 $\frac{3}{8}$ |
| 50A19/RS | 50 | A-19 | Med. | 75 | Marker I. F. Train Rough Serv. | 120 | B | C-9 | 1000 | 545 | 2 $\frac{1}{2}$ | 3 $\frac{1}{16}$ |

DIESEL ELECTRIC LOCOMOTIVE HEADLIGHTING LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Burning Position | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovrl. Lgth. |
|----------------------------|-------|--------|-------------|-------|-----------------------|----------------|-------|----------|--------------------|--------|-------------------|------------------|
| 100A21/3 | 100 | A-21 | Med. | 32 | Base Down to Horiz. ① | 120 | C | C-5 | 500 | 1550 | 3 | 4 $\frac{1}{16}$ |
| 200PAR | 200 | PAR-56 | Screw Term. | 30 | Horizontal | 8 | C | CC-8 | 500 | ..... | ..... | 4 $\frac{1}{2}$ |
| 250P25 | 250 | P-25 | Med. | 32 | Base Down to Horiz. ① | 60 | C | C-5A | 500 | 4500 | 3 | 4 $\frac{3}{4}$ |
| 250P25/22 | 250 | P-25 | Med. Pf. | 32 | Base Down to Horiz. ① | 60 | C | C-5A | 500 | 4500 | 2 $\frac{3}{16}$ | 5 |

STEAM LOCOMOTIVE LAMPS (Cab and Headlighting)

| | | | | | | | | | | | | |
|-----------|-----|----------|-------------|----|-----------------------|-----|---|------|------|-------|------------------|------------------|
| 15S14/IF | 15 | S-14 | Med. | 34 | Any | 120 | B | C-9 | 1000 | 144 | 2 $\frac{1}{2}$ | 3 $\frac{1}{2}$ |
| 100A21/3 | 100 | A-21 | Med. | 32 | Base Down to Horiz. ① | 120 | C | C-5 | 500 | 1550 | 3 | 4 $\frac{1}{16}$ |
| 200PAR | 200 | PAR-56 ② | Screw Term. | 30 | Horizontal | 8 | C | CC-8 | 500 | ..... | ..... | 4 $\frac{1}{2}$ |
| 250P25 | 250 | P-25 | Med. | 32 | Base Down to Horiz. ① | 60 | C | C-5A | 500 | 4500 | 3 | 4 $\frac{3}{4}$ |
| 250P25/22 | 250 | P-25 | Med. Pf. | 32 | Base Down to Horiz. ① | 60 | C | C-5A | 500 | 4500 | 2 $\frac{3}{16}$ | 5 |

① Unsatisfactory lamp operation is likely to occur in burning positions between horizontal and base up, particularly between 45° from base up and base up.

② Heat resistant Glass.

G-E LAMPS FOR AIRPORTS



40A21P
75A21P
100A21P



325/66/A21
1020/66/A21



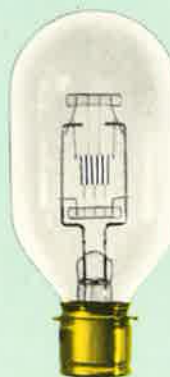
6.6A/T10/1P
6.6A/T10P



6.6A/T14P



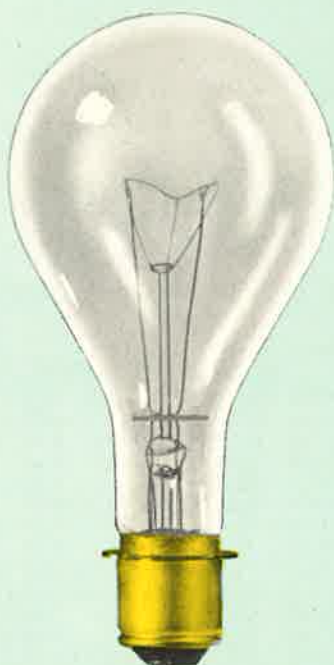
300PAR56
6.6A/PAR56/2
20A/PAR56



500T20/25
6.6A/T20/2P



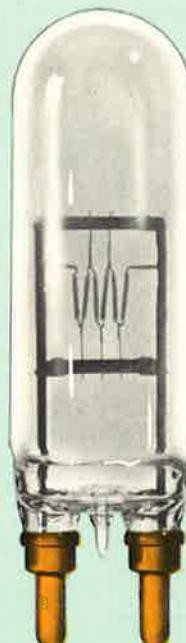
20A/T20/5



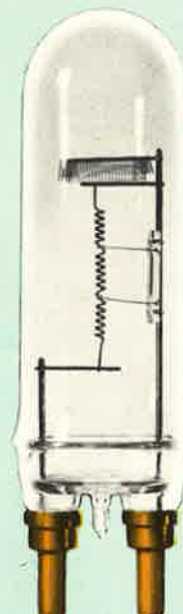
500PS40/45
620PS40/P



500T20/13



1M/T20BP



1200T20

G-E airport lamps provide vital lighting for safety at the nation's landing fields. Beacons help pilots identify individual airports quickly and accurately. Approach-lighting systems guide aircraft safely from the airways to the runways in adverse weather. On the ground, lamps outline the runways and taxiways for safe travel; also, obstruction markers identify possible hazards.

Most airport lighting equipment uses optical systems for effective control of light. To make best use of the optics, airport lamps are often of the precision-made PAR construction, or they employ bipost or prefocus bases. Concentrated filaments are accurately located in relation to the base or PAR-type reflector.

Approach, runway, and taxiway lighting systems are served by three types of power systems. Smaller airports usually use multiple distribution and 120-volt lamps. Many major commercial fields light approaches and runways with constant-current distribution, 20-ampere approach lamps and 6.6-ampere runway lamps. Military fields usually use 6.6-ampere lamps.

Code Beacon Lamps are frequently used as ob-

struction markers on tall structures. The 500PS-40/45 rated at 1000 hours is generally used where lamp replacement is easy. The 3000-hour 620PS-40P allows the economy of group replacement especially where maintenance is difficult.

Present practice in Airport Approach Lighting uses "line-shaped" fixtures having between 5 and 10 PAR-56 sealed beam type of lamps mounted in a row. Whatever the length of fixture or pattern of fixture arrangement, the three PAR-56 lamps listed are the basic light sources.

Low intensity, semi-flush Airport-Runway Marker lights, about 2 inches high, use A-21 lamps. Medium intensity elevated lights, about 2 feet high, use T-10 lamps. Higher intensity elevated lights, on runways where instrument landings are made, use T-14 and T-20 lamps.

Constant improvement in G-E lamps helps flying safety to keep abreast of aircraft development. An example is the new 1200T20 beacon lamp; its CC-8 filament gives beacons a greater vertical beam spread; thus pilots of jet aircraft can identify their airfields from greater distances at higher altitudes.

G-E AIRPORT LAMPS

| Lamp Ordering Abbreviation | Watts or Amperes | Bulb | Base | Volts Amperes | Principle Uses | Filament | Approx. Hours Life | Initial Lumens | L.C.L. | M.O.L. |
|----------------------------|------------------|--------|----------------|---------------|---|----------|--------------------|----------------|------------------|-------------------|
| 40A21P | 40 | A-21 | Med. Pf. | 120 | Runway, Boundry, Obstruction | CC-2V | 2000 | 365 | 2 $\frac{3}{4}$ | 5 $\frac{5}{16}$ |
| 75A21P | 75 | A-21 | Med. Pf. | 120 | Runway, Threshold, Obstruction ^③ | CC-2V | 2000 | 875 | 2 $\frac{3}{4}$ | 5 $\frac{5}{16}$ |
| 100A21P | 100 | A-21 | Med. Pf. | 120 | Obstruction ^③ | CC-2V | 2000 | 1,170 | 2 $\frac{3}{4}$ | 5 $\frac{5}{16}$ |
| 325/66/A21 | 325L | A-21 | Med. Pf. | 6.6A | Runway-Taxiway | C-8 | 2000 | 320 | 2 $\frac{3}{4}$ | 5 $\frac{5}{16}$ |
| 1020/66/A21 | 1020L | A-21 | Med. Pf. | 6.6A | Runway-Obstruction | C-8 | 2000 | 1,000 | 2 $\frac{3}{4}$ | 5 $\frac{5}{16}$ |
| 300PAR56 | 300 | PAR-56 | Mog. End Prong | 25 | Approach ^① | C-13 | 100 | ..... | ..... | 5 |
| 6.6A/PAR56/2 | 200 | PAR-56 | Mog. End Prong | 6.6A | Approach ^① | C-13 | 500 | ..... | ..... | 5 |
| 20A/PAR56 | 300 | PAR-56 | Mog. End Prong | 20A | Approach ^① | C-6 | 100 | ..... | ..... | 5 |
| 500PS40/45 | 500 | PS-40 | Mog. Pf. | 120 | Code Beacon | C-9 | 1000 | 9,850 | 5 $\frac{1}{16}$ | 10 $\frac{1}{16}$ |
| 620PS40/P | 620 | PS-40 | Mog. Pf. | 120 | Code Beacon | C-7A | 3000 | 10,800 | 5 $\frac{1}{16}$ | 10 $\frac{1}{16}$ |
| 6.6A/T10/1P | 30 | T-10 | Med. Pf. | 6.6A | Runway-Taxiway ^② | C-2V | 1000 | 390 | 1 $\frac{1}{2}$ | 3 $\frac{1}{16}$ |
| 6.6A/T10P | 45 | T-10 | Med. Pf. | 6.6A | Runway-Taxiway ^② | C-2A | 1000 | 630 | 1 $\frac{1}{2}$ | 3 $\frac{1}{16}$ |
| 6.6A/T14P | 200 | T-14 | Med. Pf. | 6.6A | Runway-Threshold ^② | C-13 | 75 | 4,900 | 2 $\frac{3}{16}$ | 5 $\frac{3}{4}$ |
| 6.6A/T20/2P | 205 | T-20* | Med. Pf. | 6.6A | Runway-Threshold ^{④②} | C-13 | 500 | 4250(est) | 3 $\frac{3}{16}$ | 5 $\frac{3}{4}$ |
| 20A/T20/5 | 500 | T-20* | Med. Bip. | 20A | Runway, Threshold ^{④②} | C-13 | 500 | 11,300 | 2 $\frac{1}{2}$ | 6 $\frac{1}{2}$ |
| 500T20/25 | 500 | T-20* | Med. Pf. | 120 | Overrun ^② | C-13 | 50 | 13,000 | 2 $\frac{3}{16}$ | 5 $\frac{3}{4}$ |
| 500T20/13 | 500 | T-20* | Med. Bip. | 120 | Beacon ^② | C-13B | 500 | 9,250 | 3 | 7 $\frac{1}{2}$ |
| 1M/T20BP | 1000 | T-20* | Mog. Bip. | 120 | Beacon ^② | C-13 | 500 | 20,000 | 4 | 9 $\frac{1}{2}$ |
| 1200T20 | 1200 | T-20* | Mog. Bip. | 120 | Beacon ^{④②} | CC-8 | 750 | 27,500 | 4 | 9 $\frac{1}{2}$ |

* Indicates that the lamp has a special heat-resistant glass bulb.

① Burning position 45 degrees base down to horizontal.

② Burn Base down.

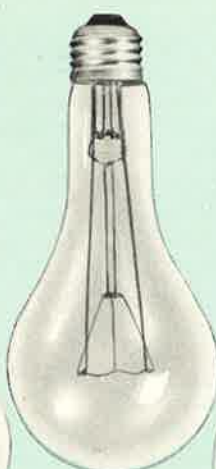
③ Burn base down to horizontal.

④ Collector Grid used in lamp.

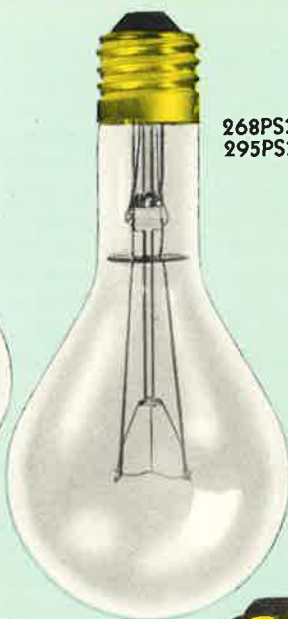
G-E STREET LIGHTING LAMPS



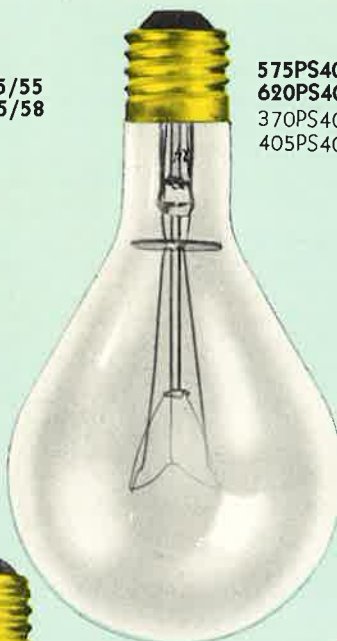
85A23/48
92A23/49



175PS25/63
189PS25/64



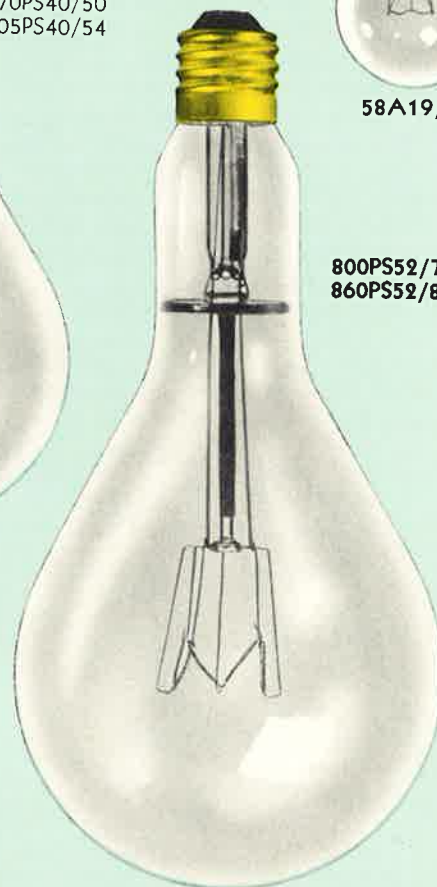
268PS35/55
295PS35/58



575PS40/51
620PS40/53
370PS40/50
405PS40/54



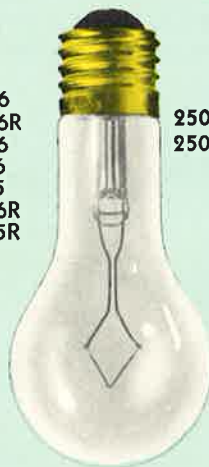
58A19/62



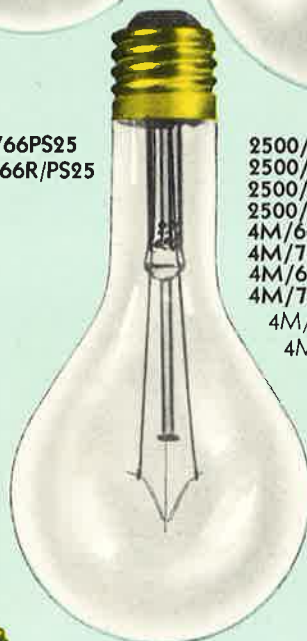
800PS52/79
860PS52/80



600/66
600/66R
320/66
1M/66
1M/75
1M/66R
1M/75R



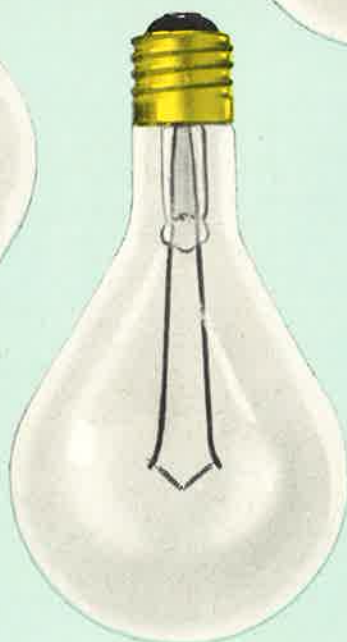
2500/66PS25
2500/66R/PS25



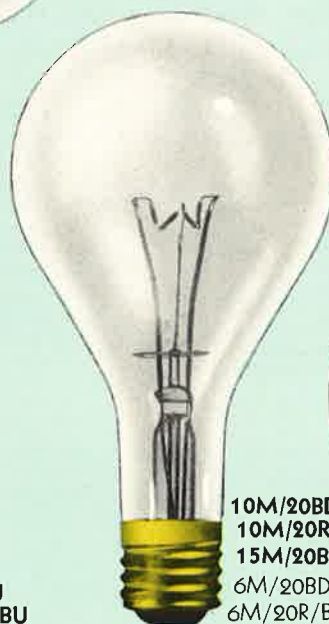
2500/66
2500/75
2500/66R
2500/75R
4M/66
4M/75
4M/66R
4M/75R
4M/15BU
4M/15R/BU



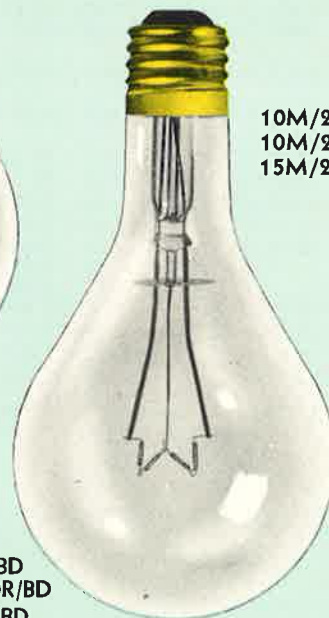
4M/15BD
4M/15R/BD



6M/20BU
6M/20R/BU



10M/20BD
10M/20R/BD
15M/20BD
6M/20BD
6M/20R/BD



10M/20BU
10M/20R/BU
15M/20BU

Filament forms and support constructions of lamps in light face type are not exactly as illustrated but differ only slightly.

Street series lamps, operated on constant current series circuits, have a slow increase in wattage and filament temperature throughout life. Hence the light output is maintained throughout life at a high percentage of initial value.

Current variations affect sharply the performance of street series lamps. The current in street series circuits should therefore be adjusted as nearly as possible to rated value.

The relative use of multiple lamps in street lighting is steadily increasing. A multiple street lamp having a certain value of *nominal* lumens is

designed to deliver the same average light output throughout rated life as the series lamp with the corresponding value for rated *initial* lumens. Multiple lamps are also available in combinations of bulb, base and light center length—other than those listed below—to make possible a greater degree of luminaire standardization.

The 3,000-hour street lighting lamps are intended for group replacement twice a year. The standard-life (2,000-hour series and 1,500-hour multiple) street lighting lamps are widely used for group replacement three times a year.

MULTIPLE STREET LIGHTING LAMPS — REGULAR

| Lamp Ordering Abbreviation | Lumens | Watts | Bulb | Base | Volts | Burning Position | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Light Cntr. Lgth. | Max. Ovr. Lgth. |
|----------------------------|--------|-------|-------|------|-------|------------------|----------------|-------|----------|--------------------|-------------------|-------------------|
| 85A23/48 | 1000 | 85 | A-23 | Med. | 120 | Any | 120 | C | C-9 | 1500 | 4 $\frac{3}{8}$ | 6 $\frac{1}{16}$ |
| 175PS25/63 | 2500 | 175 | PS-25 | Med. | 120 | Any | 60 | C | C-9 | 1500 | 5 $\frac{1}{4}$ | 6 $\frac{1}{16}$ |
| 268PS35/55 | 4000 | 268 | PS-35 | Mog. | 120 | Any | 24 | C | C-9 | 1500 | 7 | 9 $\frac{3}{8}$ |
| 370PS40/50 | 6000 | 370 | PS-40 | Mog. | 120 | Any | 24 | C | C-9 | 1500 | 7 | 9 $\frac{3}{8}$ |
| 575PS40/51 | 10000 | 575 | PS-40 | Mog. | 120 | Any | 24 | C | C-7A | 1500 | 7 | 9 $\frac{3}{4}$ |
| 800PS52/79 | 15000 | 800 | PS-52 | Mog. | 120 | Any | 6 | C | C-7A | 1500 | 9 $\frac{1}{2}$ | 13 $\frac{1}{16}$ |

MULTIPLE STREET LIGHTING LAMPS — GROUP REPLACEMENT

| | | | | | | | | | | | | |
|------------|-------|-----|-------|------|-----|-----|-----|---|------|------|-----------------|-------------------|
| 58A19/62 | 600 | 58 | A-19 | Med. | 120 | Any | 120 | C | C-9 | 3000 | 2 $\frac{7}{8}$ | 4 $\frac{1}{4}$ |
| 92A23/49 | 1000 | 92 | A-23 | Med. | 120 | Any | 120 | C | C-9 | 3000 | 4 $\frac{3}{8}$ | 6 $\frac{1}{16}$ |
| 189PS25/64 | 2500 | 189 | PS-25 | Med. | 120 | Any | 60 | C | C-9 | 3000 | 5 $\frac{1}{4}$ | 6 $\frac{1}{16}$ |
| 295PS35/58 | 4000 | 295 | PS-35 | Mog. | 120 | Any | 24 | C | C-9 | 3000 | 7 | 9 $\frac{3}{8}$ |
| 405PS40/54 | 6000 | 405 | PS-40 | Mog. | 120 | Any | 24 | C | C-9 | 3000 | 7 | 9 $\frac{3}{4}$ |
| 620PS40/53 | 10000 | 620 | PS-40 | Mog. | 120 | Any | 24 | C | C-7A | 3000 | 7 | 9 $\frac{3}{4}$ |
| 860PS52/80 | 15000 | 860 | PS-52 | Mog. | 120 | Any | 6 | C | C-7A | 3000 | 9 $\frac{1}{2}$ | 13 $\frac{1}{16}$ |

SERIES STREET LIGHTING LAMPS — REGULAR

| Lamp Ordering Abbreviation | Rated Initial Lumens | Clear Bulb | Base | Volts | Amps. | Burning Position | Std. Pkg. Qty. | Class | Filament | Avg. Life | Avg. Light Center Lgth. | Max. Ovr. Lgth. |
|----------------------------|----------------------|------------|------|-------|-------|------------------|----------------|-------|----------|-----------|-------------------------|-----------------|
| 600/66 | 600 | PS-25 | Mog. | 6.4 | 6.6 | Any | 60 | C | C-8 | 2000 | 5 $\frac{3}{8}$ | 7 $\frac{1}{8}$ |
| 1M/66 | 1000 | PS-25 | Mog. | 9.5 | 6.6 | Any | 60 | C | C-8 | 2000 | 5 $\frac{3}{8}$ | 7 $\frac{1}{8}$ |
| 1M/75 | 1000 | PS-25 | Mog. | 8.3 | 7.5 | Any | 60 | C | C-8 | 2000 | 5 $\frac{3}{8}$ | 7 $\frac{1}{8}$ |
| 2500/66PS25 | 2500 | PS-25 | Mog. | 21.5 | 6.6 | Base Up | 60 | C | C-2V | 2000 | 5 $\frac{3}{8}$ | 7 $\frac{1}{8}$ |
| 2500/66 | 2500 | PS-35 | Mog. | 21.6 | 6.6 | Any | 24 | C | C-2V | 2000 | 7 | 9 $\frac{3}{8}$ |
| 2500/75 | 2500 | PS-35 | Mog. | 19.2 | 7.5 | Any | 24 | C | C-2V | 2000 | 7 | 9 $\frac{3}{8}$ |
| 4M/66 | 4000 | PS-35 | Mog. | 32.8 | 6.6 | Any | 24 | C | C-2V | 2000 | 7 | 9 $\frac{3}{8}$ |
| 4M/75 | 4000 | PS-35 | Mog. | 29.1 | 7.5 | Any | 24 | C | C-2V | 2000 | 7 | 9 $\frac{3}{8}$ |
| 4M/15BU | 4000 | PS-35 | Mog. | 13.8 | 15 | Base Up | 24 | C | C-2V | 2000 | 7 | 9 $\frac{3}{8}$ |
| 4M/15BD | 4000 | PS-35 | Mog. | 13.8 | 15 | Base Down | 24 | C | C-2V | 2000 | 6 $\frac{1}{4}$ | 9 $\frac{3}{8}$ |
| 6M/66 | 6000 | PS-40 | Mog. | 48.4 | 6.6 | Any | 24 | C | C-2V | 2000 | 7 | 9 $\frac{3}{4}$ |
| 6M/20BU | 6000 | PS-40 | Mog. | 14.9 | 20 | Base Up | 24 | C | C-2V | 2000 | 7 | 9 $\frac{3}{4}$ |
| 6M/20BD | 6000 | PS-40 | Mog. | 14.9 | 20 | Base Down | 24 | C | C-2V | 2000 | 6 $\frac{1}{4}$ | 9 $\frac{3}{4}$ |
| 10M/20BU | 10M | PS-40 | Mog. | 24.4 | 20 | Base Up | 24 | C | C-7 | 2000 | 7 | 9 $\frac{3}{4}$ |
| 10M/20BD | 10M | PS-40 | Mog. | 24.4 | 20 | Base Down | 24 | C | C-7 | 2000 | 6 $\frac{1}{4}$ | 9 $\frac{3}{4}$ |
| 10M/66 | 10M | PS-40 | Mog. | 79.7 | 6.6 | Any | 24 | C | C-7A | 2000 | 7 | 9 $\frac{3}{4}$ |
| 15M/20BU | 15M | PS-40 | Mog. | 35.9 | 20 | Base Up | 24 | C | C-7 | 2000 | 7 | 9 $\frac{3}{4}$ |

SERIES STREET LIGHTING LAMPS — GROUP REPLACEMENT

| | | | | | | | | | | | | |
|---------------|-------|-------|------|------|-----|-----------|----|---|------|------|-----------------|-----------------|
| 600/66R | 600 | PS-25 | Mog. | 6.7 | 6.6 | Any | 60 | C | C-8 | 3000 | 5 $\frac{3}{8}$ | 7 $\frac{1}{8}$ |
| 1M/66R | 1000 | PS-25 | Mog. | 9.8 | 6.6 | Any | 60 | C | C-8 | 3000 | 5 $\frac{3}{8}$ | 7 $\frac{1}{8}$ |
| 1M/75R | 1000 | PS-25 | Mog. | 8.7 | 7.5 | Any | 60 | C | C-8 | 3000 | 5 $\frac{3}{8}$ | 7 $\frac{1}{8}$ |
| 2500/66R/PS25 | 2500 | PS-25 | Mog. | 22.3 | 6.6 | Base Up | 60 | C | C-2V | 3000 | 5 $\frac{3}{8}$ | 7 $\frac{1}{8}$ |
| 2500/66R | 2500 | PS-35 | Mog. | 22.4 | 6.6 | Any | 24 | C | C-2V | 3000 | 7 | 9 $\frac{3}{8}$ |
| 2500/75R | 2500 | PS-35 | Mog. | 19.8 | 7.5 | Any | 24 | C | C-2V | 3000 | 7 | 9 $\frac{3}{8}$ |
| 4M/66R | 4000 | PS-35 | Mog. | 34.2 | 6.6 | Any | 24 | C | C-2V | 3000 | 7 | 9 $\frac{3}{8}$ |
| 4M/75R | 4000 | PS-35 | Mog. | 30.0 | 7.5 | Any | 24 | C | C-2V | 3000 | 7 | 9 $\frac{3}{8}$ |
| 4M/15R/BU | 4000 | PS-35 | Mog. | 14.6 | 15 | Base Up | 24 | C | C-2V | 3000 | 7 | 9 $\frac{3}{8}$ |
| 4M/15R/BD | 4000 | PS-35 | Mog. | 14.6 | 15 | Base Down | 24 | C | C-2V | 3000 | 6 $\frac{1}{4}$ | 9 $\frac{3}{8}$ |
| 6M/66R | 6000 | PS-40 | Mog. | 50.0 | 6.6 | Any | 24 | C | C-2V | 3000 | 7 | 9 $\frac{3}{4}$ |
| 6M/20R/BU | 6000 | PS-40 | Mog. | 15.7 | 20 | Base Up | 24 | C | C-2V | 3000 | 7 | 9 $\frac{3}{4}$ |
| 6M/20R/BD | 6000 | PS-40 | Mog. | 15.7 | 20 | Base Down | 24 | C | C-2V | 3000 | 6 $\frac{1}{4}$ | 9 $\frac{3}{4}$ |
| 10M/66R | 10000 | PS-40 | Mog. | 86.6 | 6.6 | Any | 24 | C | C-7A | 3000 | 7 | 9 $\frac{3}{4}$ |
| 10M/20R/BU | 10000 | PS-40 | Mog. | 25.3 | 20 | Base Up | 24 | C | C-7 | 3000 | 7 | 9 $\frac{3}{4}$ |
| 10M/20R/BD | 10000 | PS-40 | Mog. | 25.3 | 20 | Base Down | 24 | C | C-7 | 3000 | 6 $\frac{1}{4}$ | 9 $\frac{3}{4}$ |

G-E MARINE LAMPS



50/50P25/28
100/100P25/29



46A/S8SCP
70A/S8



1M/T20/5



1M/G25

Marine lamps are used on shipboard to outline and identify vessels for seaway safety, and to signal between ships. On land, they provide a source for lighthouse beacons. Underwater, they illuminate areas where divers must work. G-E marine lamps are designed specifically for these demanding services. Other G-E filament and fluorescent lamps effectively provide general illumination in ship cabins and work areas.

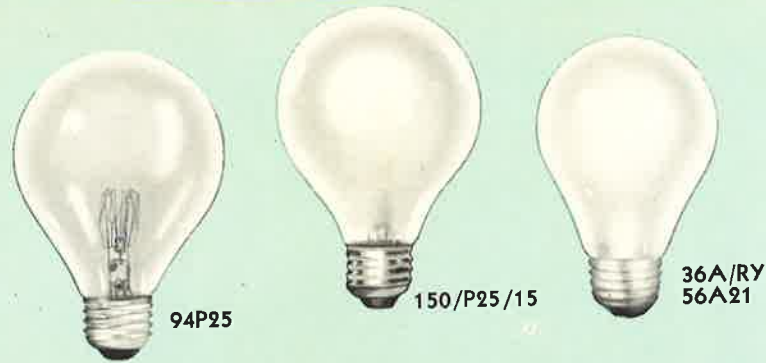
| Ordering Abbreviation | Service | Watts | Volts | Base | Std. Pkg. Qty. | Class | Fila. | Approx. Hours Life | Lumens | Light Center Length | Max. Over-all Length |
|-----------------------|------------------------|-------|---------|-------------|----------------|-------|-------|--------------------|--------|--------------------------------|--------------------------------|
| 1M/G25 | Diving* ^① | 1000 | 115-125 | cable leads | 4 | C | C-5 | 50 | 25M | 8 ³ / ₄ | 10 ³ / ₄ |
| 50/50P25/28 | Running† | 50 | 120 | 3c mog. | 60 | C | C-5 | | | | |
| | | 50 | | | | C | C-9 | 750 | 375 | 3 ⁵ / ₁₆ | 5 ¹ / ₁₆ |
| 100/100P25/29 | Running† | 100 | 120 | 3c mog. | 60 | C | C-5 | | | | |
| | | 100 | | | | C | C-9 | 750 | 1050 | 3 ⁵ / ₁₆ | 5 ¹ / ₁₆ |
| 1M/T20/5 | Lt.house† ^① | 1000 | 120 | Mog. | 12 | C | 2C-5 | 1000 | ..... | 4 ³ / ₄ | 9 ¹ / ₁₆ |
| 46A/S8SCP | Signal | .46A | 6.2 | S.C. Pf. | 100 | B | C-8 | 500 | ..... | 1 ¹ / ₈ | 2 |
| 70A/S8 | Signal | .70A | 6.2 | S.C. Pf. | 100 | C | C-8 | 500 | ..... | 1 ¹ / ₈ | 2 |

* To be burned only under water. Withstands 300 pounds per square inch water pressure.

† Burn base down.

① Heat resistant glass.

G-E STREET RAILWAY LAMPS



Headlight lamps are designed for operation in series with four lamps of corresponding wattage and voltage used elsewhere in the car.

Car Lighting, 5-in-series, lamps are of the vacuum type. The 36-watt and 56-watt lamps provide more satisfactory performance when operated in the vertical base-up position.

The 30-volt cut-out lamps are of the gas-filled type

and are provided with a cut-out feature which short circuits the individual lamp upon burnout.

Shop and Yard Lighting—Arc-resisting lamps are provided with a feature built into the stem of the lamp to minimize the tendency to arc when a lamp in the 5-in-series circuit burns out. They are chiefly used in the lighting of shops and yards.

STREET RAILWAY LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Fila. | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovr. Lgth. |
|----------------------------|-------|------|------|-------|-------------------|----------------|-------|-------|--------------------|--------|-------------------|-----------------|
| 94P25 | 94 | P-25 | Med. | 120 | Headlight (.863A) | 60 | B | C-5 | 1000 | 920 | 2 $\frac{1}{16}$ | 4 $\frac{3}{4}$ |
| 150P25/15 | 150 | P-25 | Med. | 120 | Headlight | 60 | C | C-5 | 500 | 1900 | 3 | 4 $\frac{3}{4}$ |
| CAR LIGHTING (5-in-Series) | | | | | | | | | | | | |
| 36A/R/ | 36 | A-21 | Med. | 120 | .342A | 120 | B | C-9 | 2000 | 365 | 2 $\frac{7}{8}$ | 4 $\frac{1}{8}$ |
| 56A21 | 56 | A-21 | Med. | 120 | .519A | 120 | B | C-9 | 2000 | 590 | 2 $\frac{7}{8}$ | 4 $\frac{1}{8}$ |

G-E TRAFFIC SIGNAL LAMPS

The traffic-signal beam candlepowers recommended by the Institute of Traffic Engineers are based on the light output of the standard 60-watt traffic signal lamp. The 64-watt and 69-watt lamps are equivalent in light out-put to the 60-watt lamp and have longer life for group replacement which usually reduces maintenance expense and signal outages due to lamp burnouts.

The 100-watt and 107-watt and 116-watt lamps are used where there is high background brightness or where a special hazard may call for a signal having unusually high attention-value.

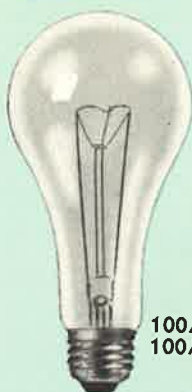


| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Burning Position | Std. Pkg. Qty. | Class | Filament | Rated Avg. Life | Approx. Initial Lumens | Light Center Length | Max. Ovr. Length |
|----------------------------|-------|------|------|-------|------------------------------|----------------|-------|----------|-----------------|------------------------|---------------------|------------------|
| 40A/TS | 40 | A-21 | Med. | 120 | Burn Base Down To Horizontal | 120 | C | C-9 | 2000 | 360 | 2 $\frac{1}{16}$ | 4 $\frac{7}{16}$ |
| 60A21/TS | 60 | A-21 | Med. | 120 | | 120 | C | C-9 | 2000 | 665 | 2 $\frac{1}{16}$ | 4 $\frac{7}{16}$ |
| 64A21/TS | 64 | A-21 | Med. | 120 | | 120 | C | C-9 | 3000 | 665 | 2 $\frac{1}{16}$ | 4 $\frac{7}{16}$ |
| 69A21/TS | 69 | A-21 | Med. | 120 | | 120 | C | C-9 | 6000 | 665 | 2 $\frac{1}{16}$ | 4 $\frac{7}{16}$ |
| 100A21/TS | 100 | A-21 | Med. | 120 | | 120 | C | C-9 | 2000 | 1260 | 2 $\frac{1}{16}$ | 4 $\frac{7}{16}$ |
| 107A21/TS | 107 | A-21 | Med. | 120 | | 120 | C | C-9 | 3000 | 1260 | 2 $\frac{1}{16}$ | 4 $\frac{7}{16}$ |
| 116A21/TS | 116 | A-21 | Med. | 120 | | 120 | C | C-9 | 6000 | 1260 | 2 $\frac{1}{16}$ | 4 $\frac{7}{16}$ |

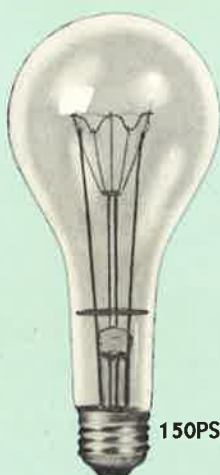
G-E HIGH VOLTAGE LAMPS (230-250 Volts) FOR GENERAL LIGHTING SERVICE



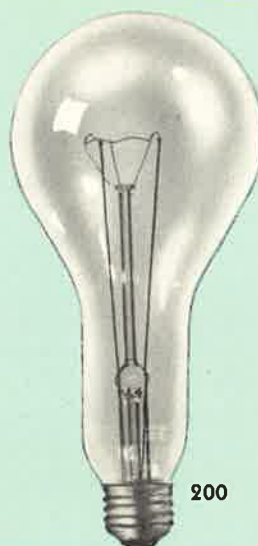
50A19/37
50A19/38



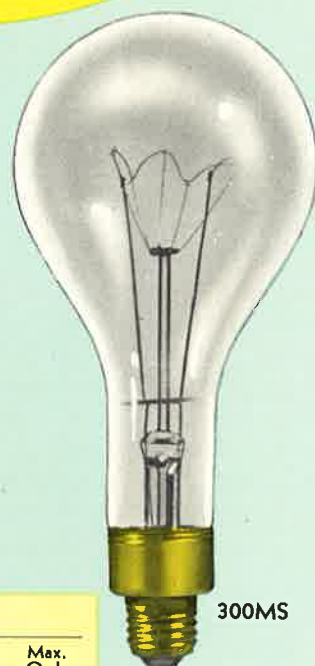
100A/CL
100A/RS



150PS25



200



300MS

These lamps, which are somewhat less rugged and less efficient than 115-125-volt lamps, are made available for use in the relatively few locations where only the higher voltage is available.

HIGH VOLTAGE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovr. Lgth. |
|----------------------------|-------|-------|-----------|--------------------|----------------|-------|----------|--------------------|--------|-------------------|-----------------|
| 15A | 15 | A-17 | Med. | Inside Frosted | 120 | B | C-9 | 1000 | 120 | 2 3/8 | 3 5/8 |
| 25A | 25 | A-19 | Med. | Inside Frosted | 120 | B | C-17A | 1000 | 225 | 2 1/2 | 3 15/16 |
| 50A | 50 | A-19 | Med. | Inside Frosted | 120 | B | C-17A | 1000 | 485 | 2 1/2 | 3 15/16 |
| 50A/RS | 50 | A-19 | Med. | Rough Service | 120 | B | C-22 | 1000 | 450 | 2 1/2 | 3 15/16 |
| 50A19/37 | 50 | A-19 | Med. | Clear | 120 | B | C-17A | 1000 | 480 | 2 1/2 | 3 15/16 |
| 60A21 | 60 | A-21 | Med. | Inside Frosted | 120 | B | C-17A | 1000 | 580 | 2 7/8 | 4 1/8 |
| 100A | 100 | A-21 | Med. | Inside Frosted | 120 | C | C-7A | 1000 | 1280 | 3 7/8 | 5 5/16 |
| 100A/CL | 100 | A-21 | Med. | Clear | 120 | C | C-7A | 1000 | 1280 | 3 7/8 | 5 5/16 |
| 100A/RS | 100 | A-21 | Med. | Rough Service | 120 | C | C-17 | 1000 | 900 | 3 7/8 | 5 5/16 |
| 150PS25 | 150 | PS-25 | Med. | Clear | 60 | C | C-7A | 1000 | 2050 | 5 1/4 | 6 15/16 |
| 200 | 200 | PS-30 | Med. | Clear | 60 | C | C-9 | 1000 | 3040 | 6 | 8 1/16 |
| 200/IF | 200 | PS-30 | Med. | Inside Frosted | 60 | C | C-9 | 1000 | 3040 | 6 | 8 1/16 |
| 300MS | 300 | PS-35 | Med. Skt. | Clear | 24 | C | C-7A | 1000 | 4800 | 7 1/2 | 9 7/8 |
| 300 | 300 | PS-35 | Mog. | Clear | 24 | C | C-7A | 1000 | 4800 | 7 | 9 3/8 |
| 300/IF | 300 | PS-35 | Mog. | Inside Frosted | 24 | C | C-7A | 1000 | 4800 | 7 | 9 3/8 |
| 500 | 500 | PS-40 | Mog. | Clear | 24 | C | C-7A | 1000 | 8950 | 7 | 9 3/4 |
| 500/IF | 500 | PS-40 | Mog. | Inside Frosted | 24 | C | C-7A | 1000 | 8950 | 7 | 9 3/4 |
| 750 | 750 | PS-52 | Mog. | Clear | 6 | C | C-7A | 2000 | 13300 | 9 1/2 | 13 1/16 |
| 750/IF | 750 | PS-52 | Mog. | Inside Frosted | 6 | C | C-7A | 2000 | 13300 | 9 1/2 | 13 1/16 |
| 1000 | 1000 | PS-52 | Mog. | Clear | 6 | C | C-7A | 2000 | 18600 | 9 1/2 | 13 1/16 |
| 1500 | 1500 | PS-52 | Mog. | Clear ^① | 6 | C | C-7A | 2000 | 27000 | 9 1/2 | 13 1/16 |

① Recommended burning position any within 60° of vertically base up or base down but lumen maintenance is best when burned vertically base up.

G-E LOW VOLTAGE LAMPS

6- and 12-volt lamps are used on battery-generator outfits, for automobiles, boats, airplanes and places where electric service is not available.



6S6



15A



25A



50A21

SIX VOLT AND TWELVE VOLT LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max Ovr. Lgth. |
|----------------------------|-------|------|-------|-------|----------------|----------------|-------|----------|--------------------|--------|-------------------|----------------|
| 25A | 25 | A-19 | Med. | 6 | Inside Frosted | 120 | C | C-6 | 1000 | 350 | 2 1/2 | 3 15/16 |
| 50A21 | 50 | A-21 | Med. | 6 | Inside Frosted | 120 | C | C-6 | 1000 | 780 | 3 3/8 | 4 15/16 |
| 6S6 | 6 | S-6 | Cand. | 12 | Clear | 240 | B | C-2V | 1500 | 50 | 1 7/8 | 1 7/8 |
| 25A | 25 | A-19 | Med. | 12 | Inside Frosted | 120 | C | C-6 | 1000 | 370 | 2 1/2 | 3 15/16 |
| 50A21 | 50 | A-21 | Med. | 12 | Inside Frosted | 120 | C | C-6 | 1000 | 830 | 3 3/8 | 4 15/16 |

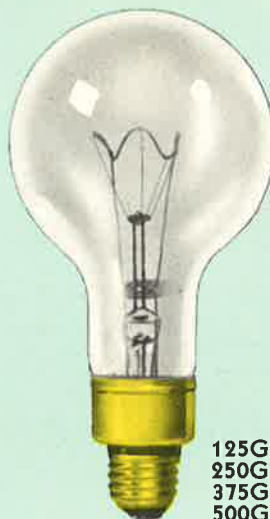
G-E INDUSTRIAL INFRARED LAMPS



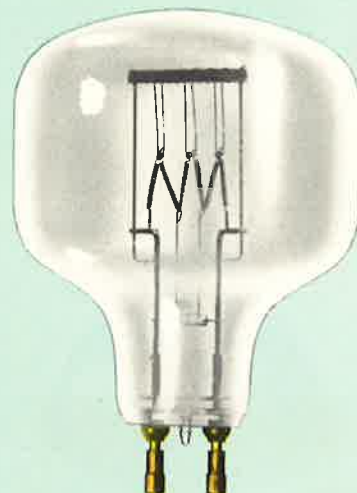
250PS30/33



125R40
250R40/4
375R40



125G30
250G30
375G30
500G30/1



1M/T40/3



500T3

Infrared lamps have many uses in commercial and industrial applications for heating and drying, and on the farm for brooding of poultry and animals. Important features of these lamps include rapid heat transfer, efficient operation, simple oven construction, low oven first cost, adaptability to conveyor line production, cleanliness and low maintenance cost. The several wattages in each bulb size permits a wide range of temperatures.

The 250 PS30/33 Brooder lamp is a specially

designed, low cost lamp, particularly effective for brooding older chicks and larger animals. It is interchangeable with R-40 lamps in existing brooder equipment. It eliminates "hot spots" and provides a wider distribution of heat.

The T-3 Infrared Quartz lamps are capable of delivering over three times the energy concentration provided by the 375-watt R-40 lamps. May be used in compact trough reflectors for concentrated radiation.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Class | Filament | Light Center Length | Maxlum Over-all Length |
|----------------------------|-------|-------|----------------|---------|--------------------|----------------|-------|----------|---------------------|------------------------|
| 125G30 | 125 | G-30 | Med. Skt. | 115-125 | ① | 60 | C | C-7A | 5 | 7 1/8 |
| 250G30 | 250 | G-30 | Med. Skt. | 115-125 | ①② | 60 | C | C-7A | 5 | 7 1/8 |
| 375G30 | 375 | G-30 | Med. Skt. | 115-125 | ①② | 60 | C | C-7A | 5 | 7 1/8 |
| 500G30/1 | 500 | G-30 | Med. Skt. | 115-125 | ①② | 60 | C | C-7A | 5 | 7 1/8 |
| 125R40 | 125 | R-40 | Med. Skt. | 115-125 | Light I. F. ① | 24 | C | C-9 | ... | 7 1/4 |
| 250R40/4 | 250 | R-40 | Med. Skt. | 115-125 | Light I. F. ① | 24 | C | C-9 | ... | 7 1/4 |
| 250PS30/33 | 250 | PS-30 | Med. | 115-125 | Brooder | 60 | C | C-9 | 6 | 8 1/8 |
| 375R40 | 375 | R-40 | Med. Skt. | 115-125 | Light I. F. ① | 24 | C | C-9 | ... | 7 1/4 |
| 375R40/1 | 375 | R-40 | Med. Skt. | 115-125 | ①③ | 24 | C | C-9 | ... | 7 1/8 |
| 500T3 | 500 | T-3 | 6" Flex. leads | 115-125 | Infrared Quartz ③ | 12 | C | C-8 | ... | 8 1/8 |
| 1M/T40/3 | 1000 | T-40 | Special | 115-125 | Triangular Fil. ①③ | 24 | C | ... | 3 1/8 | 7 1/4 |
| 1MT3 | 1000 | T-3 | 6" Flex. leads | 230-250 | Infrared Quartz | 12 | C | C-8 | ... | 13 1/8 |

① Average Laboratory Life in excess of 5000 hours.

② Burn only in porcelain sockets.

③ Special glass bulb—heat resistant.

G-E HEAT LAMPS AND SUNLAMPS



250R40/10



250R40/1



RS



S1

G-E heat lamps are useful as heat sources for relieving muscular aches, reducing sinus discomfort, and for other warming and drying applications in the home. The 250R40/1 and 250R40/10 heat lamps are designed to produce short-wave infrared radiation. The 250R40/10 is equipped with a bulb of heat-resisting glass to minimize the possibility of breakage if water splashes on it; it also has a built-in red filter to reduce brightness in applications where the lamp must be used near the eyes.

Sunlamps are effective producers of skin-tanning ultraviolet energy. They also provide a source of vitamin D, which is important in the development of children, poultry and animals. Regular exposure

to sunlamp energy will produce tanning of the skin in certain individuals. The sunlamps shown here also produce enough radiant heat to provide comfort in rooms that might otherwise be too cool for body exposure.

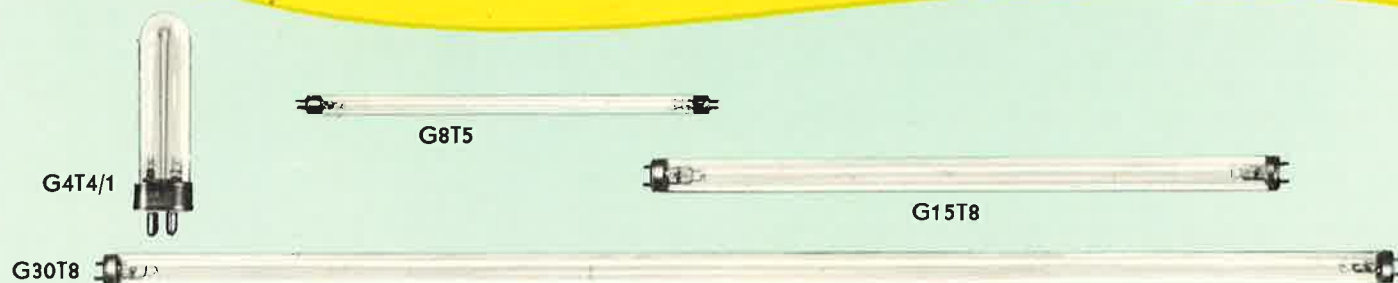
The RS sunlamp is particularly convenient, containing its own reflector and filament ballast; it can be operated without external accessories from any standard household outlet supplying 50- or 60-cycle alternating current. Its convenience and effectiveness make the RS sunlamp highly popular. The S-1 sunlamp is available for replacement in the special equipment designed for it.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Volts | Description | Std. Pkg. Qty. | Approx. Hours Life | Max. Ovr. Lgth. | Light Center Length |
|----------------------------|-------|-------|------|---------|----------------------|----------------|--------------------|-----------------|---------------------|
| 250R40/1 | 250 | R-40 | Med. | 115-125 | Light I. F. | 24 | ① | 6½ | .... |
| 250R40/10 | 250 | R-40 | Med. | 115-125 | Red Bowl | 24 | ① | 6⅞ | .... |
| RS | 275 | R-40 | Med. | 110-125 | ★Refl. Sunlamp—I. F. | 6 | 1000② | 7 | .... |
| S1 | 400 | PS-22 | Mog. | ..... | ★I. F. | 6 | 500 | 6⅞ | 5 |

① Average laboratory life exceeds 5000 hours. ★ Special Glass Bulb — Heat-resistant.

② Life under test conditions at 5 burning hours per start. Useful life in home applications averages about 600 applications of from 5 to 30 minutes each.

G-E GERMICIDAL LAMPS



Germicidal lamps provide 2537°A ultraviolet, effective in destroying molds and bacteria. They have wide application in hospital nurseries, contagious wards and surgeries, as well as in schools, offices, theatres and other places where air sanitation is needed. They also provide product protection for foods, pharmaceuticals and beverages. On farms they offer an important supplement to the usual sanitation methods practiced by poultrymen, dairymen, and stock raisers.

Reference: General Electric Lamp Division Bulletins LD-11, LD-14.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Std. Pkg. Qty. | Approx. Hours Life | Max. Ovr. Lgth. |
|----------------------------|-------|-------|-----------------------|----------------|--------------------|-----------------|
| G4T4/1 | 4 | T-4 ★ | Oval | 24 | 5000 ^① | 5 3/8 |
| G8T5 | 8 | T-5 | Small 4-Pin Min. Bip. | 24 | 5000 ^② | 12 |
| G15T8 | 15 | T-8 | Med. Bip. | 24 | 7500 ^② | 18 |
| G30T8 | 30 | T-8 | Med. Bip. | 24 | 7500 ^② | 36 |

① Life under specified test conditions with lamps turned off and restarted no oftener than once every three burning hours.

② Life under specified test conditions with lamps turned off and restarted no oftener than once every 8 burning hours.

★ Bent tube construction

G-E OZONE LAMP



OZ4S11

Short-wave ultraviolet from the General Electric ozone lamp passes through the special lamp bulb and acts on the oxygen in the air to form ozone. Ozone occurs outdoors — particularly after an electrical storm. It has a pleasant odor which masks many objectionable odors.

The G-E Ozone Lamp will banish the odors in rooms — particularly the odors a short time after cooking. It will reduce mustiness and the stale after-odors of tobacco smoke. Ozone lamps are generally operated in shielded fixtures mounted on the wall just above eye level.

Caution: Never use more than one lamp per thousand cubic feet of space in an inhabited room. Do not use in nurseries, sickrooms, or in atmospheres containing the vapors of chlorinated hydro-carbons (carbon tetrachloride, for example). Rays of lamp must be shielded from direct view. If not, ordinary glasses and clothing should be worn to protect eyes and skin.

A ballast must be used with the ozone lamps — G-E catalog number 89G504 is available for operation on 110-125-volt, 60-cycle current. A standard 40-watt filament lamp may also be used as a ballast.

OZONE LAMPS

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Description | Std. Pkg. Qty. | Approx. Hours Life | Max. Ovr. Lgth. |
|----------------------------|-------|------|--------|-------------|----------------|--------------------|-----------------|
| OZ4S11 | 4 | S-11 | Inter. | Clear | 120 | 4000 ^① | 2 1/4 |

① Approximate life under specified test conditions with continuous burning.

Mercury lamps are highly versatile sources of radiant energy. They are efficient generators of visible light for general lighting applications for factories, for street lighting and outdoor flood-lighting. They are also common sources of ultraviolet energy used for sunlamps and for black light and photochemical effects.

Mercury lamps require correctly designed ballasts for their operation; all lamps with the same suffix number in the lamp order abbreviation are interchangeable and will operate from the same ballast design.

The characteristic blue-green light from mercury lamps appears as a "white light" but distorts the color appearance of colored objects, and for that reason are often combined with filament lamps for interior illumination.

In color improved lamps a fluorescent phosphor is coated on the inside of the outer bulb. This phosphor is activated by the ultraviolet radiation and converts this energy which otherwise is wasted into light to fill in the red portion of the spectrum not present from mercury radiation alone. The resultant color of the light is approximately the same as when equal wattage of mercury and filament lamps are combined.

OPERATING PRINCIPLES

Fundamentally the principle of all mercury vapor lamps is the same—that of an electron flow between electrodes through ionized mercury vapor. Each lamp takes a design best adapted to efficient performance for the particular service intended. This is the reason for the widely different appearance of the various types.

Lamps for general lighting service are designed to put as much energy within the visible spectrum as possible and comparative efficiency is stated in lumens output. For ultraviolet applications the luminous efficiency is less important—sometimes unwanted; in the case of black light applications, light absorbing filters must be used.

Lamps are designed for one specific terminal voltage, and all provisions for the supply of this required voltage are governed by proper selection of transformer designed for operation on line voltage conditions encountered in service. Where the lamp operating volts are approximately half of the service voltage simple reactors may be used, otherwise combination auto transformers ballast designs are required. The variations influence transformer size, weight, and cost.

The listing below includes all of the more popular ratings of G-E mercury lamp transformers, most of which are carried in distributor or factory stocks.

TULAMP TRANSFORMERS generally provide high overall power factor, line starting current lower than operating current, lower first cost, and lower wiring costs. Lead-lag tulamp transformers should not be used for operation of lamps in ambient temperatures below 32 degrees F. Lead-lag transformers should be used for operation of lamps indoors only.



TYPICAL ENCLOSED TRANSFORMER



CORE AND COIL TRANSFORMER



3 KW TRANSFORMER

TRANSFORMERS FOR MERCURY LAMPS — 60 CYCLES

| Lamp Watts—Type ① | Type of Transformer | G-E Model Number* 9T64Y- |
|---------------------------------------|-------------------------------|--------------------------------|
| H 85 — C3 | Core and Coil | 4009 |
| H 100 — A4, BL4 L4, M4 SP4, FL4 | Stabilized Output Transformer | 4017 |
| | Core and Coil | 3518 |
| | Enclosed Single | 1019 |
| | Moistureproof Single | 3271 |
| | Enclosed Single | 0020 |
| H250 — A5 J5 | Enclosed Tulamp | 0022 |
| | Core and Coil | 3516 |
| | Enclosed Single | 1017 |
| | Enclosed Single | 0021 |
| | Enclosed Single | 1006 |
| | Enclosed Single | 6 |
| | Enclosed Single | 7 |
| | Enclosed Single | 8 |
| | Pendant, Mounted | 2001 |
| | Enclosed Single Reactor | 1005 |
| H400 — B1 E1 J1 R1 | Enclosed Single Reactor | 1004 |
| | Core and Coil Reactor | 3504 |
| | Moistureproof Single | 3000 |
| | Core and Coil | 3500 |
| | Enclosed Single | 9 |
| | Weatherproof Single ② | 3020 |
| | Enclosed Tulamp | 0016 |
| | Enclosed Tulamp | 0025 |
| | Enclosed Tulamp | 0026 |
| | Enclosed Tulamp | 0019 |
| H1000 — H6 | Core and Coil | 4010 |
| H1000 — A12, C12 A15 C15 | Enclosed Single Reactor | 4016 |
| | Enclosed Single Reactor | 28 |
| | Enclosed Tulamp Reactor | 4013 |
| | Enclosed Single | 4012 |
| | Enclosed Single | 4007 |
| H3000 — A9 | Enclosed Single | 3751 |
| | Enclosed Single | 3750 |

① Lamps having the same last numeral in the ordering designation use the same transformer types. The letter preceding the numeral simply indicates modification in lamp construction.

② For outdoor operation of H400-E1, G-E transformers 9T64Y3272 (for low power factor) and 9T64Y0016 (for high power factor) which are designed for higher open circuit voltages, are required when outdoor temperatures as low as -20 degrees F. are encountered.

* The prefix 9T64Y- should be used with each identifying number given below.

G-E MERCURY LAMPS



H400-R1



H1000-C12
H1000-C15



H400-RW1
H400-RC1

REFLECTOR-TYPE LAMPS

The light distribution from the elongated arc tube of the mercury lamp is mostly in a horizontal pattern. Suitable reflectors intercept and control about 80% of the light—only 20% downward being uncontrolled by usual reflector design.

This large percentage of the light output subjected to reflector control puts a premium on keeping reflecting surfaces bright and clean, since any depreciation of reflecting surfaces due to dust and dirt means just that much waste of light paid for but not utilized. The advantage of reflector-type lamps is that the sealed-in silvered reflecting surfaces do not deteriorate throughout the life of the lamp. The expense and nuisance of cleaning fixtures has always been a bothersome problem to the point of actual neglect which means not only a waste of both lamp and current but more significant in over-all effect is the loss of illumination for production efficiency.

The H400-R1 is the unmodified mercury lamp in an internally silvered R-52 reflector bulb. It's maintenance cost is low and it gives up to 54% more light than the H400 A1 lamp and up to 36%

more than the H400 E1 lamp shown on the next page.

The H400-RC1 combines top color improvement with high efficiency. In this color-improved lamp a phosphor coating is used instead of the metallic reflector. This white powder acts as a diffuse reflector but allows approximately one-third of the light to be transmitted through the coating. This upward light may be used to illuminate the ceiling and upper side walls, or may be redirected by an external reflector which also acts as a shield against high lamp brightness; also as a protection to the lamp from thermal or mechanical shock. The White Mercury RW-1 is recommended for most 400-watt mercury applications. It provides more light than other 400-watt mercury lamps, low maintenance cost and the specially designed phosphor produces a desirable white light, but not as much color improvement as the RC-1.

The half phosphor coated, color improved H1000 RC-15 or H1000 RC-12 produce up to 10% more light than the H1000 A-15 or H1000 A-12 and up to 29% more light than the H1000 C-15 or H1000 C-12 lamps.

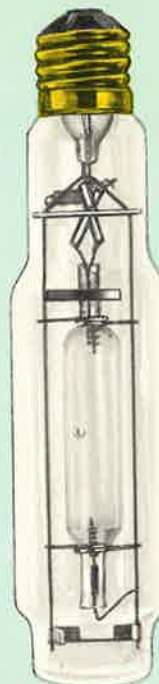
G-E MERCURY LAMPS



H100-M4



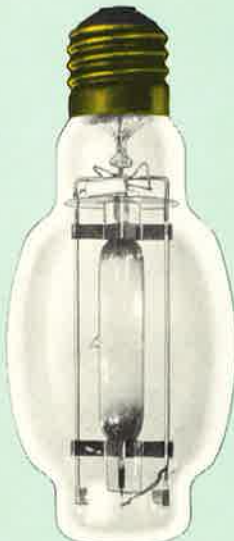
H100-L4



H400-E1T



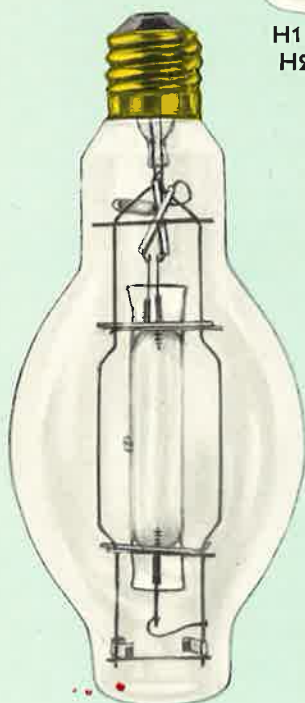
H400-A1
H400-B1



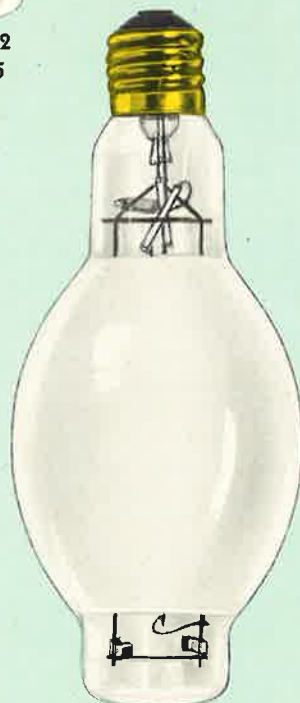
H175-A22
H250-A5



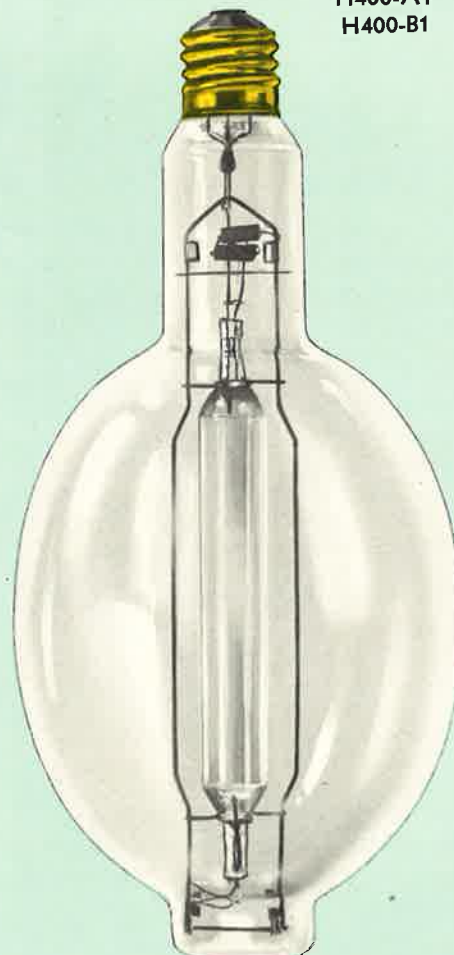
H175-C22
H250-J5



H400-E-1



H400-J1



H1000-A15
H1000- 12



H3000-A9

During the past three years many improvements have been made in General Electric 400-watt Mercury Lamps. These include silver plated wire supports for the arc tube; white-finish resistor relocated behind the heat reflector disc; improved electrodes; purified quartz parts and specially treated outer bulb.

The newest improvement, a specially designed phosphor, has resulted in even higher efficiency

for the H400-RW1 and H400-EW1 lamps. This new phosphor converts ultraviolet radiation into appreciably more white light. A new group of 400-watt weather-resistant lamps is also available at slightly higher prices. They are identical except for glass to their counterparts listed below and are identified by "/WR" after ordering abbreviation. These new lamps will find application wherever water breakage problems occur with regular lamps.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Description See Footnote No. | Std. Pkg. Qty. | Approx. Hours Life | Approx. Initial Lumens | Max. Over-all Length | Light Center Length |
|----------------------------|-------|-------------------|-------------|--|----------------|--------------------|------------------------|----------------------|---------------------|
| H100-SP4 | 100 | PAR-38 | Admed. Skt. | ★Black Light (Spot)—Use separate filter (3, 4) | 12 | 6000 | 2300(2) | 5 $\frac{7}{16}$ | .... |
| H100-FL4 | | Projector | | ★Black Light (Flood)—Use separate filter (3, 4,) | 12 | 6000 | 2300(2) | 5 $\frac{7}{16}$ | .... |
| H100-L4 | 100 | PS-25 | Mog. | Street Lighting (3) | 24 | 6000 | 3500(1) | 7 $\frac{1}{8}$ | 5 |
| H100-M4 | | | | General and Street Lighting Color Improved (3) | 24 | 6000 | 3300(1) | 7 $\frac{1}{8}$ | 5 |
| H100-A4 | 100 | T10 | Admed. | ★General Lighting; Black Light Use separate filter (3, 5) | 12 | 6000 | 3500(1) | 5 $\frac{5}{8}$ | 3 $\frac{7}{16}$ |
| H100-BL4 | 100 | T-16 | Admed. | ★Black Light—Integral filter(6,7) | 12 | 1000 | ..... | 5 $\frac{1}{2}$ | 3 $\frac{7}{16}$ |
| H175-A22 | 175 | BT-28 | Mog. | General and Street Lighting Black Light—Use separate filter(9, 8, 3) | 12 | 6000 | 7000 | 8 $\frac{1}{4}$ | 5 |
| H175-C22 | | | | General and Street Lighting Color Improved (9, 8, 3) | 12 | 6000 | 6700 | 8 $\frac{1}{4}$ | 5 |
| H250-A5 | 250 | BT-28 | Mog. | Black Light—Use separate filter; General and St. Ltg. (9, 8, 3) | 12 | 6000 | 11000(A) | 8 $\frac{1}{4}$ | 5 |
| H250-J5 | | | | General and Street Lighting Color Improved (9, 8, 3) | 12 | 6000 | 10500 | 8 $\frac{1}{4}$ | 5 |
| H400-E-1 | 400 | BT-37 | Mog. | General and St. Ltg. Black Lt. — Use separate filter (9, 8) | 6 | 6000 | 21000(B) | 11 $\frac{1}{2}$ | 7 |
| H400-EW1 | | | | Gen. & St. Ltg. Wh. Mercury(9,8) | 6 | 6000 | 23000 | 11 $\frac{1}{2}$ | 7 |
| H400-J1 | | | | General and Street Lighting Color Improved (9, 8) | 6 | 6000 | 20000(C) | 11 $\frac{1}{2}$ | 7 |
| H400-E1T | 400 | T-20 | Mog. | ★General and Street Ltg. Black Light—Use separate filter (8) | 12 | 6000 | 20000 | 11 | 7 |
| H400-A1 | 400 | T-16 | Mog. | ★Gen. & St. Ltg. Base Up (10,11) | 12 | 6000 | 15500(D) | 13 | 7 $\frac{3}{4}$ |
| H400-B1 | | | | ★General and Street Lighting Base Down (12, 16) | 12 | 6000 | 15500(D) | 13 | 7 $\frac{3}{4}$ |
| H400-R1 | 400 | R-52 | Mog. | Reflector High Bay I. F. (9) | 6 | 6000 | 18000(E) | 11 $\frac{3}{4}$ | .... |
| H400-RW1 | | | | High Bay White Mercury (9) | 6 | 6000 | 22000 | 11 $\frac{3}{4}$ | .... |
| H400-RC1 | | | | High Bay Color improved (9) | 6 | 6000 | 20500(F) | 11 $\frac{3}{4}$ | .... |
| H1000-A12 | 1000 | BT-56 | Mog. | ★General Lighting (9, 3, 13) | 6 | 6000 | 54000(G) | 15 $\frac{1}{16}$ | 9 $\frac{3}{8}$ |
| H1000-C12 | | | | ★General Ltg. Color Improved (9,3,13) | 6 | 6000 | 51500(H) | 15 $\frac{1}{16}$ | 9 $\frac{3}{8}$ |
| H1000-RC12 | | | | ★Semi-Reflector High Bay—Color Improved (9, 3) | 6 | 6000 | 53000 (I) | 15 $\frac{1}{16}$ | 9 $\frac{3}{8}$ |
| H1000-A15 | | | | ★Gen. St. & Industrial Ltg. (9, 3, 13,) | 6 | 6000 | 54000(G) | 15 $\frac{1}{16}$ | 9 $\frac{3}{8}$ |
| H1000-C15 | | | | ★General Ltg. Color Improved(9,3,13) | 6 | 6000 | 51500(H) | 15 $\frac{1}{16}$ | 9 $\frac{3}{8}$ |
| H1000-RC15 | | | | ★Semi-Reflector High Bay—Color Improved (9, 3) | 6 | 6000 | 53000(I) | 15 $\frac{1}{16}$ | 9 $\frac{3}{8}$ |
| H3000-A9 | 3000 | T-9 $\frac{1}{2}$ | S. C. Term. | ★High Bay Industrial Ltg. (3) | 1 | 6000 | 132000(J) | 55 | .... |

① Rated values corrected to 95.5 watts which is representative of field service.

② Rated values corrected to 96.7 watts which is representative of field service.

③ Approximate life under specified test conditions with 5 or more burning hours per start.

④ Opaque coating on reflecting section of bulb.

⑤ When H100-A4 lamps are operated on direct current a polarity reversing switch should be installed to avoid the possibility of electrolysis in the lamps.

⑥ Designed for service other than illumination.

⑦ Life under specified test conditions with lamps turned off and restarted no oftener than once every 5 burning hours.

⑧ Horizontal burning approved with or without magnet; so operated, published life ratings apply but watts and lumens are reduced.

⑨ May not give satisfactory performance if any accessory equipment is attached to, or touches the glass bulb, should be shielded against moisture falling on the bulb.

⑩ Burning position within 10° of vertical base up.

⑪ Horizontal burning approved with magnet holding arc approximately centered; so operated, published life ratings apply but watts and lumens are reduced.

⑫ Burning position must be within 10° of vertical base down.

⑬ The H1000 watt lamps will operate satisfactorily on 700 watt ballasts in street and industrial applications.

Approx. Mean Lumens: (A) 8900, (B) 16,400, (C) 15600 (D) 13600, (E) 14900, (F) 17000, (G) 40500, (H) 36100, (I) 3800, (J) 103000.

★ Special Glass Bulb — Heat-resistant.

G-E MERCURY BLACK LIGHT LAMPS



H100-SP4



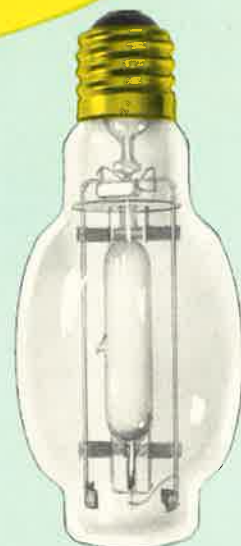
H100-FL4



H100-A4



H100-BL4



H250-A5

"Black Light" is a popular name for near ultraviolet energy in the 3200A-4000A band. These invisible rays cause many materials to glow. The process is used for stage and decorative effects, industrial inspection and production, detective work, mineral exploration, medical applications, and advertising.

To be effective visible light emitted by

the source must be absorbed by a filter. In the H100-BL4, F15T8/BLB, and in the F40T12/BLB the lamp bulb itself is the filter made of dark purple glass which absorbs nearly all the visible light and transmits a high percentage of black light.

Fluorescent Black Light Lamps are more efficient than Mercury types but require more space.

| Lamp Ordering Abbreviation | Watts | Bulb | Base | Std. Pks. Qty. | Approx. Hours Life | Lumens | Light Cntr. Lgth. | Max. Ovl. Lgth. |
|----------------------------|-------|--------|-------------|----------------|--------------------|--------|--------------------------------|--------------------------------|
| H100-SP4★②③ | 100 | PAR-38 | Admed. Skt. | 12 | 2000 | ..... | ..... | 5 ⁷ / ₁₆ |
| H100-FL4★②③ | 100 | PAR-38 | Admed. Skt. | 12 | 2000 | ..... | ..... | 5 ⁷ / ₁₆ |
| H100-A4★② | 100 | T-10 | Admed. | 12 | 6000 | 3500 | 3 ⁷ / ₁₆ | 5 ⁵ / ₈ |
| H100-BL4★② | 100 | T-16 | Admed. | 12 | 1000 | ..... | 3 ⁷ / ₁₆ | 5 ¹ / ₂ |
| H250-A5 | 250 | BT-28 | Mog. | 12 | 6000 | 11000 | 5 | 8 ¹ / ₄ |

G-E FLUORESCENT BLACK LIGHT LAMPS

F40T12/BL F40T12/BL/RS

F40T12/BLB

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length, Inches | Base | Standard Package Quantity | Hrs. Life |
|----------------------------|--------------------|------|----------------|-----------|---------------------------|-----------|
| F15T8/BL | 15 | T-8 | 18 | Med. Bip. | 24 | 7500 |
| F15T8/BLB① | 15 | T-8 | 18 | Med. Bip. | 24 | 7500 |
| F30T8/BL | 30 | T-8 | 36 | Med. Bip. | 24 | 7500 |
| F40T12/BL | 40 | T-12 | 48 | Med. Bip. | 24 | 7500 |
| F40T12/BLB① | 40 | T-12 | 48 | Med. Bip. | 24 | 7500 |
| F40T12/BL/RS | 40 | T-12 | 48 | Med. Bip. | 24 | 7500 |
| F40T12/BLB/RS① | 40 | T-12 | 48 | Med. Bip. | 24 | 7500 |

① Integral filter.

② Life under specified conditions with lamps turned off and restarted no oftener than once every 5 burning hours.

③ Opaque coating on reflecting section of bulb.

★ Special Glass Bulb — Heat-resistant.

G-E FLUORESCENT LAMPS

In fluorescent lamps, gas acts as the conductor of electricity and light is produced by electronic activity, as opposed to electrically heating a filament to incandescence to produce light in an incandescent lamp.

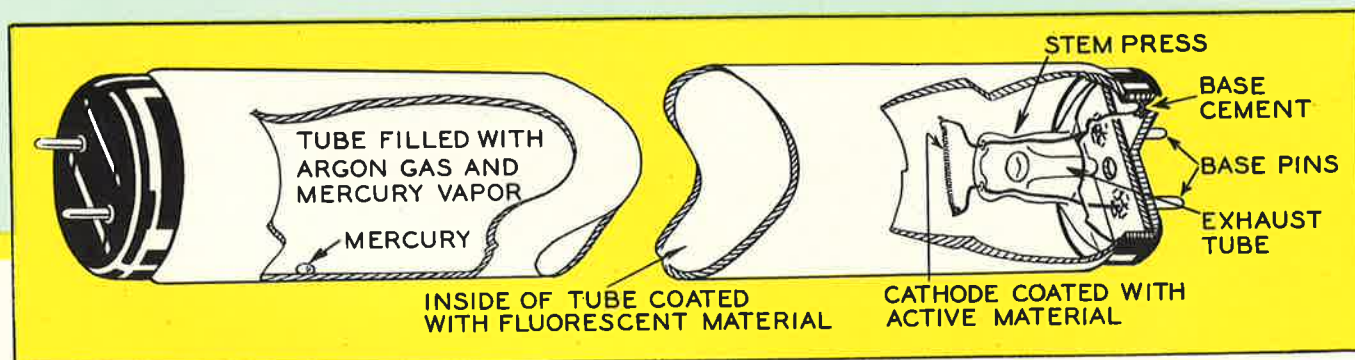
A fluorescent lamp is a complex electrical device. For this reason its light output and performance can be greatly affected by the quality and design of materials used to make it, by precautions taken during manufacture, and also by the equipment used for starting and operating the lamp.

In appraising the value of a fluorescent lamp the following factors must be considered in addition to price: Light output, Maintenance of light, Dependability, Uniformity, Color, Life.

TYPES OF FLUORESCENT LAMPS

Fluorescent lamps may be grouped according to types of starters and bases:

1. a. Bipin-base lamps for use in fixtures having starters or manual starting switches.
b. Bipin-base Rapid-Start lamps for use on rapid-start ballasts to get quick starting without starters. These lamps may also be used in fixtures with glow-type starters.
c. Recessed base Rapid-Start, High Output and Power-Groove lamps for higher light output.
d. Bipin-base Instant-start lamps for fixtures with instant-start ballasts.
2. Slimline fluorescent lamps are instant-start types with single-pin bases.
3. Circline fluorescent lamps have circular shapes and use 4-prong connector-type bases.



CATHODES

Two cathodes, placed one at each end of the lamp, are the source of electrons by which the current is conducted in a fluorescent lamp. The design and treatment of the cathode has a decided effect on the performance of the lamp.

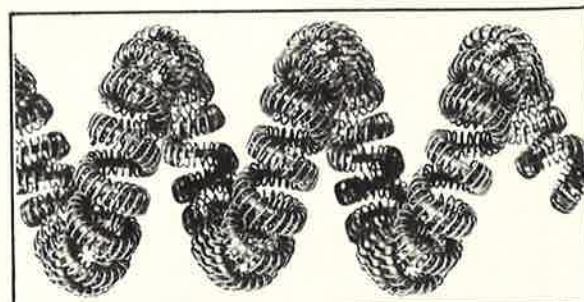
TRIPLE-COIL TUNGSTEN CATHODES

Used in instant-start single-pin and bipin-base lamps, and also in the Rapid Start Lamps. This is a unique cathode design developed by General Electric, giving improved life performance on Instant-start and Rapid Start ballasts because the cathode holds more emission material and holds it more securely. Too, the fine wire heats up quickly during starting, which also increases life.

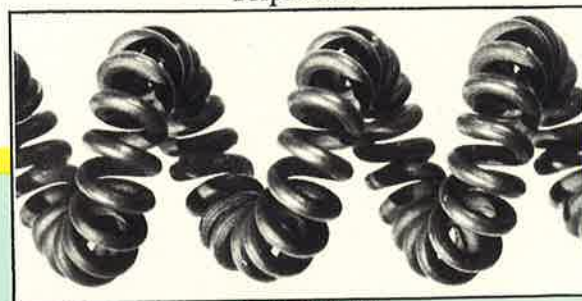
COILED-COIL TUNGSTEN CATHODES

Used in general line lamps intended for starter service, and also for Trigger-start ballasts.

In manufacture, the coiled tungsten wires shown below are coated with the electron-emitting material.



Triple-Coil



Coiled-Coil

G-E FLUORESCENT LAMP OPERATING

There are a number of different methods by which fluorescent lamps may be started and operated. Each method requires the selection of a particular combination of fluorescent lamp and auxiliary equipment. The choice depends upon lamp characteristics, application requirements, and cost versus convenience factors. For example, if lamps are to be operated outdoors in cold weather, only a few types will perform with best results.

There are five principle methods of operation. Some lamps may be operated by only one method; some lamps may be operated by more than one. The following describes these five operating methods and lists the lamp sizes appropriate to each.

1. Preheat or Switch Starting (with starters or manual starting switches)

If fluorescent lamp cathodes are pre-heated before the lamps is started, relatively inexpensive ballasts may be used. Such preheating is readily accomplished by means of manual switches (used in desk lamps and portable lamps) or by automatic starters (where fixtures are controlled from a wall switch). Starters are available in either standard or no-blink types. The latter are obtainable in either the manual reset (Watch Dog) or automatic reset designs and in the range of sizes needed for the different lamps. The Watch Dog is recommended in most instances because it eliminates "flashing" or "blinking" at the end of lamp life, saves ballast wear, and lasts much longer.

These are the lamps which may be operated with starters: 4-, 6-, 8-, and 13-watt T-5; 15- and 30-watt T-8; 14-, 15-, 20-, 25-, and 40-watt T-12; 90- and 100-watt T-17.

2. Trigger Start (no starters)

This newer method permits operation of some smaller preheat-start fluorescent lamps without starters, yet gives practically instant starting. Although lamp life is a little shorter and thus lamp cost a little higher, maintenance is greatly simplified and convenience of use much improved. No special lamp is required, but the lighting fixture must be equipped with the proper size of Trigger Start ballast. This automatically provides cathode preheat without starters. Trigger-Start ballasts are currently available for 14, 15, 20, and 30-watt General Line fluorescent lamps and for 8" and 12" Circline lamps.

3. Rapid Start (no starters)

This newest of systems used with Rapid Start, High Output and Power-Groove lamps combines the simplicity of Trigger Start with the low cost of conventional switch starting. It requires the use of special low-loss triple-coiled cathodes to reduce cathode heating losses, and is coated with Dri-Film to assure rapid starting even under adverse conditions. Rapid-Start lamps will give good performance in fixtures employing glow-type starters. The lamps should be used with Rapid Start ballasts designed to automatically provide adequate preheat with low losses. Lamps glow as soon as turned on and come up to uniform full brightness in approximately two seconds.

REPLACEABLE STARTERS

| Starter | Lamp Watts | Case Type |
|---------------------|------------|-----------|
| FS-5 | 4, 6, 8 | A |
| FS-2 | 14, 15, 20 | A |
| FS-20 | 14, 15, 20 | B |
| FS-25 | 22, 25 | A |
| FS-4 | 13, 30, 40 | A |
| FS-4DC | 13, 30, 40 | A |
| FS-30 | 30 | B |
| FS-12 | 32 | A |
| FS-4AR ^① | 40 | A |
| FS-40 | 40 | B |
| FS-400 ^② | 40 | B |
| FS-44 ^③ | 40 | D |
| FS-44DC | 40 | D |
| FS-64 ^④ | 90, 100 | D |
| FS-6 | 90, 100 | C |
| FS-850 | 90, 100 | E |
| FS-850S | 90, 100 | E |
| FS-852 | 90, 100 | ⑤ |

① Automatic reset lockout starter. Consumes ¼ watt during lamp operation

② See text.

③ Thermal starter. Consumes ½ watt during operation. For use with 40-watt preheat lamps for operation down to 0°F.

④ Thermal starter. Consumes 1 ½ watts during lamp operation.

⑤ Watch Dog, two-terminal mogul base.

STARTERS

The function of the starter switch is to complete, and then open, a circuit through the cathodes of the preheat type of fluorescent lamp. When the starter switch is closed, current flows through the cathodes, heating them and causing them to emit electrons. This electron emission makes the arc "strike" at much lower voltage than would be needed with unheated cathodes. When the starter switch is opened, the resulting inductive "kick" from the ballast starts the lamp.

All but two of the starters listed are of the glow-switch type. The FS-44 and FS-64 are thermal starters, and are recommended for the operation of the 40- and 100-watt lamps, respectively, for reliable starting down to 0°F.

Watch Dog starters provide automatic cut-off at end of lamp life. This eliminates blinking, and protects the ballast. When a new lamp is installed, a touch of the manual reset button makes the starter operative again.

The FS-400 starter is specially designed to minimize instant starting of 40-watt lamps on the lead circuits of tulamp ballasts, thus lengthening lamp life. It is particularly recommended where group relamping is practiced.

While lamp and ballast prices are slightly higher, these are offset by elimination of the starter and starter maintenance costs. Rapid-Start lamps are available in the 40-watt T-12 size, 16" Circline and in High Output and Power Groove lamps designed for greater current to secure higher light output.

4. *Instant Start (no starters)*

Through the use of higher-voltage ballasts, these lamps may be started without preheat. They are equipped with triple-coiled cathodes that afford in general the same long life obtained from the popular sizes of general line switch-start lamps. While they look just like switch-start lamps of the same wattage, instant-start lamps are not electrically interchangeable with them, for the cathode leads are short-circuited inside the lamp base to insure safety in use. Therefore instant-start lamps cannot be preheated in starter-type circuits. Further, general line lamps should not be used on instant-start ballasts or much shorter lamp life will result.

Instant-start lamps are available in 40-watt T-12 and 40-watt T-17 sizes. They are also available, on special order, in the 30-watt T-8 size.

5. *Slimline (instant start without starters)*

Slimline lamps combine all the advantages of the instant-start lamp with much greater convenience in handling and easier maintenance. The lamps are equipped with extra-strong single-pin bases that fit easily and solidly in rugged push-pull sockets. This combination makes lamp installation fast and easy.

In the eight foot sizes, slimlines are among the most efficient lamps made. In addition to increased efficiency, the longer length reduces the number of lamps and fixtures required in a given installation. This, together with the elimination of starters, reduces the amount of maintenance required in a fluorescent lighting system.

These advantages, together with the long trouble-free life offered by G-E slimline lamps assure continuing growth in popularity.

Slimline fluorescent are available in 42" and 64" lengths in the T-6 bulb size, in 72" and 96" lengths in T-8, and in 48", 72" and 96" lengths in the most popular T-12 diameter.

G-E FLUORESCENT LAMP COLORS

G-E Fluorescent Lamps are available in a range of strong colors and in several different "whites." The saturated colors — red, pink, gold, green and blue — are used for decorative effects while the whites serve for both decorative and general lighting purposes. All fluorescent lamps except gold and red are white when unlighted. Different phosphors produce the different colors when lamps are lighted.

White fluorescent lamps are designed to combine three elements important in lighting effects — (1) efficiency — most light per dollar; (2) color-rendering properties — the ability to bring out the beauty of colored materials and objects and (3) "Whiteness" — their appearance in relation to either natural outdoor daylight or the traditional artificial illumination such as filament lamps.

The choice among fluorescent "whites" always involves compromise among these three elements. Obtaining best color rendering properties necessitates reduction in efficiency. Choice of whiteness affects both efficiency and color rendering properties. The descriptions below outline the effects obtained from the most popular whites.

Cool White combines high efficiency with reasonably good color rendition. It is the most

widely used fluorescent lamp color in factories, offices and schools. It blends well with natural daylight.

Warm White provides the highest efficiency in white fluorescent lamps, it emphasizes orange, yellow and yellow-green at the expense of other colors. Generally used where highest efficiency is more important than color rendition.

De Luxe Cool White most closely simulates the appearance and color-rendering properties of natural daylight. It is widely used in stores such as supermarkets, florists, men's wear shops and other places where excellent color rendition of natural daylight is needed. Also used in factory and office installations where best appearance of colors is important.

Home-lite (formerly De Luxe Warm White) simulates the warm friendly effects of filament lighting in both "whiteness" and color rendering. Usually first choice in residence, restaurants, beauty parlors, department stores, bakeries and other places where "homelike" lighting effects are wanted.

Daylight, Soft White, White, are still available for replacement purposes in existing installations and for new installations where their appearance or color-rendering properties are particularly suitable.

BALLASTS FOR FLUORESCENT LAMPS



A



B

Since fluorescent lamps have a negative-resistance characteristic and the lamp voltage decreases as the current increases, the lamp will destroy itself unless the current is limited. This protection is provided by the "ballast" which usually takes the form of a choke coil. The ballast must be designed for the size and type of fluorescent lamp used, as well as for the voltage and frequency of the electrical system.

The life and light output ratings of fluorescent lamps are based on their use with ballasts providing proper operating characteristics. Ballasts that do not provide proper electrical values may substantially reduce either lamp life or light output, or both.



C



D

Single-Lamp Ballasts Using Starters

| Nominal Lamp Watts | G-E Catalog Number | Approx. Size, Inches |
|--------------------|--------------------|---|
| 6, 8 | 89G435 | 1 $\frac{3}{8}$ x 1 $\frac{3}{8}$ x 3 $\frac{1}{16}$ |
| 13 | 89G713 | 1 $\frac{3}{8}$ x 1 $\frac{3}{8}$ x 6 $\frac{1}{2}$ |
| 13 | 89G414 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 10 |
| 14, 15, 20 | 89G381 | 1 $\frac{3}{8}$ x 1 $\frac{3}{8}$ x 3 $\frac{1}{16}$ |
| 14 | 89G424 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 8 $\frac{1}{4}$ |
| 15 | 89G422 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 8 $\frac{1}{4}$ |
| 20 | 89G423 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 8 $\frac{1}{4}$ |
| 22 (circ.) | 89G499 | 1 $\frac{1}{16}$ x 1 $\frac{3}{8}$ x 3 $\frac{1}{16}$ |
| 25 | 89G482 | 1 $\frac{1}{4}$ x 1 $\frac{3}{8}$ x 3 $\frac{1}{16}$ |
| 30 | 89G704 | 1 $\frac{3}{8}$ x 1 $\frac{1}{16}$ x 6 $\frac{1}{2}$ |
| 30 | 89G706 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 9 $\frac{1}{2}$ |
| 32 (circ.) | 89G700 | 1 $\frac{3}{8}$ x 1 $\frac{1}{16}$ x 6 $\frac{1}{2}$ |
| 40 | 89G707 | 1 $\frac{3}{8}$ x 1 $\frac{1}{16}$ x 6 $\frac{1}{2}$ |
| 40 | 89G711 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 9 $\frac{1}{2}$ |
| 90, 100 | 89G603 | 2 $\frac{3}{8}$ x 3 $\frac{1}{8}$ x 11 $\frac{3}{4}$ |

Multiple Lamp Ballasts Using Starters

| | | |
|-------------|--------|--|
| (2) 15 | 89G428 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 10 |
| (2) 20 | 89G429 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 10 |
| (2) 30 | 89G780 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 9 $\frac{1}{2}$ |
| (2) 40 | 6G1000 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 9 $\frac{1}{2}$ |
| (2) 90-100 | 89G562 | 2 $\frac{3}{8}$ x 3 $\frac{1}{8}$ x 19 $\frac{1}{4}$ |
| *(4) 90-100 | 59G265 | 2 $\frac{3}{8}$ x 3 $\frac{1}{8}$ x 19 $\frac{1}{4}$ |

*For 240-280 volt circuits only.

Trigger Start and Rapid Start Ballasts — No Starters Required

| | | |
|-------------------|--------|--|
| 14-15 (T12) | 89G701 | 1 $\frac{3}{8}$ x 1 $\frac{1}{16}$ x 6 $\frac{1}{2}$ |
| 15 (T8), 20 (T12) | 89G702 | 1 $\frac{3}{8}$ x 1 $\frac{1}{16}$ x 6 $\frac{1}{2}$ |
| 22 | 89G322 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 6 $\frac{1}{2}$ |
| 32 | 89G332 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 6 $\frac{1}{2}$ |
| (2) 14, 15, 20 | 89G440 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 8 $\frac{1}{4}$ |
| 40 | 89G325 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 6 $\frac{1}{2}$ |
| 40 | 89G708 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 9 $\frac{1}{2}$ |
| (2) 40 | 89G545 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 9 $\frac{1}{2}$ |
| 40 (circ.) | 89G327 | 1 $\frac{1}{16}$ x 2 $\frac{3}{8}$ x 6 $\frac{1}{2}$ |

Slimline Lamp Ballasts — No Starters Required Approx. Power Factor 90%

| Lamp Size | Average Lamp Watts | G-E Catalog Number | Approx. Size, Inches |
|-----------|--------------------|--------------------|---|
| 42T6 | 25 | 89G580 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 9 $\frac{1}{2}$ |
| 42T6 | (2) 25 | 89G584 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 48T12 | 38 | 89G693 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 9 $\frac{1}{2}$ |
| 48T12 | (2) 38 | 89G628 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 48T12 | (2) 38 | 89G600 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 9 $\frac{1}{2}$ |
| 64T6 | 37 | 89G581 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 9 $\frac{1}{2}$ |
| 64T6 | (2) 37 | 89G586 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 72T8 | 36.5 | 89G581 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 9 $\frac{1}{2}$ |
| 72T8 | (2) 36.5 | 89G586 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 72T12 | 55 | 89G762 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 11 $\frac{3}{4}$ |
| 72T12 | (2) 55 | 89G490 | 2 $\frac{5}{8}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 72T12 | (2) 55 | 6G1010 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 11 $\frac{3}{4}$ |
| 96T8 | (2) 32 | 89G588 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 96T8 | 49 | 89G743 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 9 $\frac{1}{2}$ |
| 96T8 | (2) 49 | 89G589 | 2 $\frac{5}{8}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 96T8 | (2) 65 | 89G590 | 2 $\frac{5}{8}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 96T12 | 74 | 89G762 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 11 $\frac{3}{4}$ |
| 96T12 | (2) 74 | 89G490 | 2 $\frac{5}{8}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 96T12 | (2) 74 | 6G1010 | 1 $\frac{3}{4}$ x 3 $\frac{1}{8}$ x 11 $\frac{3}{4}$ |

High Output and Power-Groove Ballasts

| | | | |
|----------|-------|-------------------|---|
| 48T12/HO | 2-60 | 89G817 | 2 $\frac{3}{8}$ x 3 $\frac{1}{8}$ x 11 $\frac{3}{4}$ |
| 72T12/HO | 2-85 | 89G605 | 2 $\frac{5}{8}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |
| 96T12/HO | 2-105 | 89G836 | 2 $\frac{5}{8}$ x 3 $\frac{1}{8}$ x 16 $\frac{1}{16}$ |
| 48PG17 | 2-107 | 89G732 | 2 $\frac{5}{8}$ x 3 $\frac{1}{8}$ x 19 $\frac{1}{16}$ |
| 96PG17 | 2-200 | 89G754& 89G755 | 2 $\frac{5}{8}$ x 3 $\frac{1}{8}$ x 14 $\frac{5}{16}$ |

For a list of more than 100 ballasts, see LS-101, "Fluorescent Lamps and Auxiliary Equipments."

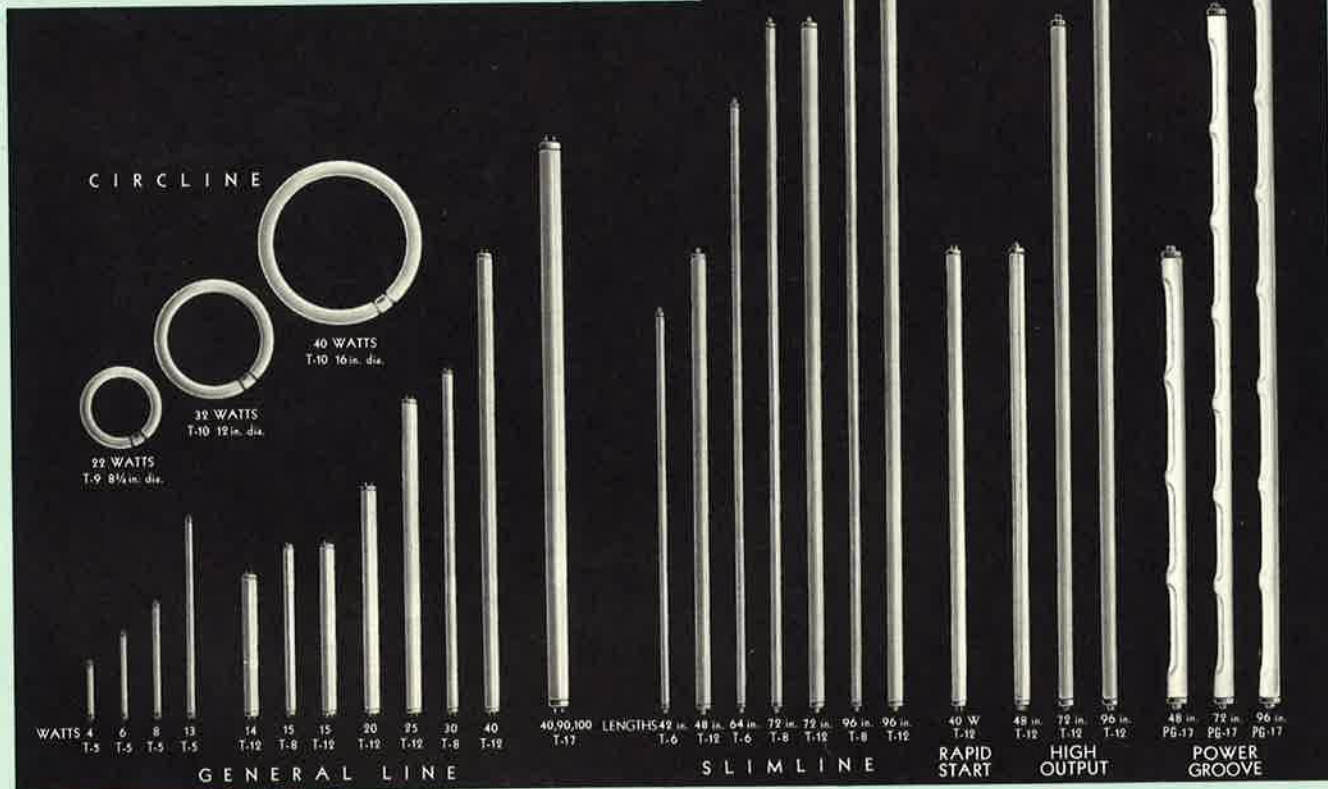
FLUORESCENT LAMP SUMMARY

Types, and Sizes Available

Illustrated are 29 standard lamps of different sizes and constructions which make up the line of fluorescent lamps. The availability of many of these in various spectral colors and design modifications for specialized operation adds up to more than 350 separate catalog listings.

The wattage range is from 4 to 200 watts nominally. Slimline types may be operated at different wattages, depending on the current rating of the ballast used. The light output for "white" light ranges from about 75 lumens to over 13,000 lumens at lamp efficiencies ranging from 20 to well over 70 lumens-per-watt. Actual output depends on the spectral quality of the

light, the operating current and voltage, as well as the temperature environment. For "colored" light, efficiency ranges from 1.5—4.5 lumens per watt for red, to 30—95 lumens per watt for green light.



GENERAL LINE

CIRCLINE

| Nominal Watts | 4 | 6 | 8 | 13 | 14 | 15 | 15 | 20 | 25 | 30 | 40 | 40 | 90 | 100 | 22 | 32 | 40 |
|--------------------|-----|-----|-----|------|------|------|------|------|------|------|------|------|------|------|------------|---------|---------|
| Length (Inches) | 6 | 9 | 12 | 21 | 15 | 18 | 18 | 24 | 33 | 36 | 48 | 60 | 60 | 60 | 8 1/4 dia. | 12 dia. | 16 dia. |
| Bulb* | T-5 | T-5 | T-5 | T-5 | T-12 | T-8 | T-12 | T-12 | T-12 | T-8 | T-12 | T-17 | T-17 | T-17 | T-9 | T-10 | T-10 |
| Average Lamp Watts | 3.8 | 5.8 | 7.9 | 13.0 | 14.0 | 15.0 | 14.1 | 19.7 | 26.0 | 30.0 | 39.0 | 41.0 | 90 | 99 | 21 | 31.5 | 39 |
| Lamp Current (Ma.) | 125 | 145 | 160 | 160 | 390 | 300 | 330 | 380 | 490 | 355 | 430 | 425 | 1550 | 1520 | 390 | 435 | 420 |
| Lamp Volts | 33 | 45 | 58 | 97 | 37.5 | 55 | 45.5 | 56 | 60 | 98 | 100 | 101 | 62 | 68 | 60 | 80 | 107 |
| Lumens, Cool White | 100 | 210 | 330 | 700 | 540 | 730 | 620 | 1000 | 1600 | 1890 | 2500 | 2500 | 5150 | 4850 | 930 | 1550 | 2200 |
| Lumens, Warm White | 105 | 220 | 340 | 710 | 570 | 760 | 650 | 1030 | 1660 | 1930 | 2600 | 2600 | 5300 | 5150 | 960 | 1600 | 2250 |

SLIMLINE

RAPID START

HIGH OUTPUT

| Length (Inches) | 42 | 48 | 64 | 72 | 72 | 96 | 96 |
|-----------------|------|------|------|------|------|------|------|
| Bulb Size | T-6 | T-12 | T-6 | T-8 | T-12 | T-8 | T-12 |
| Watts | 25.0 | | 37.0 | 36.5 | | 49.0 | |
| Volts | 145 | | 225 | 210 | | 285 | |
| Lumens (CW) | 1480 | | 2450 | 2550 | | 3550 | |
| Lumens (WW) | 1570 | | 2550 | 2650 | | 3600 | |
| Watts | | 38.0 | | | 55.0 | | 74.0 |
| Volts | | 97 | | | 145 | | 192 |
| Lumens (CW) | | 2300 | | | 3600 | | 5050 |
| Lumens (WW) | | 2400 | | | 3700 | | 5100 |

| Watts or Length | 40 watts | 48 inches | 72 inches | 96 inches |
|--------------------|------------|----------------|-----------|-----------|
| Base | Med. Bipin | Recessed D. C. | | |
| Avg. Lamp Watts | 39.0 | 60.0 | 85.0 | 105 |
| Lamp Current (Ma.) | 430 | 800 | 800 | 800 |
| Lamp Volts | 100 | 80 | 115 | 148 |
| Lumens, Cool White | 2500 | 3250 | 5200 | 7300 |
| Lumens, Warm White | 2600 | 3350 | 5350 | 7500 |

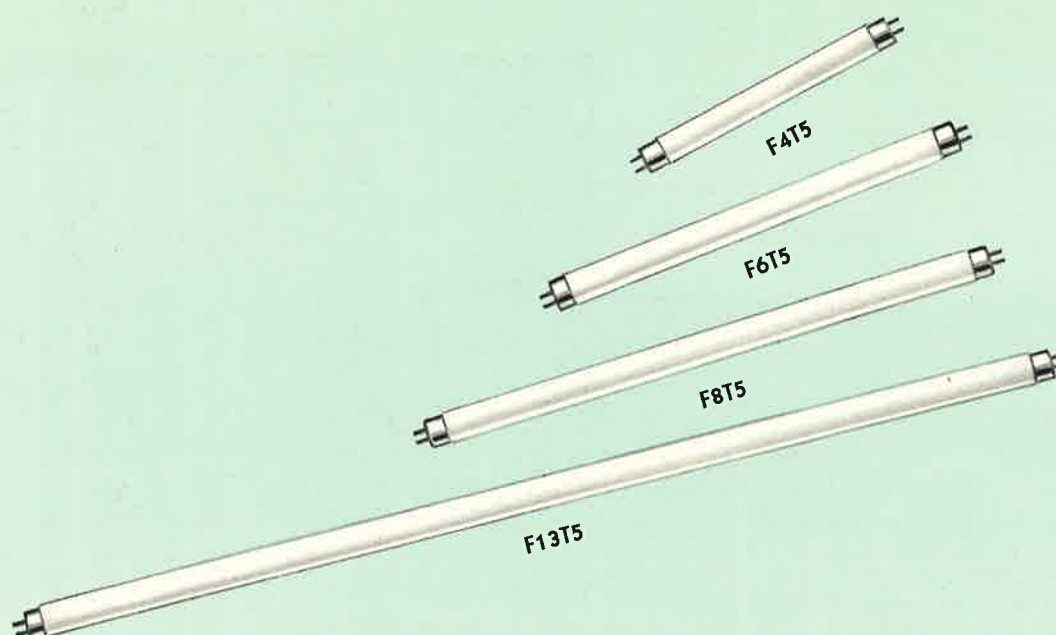
POWER GROOVE

| Length (inches) | 48 | 72 | 96 |
|--------------------|----------------|------|--------|
| Base | Recessed D. C. | | |
| Avg. Lamp Watts | 107 | 155 | 900 |
| Lamp Current (ma.) | 1500 | 1500 | 1500 |
| Lamp Volts | 84 | 120 | 160 |
| Lumens, Cool White | 6000 | 9300 | 13,000 |

Home-line Lamps

All "De Luxe Warm White" Fluorescent lamps are now identified as "Home-line" lamps.

G-E FLUORESCENT LAMPS



The 4-, 6-, 8-, and 13-watt T-5 fluorescent lamps are generally used where space for lamps is limited and where the inherent cool light and color quality of fluorescent is desired. In stores they are applied in niches, showcases, and shelving to enhance the function and appearance of miniature displays, signs and models. In indus-

trial plants they supply light locally for machine work, fine assembly, inspection, and other supplementary lighting applications. In offices they are built into business machines and similar devices for increased visibility of dials, scales, and keyboards.

FLUORESCENT LAMPS (FOR USE WITH STARTERS)

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length, Inches | Base | Description | Standard Package Quantity | Approx. Hours Life ^① | Approx. Initial Lumens ^② | Approx. Lumens at 40% Rtd. Ave. Life |
|----------------------------|--------------------|------|----------------|-----------|-------------|---------------------------|---------------------------------|-------------------------------------|--------------------------------------|
| F4T5/CW | 4 | T-5 | 6 | Min. Bip. | Cool White | 24 | 4000 | 100 | 60 |
| F6T5/CW | 6 | T-5 | 9 | Min. Bip. | Cool White | 24 | 6000 | 210 | 150 |
| F6T5/W | 6 | T-5 | 9 | Min. Bip. | White | 24 | 6000 | 220 | 155 |
| F8T5/CW | 8 | T-5 | 12 | Min. Bip. | Cool White | 24 | 6000 | 330 | 240 |
| F8T5/W | 8 | T-5 | 12 | Min. Bip. | White | 24 | 6000 | 340 | 250 |
| F13T5/CW | 13 | T-5 | 21 | Min. Bip. | Cool White | 24 | 6000 | 700 | 540 |

^① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours.

^② Approximate initial lumens after 100 hours operation.

Life and Lumen Output

The life and light output ratings of fluorescent lamps are based on their use with ballasts providing proper operating characteristics. Ballasts that do not provide proper electrical values may substantially reduce either lamp life or light output, or both.

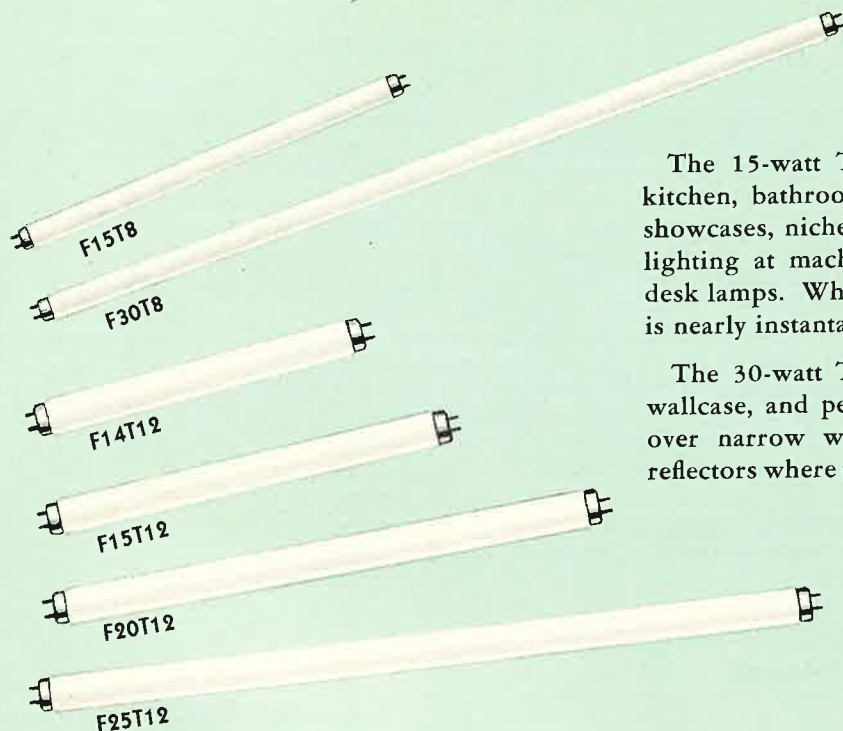
Ballasts certified as built to the specifications adopted by the Certified Ballast Manufacturers (CBM) do provide values that meet or exceed minimum requirements. This certification assures the user, without individual testing, that lamps will operate at values close to their ratings.

Lumen Output and efficiency values apply at the end of 100 hours operation, where measured

at 80°F ambient temperature and under specified test conditions.

Lamp Life — All life ratings are based on three burning hours per start. Less frequent starting tends to increase lamp life. When lamps are operated at six or twelve burning hours per start, average life is increased by 25% or 60% respectively. For continuous burning, average life is 2½ times the rated value. Since light output depreciates steadily as lamps are burned, greatest lighting value usually results when lamps are replaced before they reach their average life.

G-E FLUORESCENT LAMPS



The 15-watt T-8 lamp is used extensively in homes for kitchen, bathroom, and mirror lighting. In stores it lights showcases, niches, and signs. In industry it is used for local lighting at machines and work benches — also in portable desk lamps. When used with the trigger-start ballast, starting is nearly instantaneous.

The 30-watt T-8 lamp is applied in stores for showcase, wallcase, and perimeter lighting, and in homes for valances over narrow windows. It is used in polished parabolic reflectors where the diameter is advantageous for good control.

FLUORESCENT LAMPS (FOR USE WITH STARTERS)

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length, Inches | Base | Description | Standard Package Quantity | Approx. Hours Life ① | Approx. Initial Lumens ② | Approx. Lumens at 40% Rtd. Ave. Life |
|----------------------------|--------------------|------|----------------|-----------|--------------------|---------------------------|----------------------|--------------------------|--------------------------------------|
| F15T8/CW | 15 | T-8 | 18 | Med. Bip. | Cool White | 24 | 7500 | 730 | 590 |
| F15T8/CWX | 15 | T-8 | 18 | Med. Bip. | De Luxe Cool White | 24 | 7500 | 500 | 375 |
| F15T8/WWX | 15 | T-8 | 18 | Med. Bip. | Home-line | 24 | 7500 | 500 | 375 |
| F15T8/D | 15 | T-8 | 18 | Med. Bip. | Daylight | 24 | 7500 | 680 | 550 |
| F15T8/W | 15 | T-8 | 18 | Med. Bip. | White | 24 | 7500 | 760 | 615 |
| F15T8/WW | 15 | T-8 | 18 | Med. Bip. | Warm White | 24 | 7500 | 760 | 615 |
| F15T8/SW | 15 | T-8 | 18 | Med. Bip. | Soft White | 24 | 7500 | 470 | 350 |
| F15T8/B | 15 | T-8 | 18 | Med. Bip. | Blue | 24 | 7500 | ..... | ..... |
| F15T8/G | 15 | T-8 | 18 | Med. Bip. | Green | 24 | 7500 | ..... | ..... |
| F15T8/GO | 15 | T-8 | 18 | Med. Bip. | Gold | 24 | 7500 | ..... | ..... |
| F15T8/PK | 15 | T-8 | 18 | Med. Bip. | Pink | 24 | 7500 | ..... | ..... |
| F15T8/R | 15 | T-8 | 18 | Med. Bip. | Red | 24 | 7500 | ..... | ..... |
| F30T8/CW | 30 | T-8 | 36 | Med. Bip. | Cool White | 24 | 7500 | 1890 | 1570 |
| F30T8/CWX | 30 | T-8 | 36 | Med. Bip. | De Luxe Cool White | 24 | 7500 | 1200 | 900 |
| F30T8/WWX | 30 | T-8 | 36 | Med. Bip. | Home-line | 24 | 7500 | 1200 | 900 |
| F30T8/D | 30 | T-8 | 36 | Med. Bip. | Daylight | 24 | 7500 | 1740 | 1440 |
| F30T8/W | 30 | T-8 | 36 | Med. Bip. | White | 24 | 7500 | 1930 | 1600 |
| F30T8/WW | 30 | T-8 | 36 | Med. Bip. | Warm White | 24 | 7500 | 1930 | 1600 |
| F30T8/SW | 30 | T-8 | 36 | Med. Bip. | Soft White | 24 | 7500 | 1150 | 870 |
| F30T8/B | 30 | T-8 | 36 | Med. Bip. | Blue | 24 | 7500 | ..... | ..... |
| F30T8/G | 30 | T-8 | 36 | Med. Bip. | Green | 24 | 7500 | ..... | ..... |
| F30T8/GO | 30 | T-8 | 36 | Med. Bip. | Gold | 24 | 7500 | ..... | ..... |
| F30T8/PK | 30 | T-8 | 36 | Med. Bip. | Pink | 24 | 7500 | ..... | ..... |
| F30T8/R | 30 | T-8 | 36 | Med. Bip. | Red | 24 | 7500 | ..... | ..... |

① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours.

② Approximate initial lumens after 100 hours operation.

G-E FLUORESCENT LAMPS

The 14-watt T-12 lamp is used for supplementary lighting in stores and industry. It is applied where space does not permit use of the longer 15-watt lamp. It has been employed in portable lamps using a low-wattage filament lamp for a ballast.

The 15-watt T-12 lamp has a lower bulb-brightness than the 15T8 lamp for about the same amount of light. It is preferred over the T-8 lamp if used without shielding as is sometimes done for bathroom mirror lighting and some other applications. Its many uses paralleled those of the 15-watt T-8.

The 20-watt T-12 lamp is one of the most widely used fluorescent lamps. It is employed in home fixtures for lighting in kitchens, bathrooms, basements, and recreation rooms. It is used in window valances and under shelving and cupboards for decorative and utilitarian lighting. It may be used to light closets, washrooms and small areas. It is also employed for supplementary lighting in offices and factories. In stores it lights fitting mirrors, niches, and wallcase displays. It may be operated by trigger-start ballasts.

The 25-watt T-12 33-inch lamp is the longest T-12 lamp which can be operated from 120 volts a-c with a simple choke ballast. It is principally used in homes, either in general lighting fixtures or built into window valances and kitchen work spaces.

FLUORESCENT LAMPS (FOR USE WITH STARTERS)

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length, Inches | Base | Description | Standard Package Quantity | Approx. Hours Life ① | Approx. Initial Lumens ② | Approx. Lumens At 40% Rtd. Ave. Life |
|----------------------------------|--------------------------|------|-------------------|-----------|--------------------|---------------------------------|-------------------------------|-----------------------------------|---|
| F14T12/CW | 14 | T-12 | 15 | Med. Bip. | Cool White | 24 | 6000 | 540 | 420 |
| F14T12/CWX | 14 | T-12 | 15 | Med. Bip. | De Luxe Cool White | 24 | 6000 | 390 | 280 |
| F14T12/WWX | 14 | T-12 | 15 | Med. Bip. | Home-line | 24 | 6000 | 390 | 280 |
| F14T12/D | 14 | T-12 | 15 | Med. Bip. | Daylight | 24 | 6000 | 500 | 390 |
| F14T12/W | 14 | T-12 | 15 | Med. Bip. | White | 24 | 6000 | 570 | 445 |
| F14T12/WW | 14 | T-12 | 15 | Med. Bip. | Warm White | 24 | 6000 | 570 | 445 |
| F14T12/W/1 | 14 | T-12 | 15 | Med. Bip. | White③ | 24 | 6000 | 570 | ..... |
| F15T12/CW | 15 | T-12 | 18 | Med. Bip. | Cool White | 24 | 7500 | 620 | 520 |
| F15T12/CWX | 15 | T-12 | 18 | Med. Bip. | De Luxe Cool White | 24 | 7500 | 435 | 330 |
| F15T12/WWX | 15 | T-12 | 18 | Med. Bip. | Home-line | 24 | 7500 | 435 | 330 |
| F15T12/D | 15 | T-12 | 18 | Med. Bip. | Daylight | 24 | 7500 | 570 | 460 |
| F15T12/W | 15 | T-12 | 18 | Med. Bip. | White | 24 | 7500 | 650 | 550 |
| F15T12/WW | 15 | T-12 | 18 | Med. Bip. | Warm White | 24 | 7500 | 650 | 550 |
| F20T12/CW | 20 | T-12 | 24 | Med. Bip. | Cool White | 24 | 7500 | 1000 | 870 |
| F20T12/CWX | 20 | T-12 | 24 | Med. Bip. | De Luxe Cool White | 24 | 7500 | 690 | 555 |
| F20T12/WWX | 20 | T-12 | 24 | Med. Bip. | Home-line | 24 | 7500 | 690 | 555 |
| F20T12/D | 20 | T-12 | 24 | Med. Bip. | Daylight | 24 | 7500 | 920 | 770 |
| F20T12/W | 20 | T-12 | 24 | Med. Bip. | White | 24 | 7500 | 1030 | 900 |
| F20T12/WW | 20 | T-12 | 24 | Med. Bip. | Warm White | 24 | 7500 | 1030 | 900 |
| F20T12/SW | 20 | T-12 | 24 | Med. Bip. | Soft White | 24 | 7500 | 680 | 540 |
| F20T12/B | 20 | T-12 | 24 | Med. Bip. | Blue | 24 | 7500 | ..... | ..... |
| F20T12/G | 20 | T-12 | 24 | Med. Bip. | Green | 24 | 7500 | ..... | ..... |
| F20T12/GO | 20 | T-12 | 24 | Med. Bip. | Gold | 24 | 7500 | ..... | ..... |
| F20T12/PK | 20 | T-12 | 24 | Med. Bip. | Pink | 24 | 7500 | ..... | ..... |
| F20T12/R | 20 | T-12 | 24 | Med. Bip. | Red | 24 | 7500 | ..... | ..... |
| F20T12/CW/1 | 20 | T-12 | 24 | Med. Bip. | Cool White③ | 24 | ..... | ..... | ..... |
| F20T12/D/1 | 20 | T-12 | 24 | Med. Bip. | Daylight③ | 24 | ..... | ..... | ..... |
| F25T12/CW/33 | 25 | T-12 | 33 | Med. Bip. | Cool White | 24 | 7500 | 1600 | 1380 |
| F25T12/WWX/33 | 25 | T-12 | 33 | Med. Bip. | Home-line | 24 | 7500 | 1130 | 900 |
| F25T12/D/33 | 25 | T-12 | 33 | Med. Bip. | Daylight | 24 | 7500 | 1470 | 1270 |

① Life under specified test conditions with lamps turned off and restarted no often than once every 3 burning hours.

② D. C. Operation.

③ Approximate initial lumens after 100 hours operation.

All G-E Fluorescent lamps should be used only with auxiliary equipment designed to produce proper electrical values. Unless otherwise noted, ratings apply to operation in a-c circuits. Lamps may be burned in any position.

G-E FLUORESCENT LAMPS

F40T12

F100T12

The 40-watt T-12 preheat lamp is used extensively for general lighting in every field of application. It is employed in strips or channels for lighting valances in homes and stores, for display fixtures, show windows, and hundreds of other services. The 90-watt T-17 lamps produce more light per foot than any other preheat lamps. The 90-watt lamp is used in industry for general lighting and also in offices, stores and show windows. Specially designed low temperature lamps are recommended for use in temper-

atures from 50°F to 0°F.

INSTANT START LAMPS

Instant-start types reduce maintenance and insure more reliable starting when used outdoors in cold weather.

The 40-watt T-17 lamp has a comparatively low surface brightness. It is used for high-quality lighting installations in schools and offices and for special industry applications where it is important to minimize direct and reflected glare.

FLUORESCENT LAMPS (FOR USE WITH STARTERS)

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length, Inches | Base | Description | Standard Package Quantity | Approx. Hours Life ① | Approx. Initial Lumens ② | Approx. Lumens At 40% Rtd. Ave. Life |
|----------------------------|--------------------|------|----------------|-----------|--------------------|---------------------------|----------------------|--------------------------|--------------------------------------|
| F40T12/CW | 40 | T-12 | 48 | Med. Bip. | Cool White | 24 | 7500 | 2500 | 2200 |
| F40T12/CWX | 40 | T-12 | 48 | Med. Bip. | De Luxe Cool White | 24 | 7500 | 1840 | 1470 |
| F40T12/W/WX | 40 | T-12 | 48 | Med. Bip. | Home-line | 24 | 7500 | 1840 | 1470 |
| F40T12/D | 40 | T-12 | 48 | Med. Bip. | Daylight | 24 | 7500 | 2300 | 2000 |
| F40T12/W | 40 | T-12 | 48 | Med. Bip. | White | 24 | 7500 | 2600 | 2250 |
| F40T12/W/W | 40 | T-12 | 48 | Med. Bip. | Warm White | 24 | 7500 | 2600 | 2250 |
| F40T12/SW | 40 | T-12 | 48 | Med. Bip. | Soft White | 24 | 7500 | 1700 | 1370 |
| F40T12/B | 40 | T-12 | 48 | Med. Bip. | Blue | 24 | 7500 | 1120 | ..... |
| F40T12/G | 40 | T-12 | 48 | Med. Bip. | Green | 24 | 7500 | 3000 | ..... |
| F40T12/GO | 40 | T-12 | 48 | Med. Bip. | Gold | 24 | 7500 | 1500 | ..... |
| F40T12/PK | 40 | T-12 | 48 | Med. Bip. | Pink | 24 | 7500 | 1120 | ..... |
| F40T12/R | 40 | T-12 | 48 | Med. Bip. | Red | 24 | 7500 | 150 | ..... |
| F40T12/W/LT | 40 | T-12 | 48 | Med. Bip. | White | 24 | 6000 | 2600 | ..... |
| F90T17/CW | 90 | T-17 | 60 | Mog. Bip. | Cool White | 12 | 7500 | 5150 | 4250 |
| F90T17/D | 90 | T-17 | 60 | Mog. Bip. | Daylight | 12 | 7500 | 4800 | 4000 |
| F90T17/W | 90 | T-17 | 60 | Mog. Bip. | White | 12 | 7500 | 5300 | 4400 |

INSTANT START FLUORESCENT LAMPS (NO STARTERS USED) ③

| | | | | | | | | | |
|--------------|----|------|----|-----------|------------|----|------|------|------|
| F40T12/CW/IS | 40 | T-12 | 48 | Med. Bip. | Cool White | 24 | 7500 | 2500 | 2200 |
| F40T17/CW/IS | 40 | T-17 | 60 | Mog. Bip. | Cool White | 12 | 6000 | 2500 | 2200 |

① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours.

② Approximate initial lumens after 100 hours operation.

③ The pins of these lamps are short circuited inside the end caps and lamp will not operate on preheat ballast circuits.

G-E RF FLUORESCENT LAMPS

F85T10

RF lamps have special bases and are available for replacement in RF equipment.

RF FLUORESCENT LAMPS

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Base | Description | Standard Package Quantity | Approx. Hours Life | Approx. Initial Lumens | Approx. Lumens At 40% Rtd. Ave. Life |
|----------------------------|--------------------|------|-------------|------------------|---------------------------|--------------------|------------------------|--------------------------------------|
| F85T10/IW | 85 | T-10 | 3 & 2 prong | Industrial White | 24 | 7500 | 4000 | 3000 |

G-E RAPID START FLUORESCENT LAMPS

F100T12

RAPID START FLUORESCENT LAMPS (NO STARTERS USED)

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length Inches | Base | Description | Std. Package Qty. | Approx. Hours Life | Approx. Initial Lumens | Approx. Lumens at 40% Rtd. Ave. Life |
|----------------------------|--------------------|------|---------------|------------|--------------------|-------------------|--------------------|------------------------|--------------------------------------|
| F40T12/CW/RS | 40 | T-12 | 48 | Med. Bipin | Cool White | 24 | 7500 | 2500 | 2200 |
| F40T12/CWX/RS | 40 | T-12 | 48 | Med. Bipin | De Luxe Cool White | 24 | 7500 | 1840 | 1470 |
| F40T12/WWX/RS | 40 | T-12 | 48 | Med. Bipin | De Luxe Warm White | 24 | 7500 | 1840 | 1470 |
| F40T12/D/RS | 40 | T-12 | 48 | Med. Bipin | Daylight | 24 | 7500 | 2300 | 2000 |
| F40T12/W/RS | 40 | T-12 | 48 | Med. Bipin | White | 24 | 7500 | 2600 | 2250 |
| F40T12/WW/RS | 40 | T-12 | 48 | Med. Bipin | Warm White | 24 | 7500 | 2600 | 2250 |
| F40T11/SW/RS | 40 | T-12 | 48 | Med. Bipin | Soft White | 24 | 7500 | 1700 | 1370 |
| F40T12/B/RS | 40 | T-12 | 48 | Med. Bipin | Blue | 24 | 7500 | 1120 | ..... |
| F40T12/G/RS | 40 | T-12 | 48 | Med. Bipin | Green | 24 | 7500 | 3000 | ..... |
| F40T12/GO/RS | 40 | T-12 | 48 | Med. Bipin | Gold | 24 | 7500 | 1500 | ..... |
| F40T12/PK/RS | 40 | T-12 | 48 | Med. Bipin | Pink | 24 | 7500 | 1120 | ..... |
| F40T12/R/RS | 40 | T-12 | 48 | Med. Bipin | Red | 24 | 7500 | 150 | ..... |

Rapid Start 40-watt T-12 fluorescent lamps simplify lighting maintenance for the user and give, in effect, instant starting at costs comparable to those of the 40-watt preheat lamp. Starters are eliminated from the electrical circuit. This is accomplished with a cathode design in the lamp somewhat different from that of the preheat lamp and with a ballast having low-voltage windings which apply heating to the cathodes at starting and during operation. Rated lamp life and light output are the same as for the preheat.

Dimming — 40-watt T-12 rapid start lamps can be dimmed from full brightness to nearly full blackout. There are two models of G-E

thyatron dimmers: Model 9T63Y6001 for 110-125-volt circuits, and Model 9T63Y6000 for 228-250-volt circuit. Up to 32 lamps can be dimmed with either model.

A simplified dimming circuit, lower in cost and somewhat less versatile, is also in use; controls for this circuit are available from manufacturers of variable-voltage transformers.

Flashing — Special ballasts similar to the dimming ballasts, but providing somewhat higher cathode-heating current, have been designed for flashing rapid start and high output lamps. Lamp life in flashing service is not yet established but is expected to reach normal rated values.

G-E HIGH OUTPUT AND POWER-GROOVE LAMPS

HIGH OUTPUT LAMPS

The high output line of T12 lamps (24-in. to 96-in.) operates at 800-1000 ma. Since the lamps are of rapid start design, two electrical contacts are required at each base. The recessed double contact base was developed to meet this requirement and, at the same time, to eliminate any hazard from electrical shock.

The high output rapid start lamp gives about 40 per cent more light than the 96T12 slimline or 40-watt lamp. Because of the higher current load and thus higher bulb wall temperature, this lamp performs best in ventilated fixtures. Typical open-top fixtures that allow substantial amounts of upward light provide excellent ventilation. Efficient surface-mounted and recessed fixtures have also been developed.

Because of the higher bulb wall temperature, the high output lamps perform better in low temperature applications than 430-ma. lamps.

POWER GROOVE LAMPS

Still another step in higher output fluorescent

lamps is the Power Groove lamp. This lamp has a U- or crescent-shaped cross-section. The exciting ultraviolet radiation produced within the bulb has a shorter distance to travel before striking the fluorescent material or phosphor than it would have from the center of a corresponding bulb of circular cross section. The full benefit of the greater amount of ultraviolet radiation generated is obtained with the Power Groove construction. Less opportunity is provided for reabsorption of this radiation by the mercury vapor before it strikes the phosphor. The "rails" along the grooves serve to keep the mercury pressure inside the bulb near the optimum value, by providing cool spots, which condense out excessive mercury vapor. The bridges between the grooves assure adequate bulb strength.

Like the high output lamp, the Power Groove lamp maintains its light output well at low temperatures. Enclosed fixtures will provide maximum output in most low temperature applications.

G-E HIGH OUTPUT FLUORESCENT LAMPS



F48T12/CW/HO



F72T12/CW/HO



F96T12/CW/HO



F100T12/CW/HO

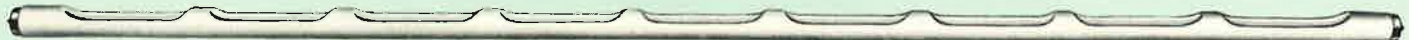
G-E POWER GROOVE FLUORESCENT LAMPS



F48PG17/CW



F72PG17/CW



F96PG17/CW

This new lamp will provide more economical lighting in many applications. It will find wide use for general lighting in stores, offices and industrial areas.

With this lamp, much higher lighting levels can be reached with the same number of fixtures, and at considerably lower initial cost per footcandle.

Many high-bay areas, now using filament or mercury, now can gain the advantages of fluorescent at favorable maintenance costs.

Power-Groove offers the opportunity to double present lighting levels from valances, coves, and

other architectural elements, where the maximum light is needed — but where only a limited number of lamps can be used.

In outdoor applications—street lighting, flood-lighting, sign lighting, building front lighting, etc. the new Power-Groove lamps offer even greater advantages. In addition to doubling the light per lamp—meaning higher lighting levels and brighter signs—the new lamps will maintain their light well at low temperatures.

The Power-Groove lamps are not interchangeable with any other lamps. New ballasts and lamp-holders are required.

HIGH OUTPUT FLUORESCENT LAMPS (NO STARTERS USED)

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length, Inches | Base | Description ① | Standard Package Quantity | Approx. Hours Life ② | Approx. Initial Lumens ③ | Approx. Lumens at 40 % Rtd. Ave. Life |
|----------------------------|--------------------|------|----------------|--------------|-------------------------|---------------------------|----------------------|--------------------------|---------------------------------------|
| F48T12/CW/HO | 60 | T-12 | 48 | Recessed | Cool White | 24 | 7500 | 3250 | ..... |
| F48T12/WW/HO | 60 | T-12 | 48 | | Warm White | 24 | 7500 | 3350 | ..... |
| F72T12/CW/HO | 85 | T-12 | 72 | Double Cont. | Cool White | 12 | 7500 | 5200 | ..... |
| F72T12/WW/HO | 85 | T-12 | 72 | | Warm White | 12 | 7500 | 5350 | ..... |
| F100T12/CW/HO | 100 | T-12 | 72 | Mog. Bipin | Cool Wh. Street Lt. Lp. | 12 | 7500④ | 5700 | 4550 |
| F96T12/CW/HO | 105 | T-12 | 96 | Recessed | Cool White | 12 | 7500 | 7300 | 6200 |
| F96T12/WW/HO | 105 | T-12 | 96 | | Warm White | 12 | 7500 | 7500 | ..... |
| F96T12/CWX/HO | 105 | T-12 | 96 | Double Cont. | De Luxe Cool White | 12 | 7500 | 5100 | ..... |
| F96T12/WWX/HO | 105 | T-12 | 96 | | Home-line | 12 | 7500 | 5100 | ..... |

POWER GROOVE FLUORESCENT LAMPS (NO STARTERS USED)

| | | | | | | | | | |
|------------|-----|-------|----|----------------|------------|----|-------|-------|-------|
| F48PG17/CW | 107 | PG-17 | 48 | Recessed D. C. | Cool White | 12 | ..... | 6000 | ..... |
| F72PG17/CW | 155 | PG-17 | 72 | Recessed D. C. | Cool White | 8 | ..... | 9300 | ..... |
| F96PG17/CW | 200 | PG-17 | 96 | Recessed D. C. | Cool White | 8 | ..... | 13000 | ..... |

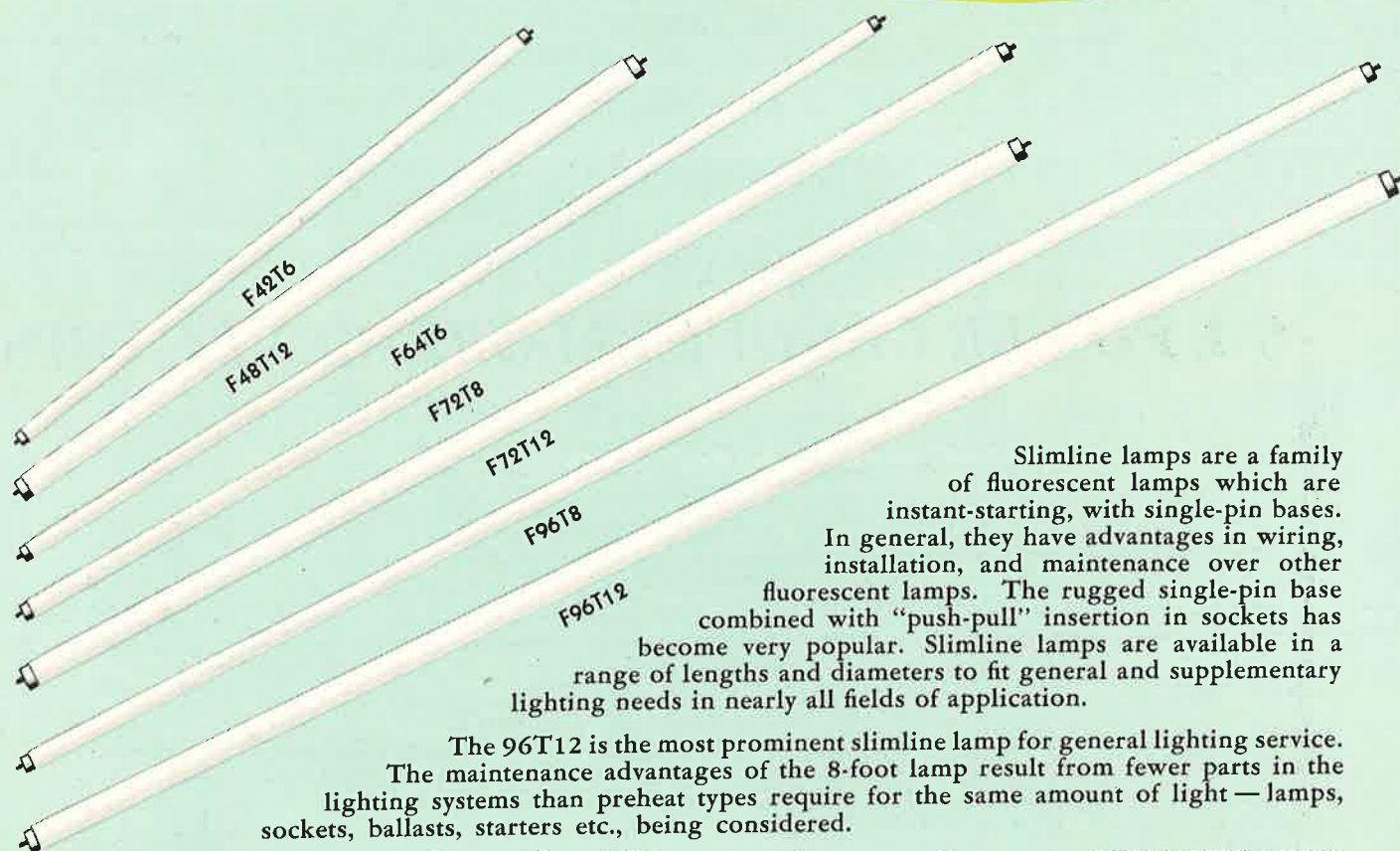
① This lamp is designed and rated for operation in supplementary cathode preheat circuits, for which specifications are available from the lamp manufacturer.

② Life under specified test conditions with lamps turned off and restarted no oftener than once every three burning hours.

③ Approximate initial lumens after 100 hours operation.

④ Life under specified test conditions with lamps turned off and restarted no oftener than once every 10 burning hours.

G-E SLIMLINE FLUORESCENT LAMPS



Slimline lamps are a family of fluorescent lamps which are instant-starting, with single-pin bases. In general, they have advantages in wiring, installation, and maintenance over other fluorescent lamps. The rugged single-pin base combined with "push-pull" insertion in sockets has become very popular. Slimline lamps are available in a range of lengths and diameters to fit general and supplementary lighting needs in nearly all fields of application.

The 96T12 is the most prominent slimline lamp for general lighting service. The maintenance advantages of the 8-foot lamp result from fewer parts in the lighting systems than preheat types require for the same amount of light — lamps, sockets, ballasts, starters etc., being considered.

The 72T12 and 48T12 are 6- and 4-foot companions, respectively, of the 96T12 which permit finishing out the ends of continuous rows where the 8-foot lamp is used. These lamps are also used for general lighting where shorter fixture lengths are desired for scale or to fit an architectural module.

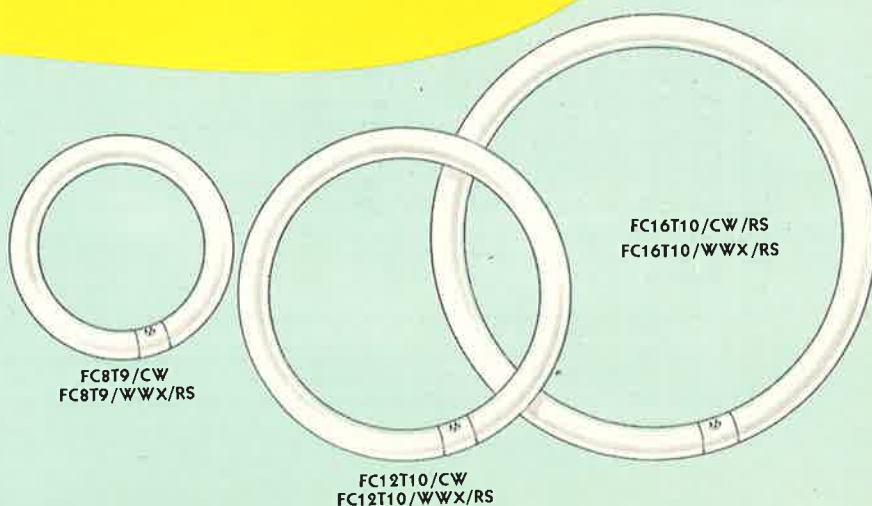
The 96T8 and 72T8 are appropriate for use in fixtures of thin, unobtrusive design. They may be conveniently concealed in coves, coffers, or other restricted areas. Their operation at one of three current ratings, determined by the rating of the ballast used, gives considerable range in choice of lighting level and fixture brightness.

The 42T6 and 64T6 are designed to fit the standard 4-foot and 6-foot store showcases. Their $\frac{3}{4}$ -inch diameter means minimum visual obstruction for all types of displays. The small diameter also permits accurate control with polished, concentrating reflectors for wallcase, show window, cove, wall or mural lighting and many other specialized applications.

Slimline Lamps of all lengths are popular for use in illuminating outdoor plastic signs.

G-E CIRCLINE FLUORESCENT LAMPS

Circline fluorescent lamps are now available in three diameters. They are widely used in home lighting fixtures and portable lamps. They are also used for decorative lighting in restaurants, theatres, lobbies, lounges, and other commercial areas. They are adapted for some inspection processes in industry. The 8- and 12-inch diameter lamps may be operated on trigger-start ballasts.



SLIMLINE FLUORESCENT LAMPS (INSTANT START)

T-6 Approx. 3/4" Diameter

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length, Inches | Base | Description | Standard Package Quantity | Approx. Hours Life ① | Approx. Initial Lumens ② | Approx. Lumens at 40% Rtd. Ave. Life |
|----------------------------|--------------------|------|----------------|------------|--------------------|---------------------------|----------------------|--------------------------|--------------------------------------|
| F42T6/CW | 17.5-32.5 | T-6 | 42 | Single Pin | Cool White | 24 | 7500 | 1480 | 1230 |
| F42T6/CWX | 17.5-32.5 | T-6 | 42 | Single Pin | De Luxe Cool White | 24 | 7500 | 1050 | 800 |
| F42T6/WWX | 17.5-32.5 | T-6 | 42 | Single Pin | Home-line | 24 | 7500 | 1050 | 800 |
| F42T6/W | 17.5-32.5 | T-6 | 42 | Single Pin | White | 24 | 7500 | 1570 | 1300 |
| F42T6/WW | 17.5-32.5 | T-6 | 42 | Single Pin | Warm White | 24 | 7500 | 1570 | 1300 |
| F42T6/SW | 17.5-32.5 | T-6 | 42 | Single Pin | Soft White | 24 | 7500 | 1000 | 760 |
| F64T6/CW | 25.5-48 | T-6 | 64 | Single Pin | Cool White | 24 | 7500 | 2450 | 2000 |
| F64T6/CWX | 25.5-48 | T-6 | 64 | Single Pin | De Luxe Cool White | 24 | 7500 | 1740 | 1380 |
| F64T6/WWX | 25.5-48 | T-6 | 64 | Single Pin | Home-line | 24 | 7500 | 1740 | 1380 |
| F64T6/W | 25.5-48 | T-6 | 64 | Single Pin | White | 24 | 7500 | 2550 | 2100 |
| F64T6/WW | 25.5-48 | T-6 | 64 | Single Pin | Warm White | 24 | 7500 | 2550 | 2100 |
| F64T6/SW | 25.5-48 | T-6 | 64 | Single Pin | Soft White | 24 | 7500 | 1660 | 1250 |

T-8 Approx. 1" Diameter

| | | | | | | | | | |
|-----------|-----------|-----|----|------------|--------------------|----|------|------|------|
| F72T8/CW | 24.5-48.5 | T-8 | 72 | Single Pin | Cool White | 24 | 7500 | 2550 | 2050 |
| F72T8/CWX | 24.5-48.5 | T-8 | 72 | Single Pin | De Luxe Cool White | 24 | 7500 | 1810 | 1460 |
| F72T8/WWX | 24.5-48.5 | T-8 | 72 | Single Pin | Home-line | 24 | 7500 | 1810 | 1460 |
| F72T8/W | 24.5-48.5 | T-8 | 72 | Single Pin | White | 24 | 7500 | 2650 | 2350 |
| F72T8/WW | 24.5-48.5 | T-8 | 72 | Single Pin | Warm White | 24 | 7500 | 2650 | 2350 |
| F96T8/CW | 32-65 | T-8 | 96 | Single Pin | Cool White | 24 | 7500 | 3550 | 3150 |
| F96T8/CWX | 32-65 | T-8 | 96 | Single Pin | De Luxe Cool White | 24 | 7500 | 2550 | 2050 |
| F96T8/WWX | 32-65 | T-8 | 96 | Single Pin | Home-line | 24 | 7500 | 2550 | 2050 |
| F96T8/W | 32-65 | T-8 | 96 | Single Pin | White | 24 | 7500 | 3600 | 3150 |
| F96T8/WW | 32-65 | T-8 | 96 | Single Pin | Warm White | 24 | 7500 | 3600 | 3150 |
| F96T8/D | 32-65 | T-8 | 96 | Single Pin | Daylight | 24 | 7500 | 3250 | 2900 |

③ Approximate initial lumens for F42T6 and F72T8 lamps are for operation at 200 ma.

T-12 Approx. 1 1/2" Diameter

| | | | | | | | | | |
|------------|----|------|----|------------|--------------------|----|------|------|------|
| F48T12/CW | 38 | T-12 | 48 | Single Pin | Cool White | 24 | 7500 | 2300 | 2000 |
| F48T12/CWX | 38 | T-12 | 48 | Single Pin | De Luxe Cool White | 24 | 7500 | 1700 | 1460 |
| F48T12/WWX | 38 | T-12 | 48 | Single Pin | Home-line | 24 | 7500 | 1700 | 1460 |
| F48T12/W | 38 | T-12 | 48 | Single Pin | White | 24 | 7500 | 2400 | 2100 |
| F48T12/WW | 38 | T-12 | 48 | Single Pin | Warm White | 24 | 7500 | 2400 | 2100 |
| F48T12/D | 38 | T-12 | 48 | Single Pin | Daylight | 24 | 7500 | 2150 | 1850 |
| F72T12/CW | 55 | T-12 | 72 | Single Pin | Cool White | 12 | 7500 | 3600 | 3150 |
| F72T12/CWX | 55 | T-12 | 72 | Single Pin | De Luxe Cool White | 12 | 7500 | 2600 | 2200 |
| F72T12/WWX | 55 | T-12 | 72 | Single Pin | Home-line | 12 | 7500 | 2600 | 2200 |
| F72T12/W | 55 | T-12 | 72 | Single Pin | White | 12 | 7500 | 3700 | 3200 |
| F72T12/WW | 55 | T-12 | 72 | Single Pin | Warm White | 12 | 7500 | 3700 | 3200 |
| F96T12/CW | 74 | T-12 | 96 | Single Pin | Cool White | 12 | 7500 | 5050 | 4500 |
| F96T12/CWX | 74 | T-12 | 96 | Single Pin | De Luxe Cool White | 12 | 7500 | 3750 | 3200 |
| F96T12/WWX | 74 | T-12 | 96 | Single Pin | Home-line | 12 | 7500 | 3750 | 3200 |
| F96T12/W | 74 | T-12 | 96 | Single Pin | White | 12 | 7500 | 5100 | 4550 |
| F96T12/WW | 74 | T-12 | 96 | Single Pin | Warm White | 12 | 7500 | 5100 | 4550 |
| F96T12/SW | 74 | T-12 | 96 | Single Pin | Soft White | 12 | 7500 | 3400 | .... |
| F96T12/D | 74 | T-12 | 96 | Single Pin | Daylight | 12 | 7500 | 4650 | 4100 |

FLUORESCENT CIRCLINE LAMPS (RAPID START*)

| Lamp Ordering Abbreviation | Nominal Lamp Watts | Bulb | Length, Inches | Base | Description | Standard Package Quantity | Approx. Hours Life ① | Approx. Initial Lumens ② | Approx. Lumens at 40% Rtd. Ave. Life |
|----------------------------|--------------------|------|----------------|-------|-------------|---------------------------|----------------------|--------------------------|--------------------------------------|
| FC8T9/CW | 22 | T-9 | Outside | 4-Pin | Cool White | 12 | 7500 | 930 | 710 |
| FC8T9/WWX | 22 | T-9 | Dia. 8 3/4" | 4-Pin | Home-line | 12 | 7500 | 690 | .... |
| FC12T10/CW | 22 | T-10 | Outside | 4-Pin | Cool White | 12 | 7500 | 1550 | 1250 |
| FC12T10/WWX | 32 | T-10 | Dia. 12" | 4-Pin | Home-line | 12 | 7500 | 1100 | 820 |
| FC16T10/CW | 40 | T-10 | Outside | 4-Pin | Cool White | 12 | 7500 | 2200 | 1850 |
| FC16T10/WWX | 40 | T-10 | Dia. 16" | 4-Pin | Home-line | 12 | 7500 | 1650 | .... |

* In addition to rapid start operation these lamps will give fully as good performance in any present circuit as the previous lamps did.

① Life under specified test conditions with lamps turned off and restarted no oftener than once every 3 burning hours. ② Approximate initial lumens after 100 hours operation.

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| 6S14 | | 25 |
| 6S14/IF | | " |
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| 7½S | | 23 |
| 7½S/CO | | " |
| 7½S/CB | | " |
| 7½S/CG | | " |
| 7½S/CR | | " |
| 7½S/CW | | " |
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| 10C7DC | | " |
| 10C7/4 | | " |
| 10S6/10 | | " |
| 10S11N | | 25 |
| 10S11N/CB | | " |
| 10S11N/CFT | | " |
| 10S11N/CG | | " |
| 10S11/CO | | " |
| 10S11N/CR | | " |
| 10S11N/CW | | " |
| 10S11N/CY | | " |
| 10S14 | | 13 |
| 10S14/IF | | 11 |
| 10S14/D | | 16 |
| 10S14/CB | | " |
| 10S14/CG | | " |
| 10S14/CR | | " |
| 10S14/CO | | " |
| 10S14/CY | | " |
| 10S14/CW | | " |
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| 11S14 | | 13 |
| 11S14/IF | | 11 |
| 11S14/B | | 25 |
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| 15A17/V | | " |
| 15A17/RO | | " |
| 15A17/R | | " |
| 15A17/W | | " |
| 15A17/Y | | " |
| 15B9½ | | 23 |
| 15B9½/W | | " |
| 15FC | | " |
| 15FC/FT | | " |
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| 15FC/W | | " |
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| 15T7N | | " |
| 15T8C | | 23 |
| 15T8C/W | | " |
| 15T8/N | | " |
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| 25A/AO | | " |
| 25A/W | | " |
| 25A/B | | " |
| 25A/FT | | " |
| 25A/G | | " |
| 25A/V | | " |
| 25A/O | | " |
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| 25G18½/V | | " |
| 25G18½/W | | " |
| 25G25/FT | | " |
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| 25G25/W | | " |
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| 40A/B | | " |
| 40A/FT | | " |
| 40A/G | | " |
| 40A/V | | " |
| 40A/R2 | | " |
| 40A/R | | " |
| 40A/Y | | " |
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| 40G/V | | " |
| 40G/W | | " |
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| 40T8 | | 33 |
| 40T8/IF | | " |

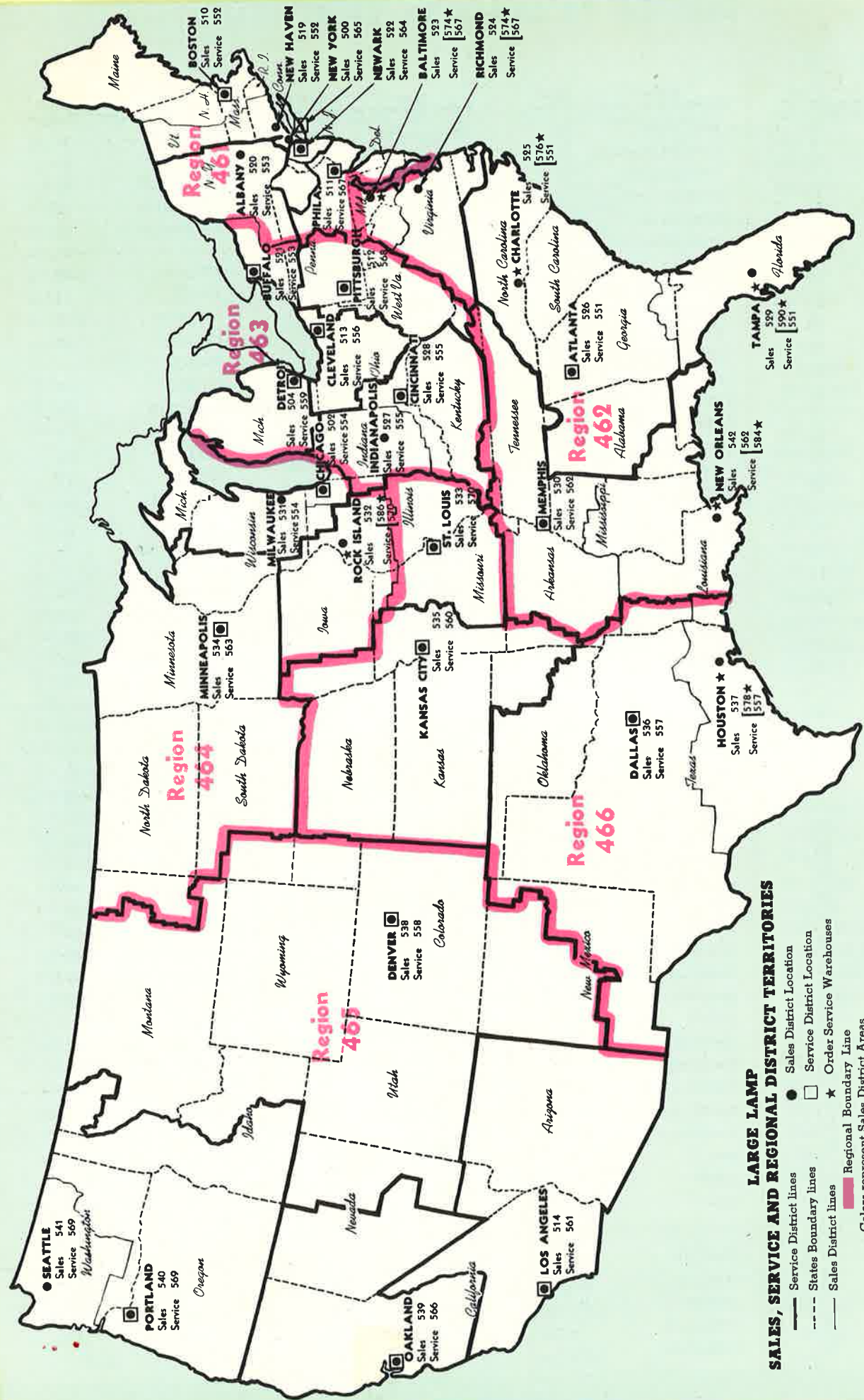
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| 75A/Coloramic | | 21 |
| 75A/CL | | 13 |
| 75A21/RS | | 38 |
| 75A21P | | 43 |
| 75PAR/FL | | 35 |
| 75PAR/SP | | " |
| 75R30/SP | | 36 |
| 75R30/FL | | " |
| 75T10/45 | | 33 |
| 94P25 | | 47 |
| 100A21/61Y | | 18 |
| 100A | | 11 |
| 100A | | 48 |
| 100A/Coloramic | | 21 |
| 100A/CL | | 13 |
| 100A21P | | 43 |
| 100A21/TS | | 47 |
| 100A/W | | 19 |
| 100A/1SB | | 15 |
| 100A/1SBIF | | " |
| 100A | | 39 |
| 100A/D | | 16 |
| 100A23/20 | | 29 |
| 100A23/28 | | 38 |
| 100A (Low V) | | 48 |
| 100A/RS | | 38 |
| 100A/RS | | 48 |
| 100G16½/29SC | | 30 |
| 100G16½/29DC | | " |
| 100GA | | 18 |
| 100A21/SP | | 32 |
| 100T8½/8 | | 27 |
| 100T8½/9 | | " |
| 100/100P25/29 | | 46 |
| 100/300 | | 17 |
| 100/300/DPK | | 21 |
| 107A21/TS | | 47 |
| 116A21/TS | | " |
| 125G30 | | 49 |
| 125R40 | | " |
| 125T10P | | 27 |
| 150PAR/SP | | 34 |
| 150PAR/FL | | " |

| Lamp Order | Abbreviation | Listed On Page |
|----------------|--------------|----------------|
| 500T12/9 | | 30 |
| 150PAR/Colors | | 35 |
| 150PAR/3FL | | 34 |
| 150PAR/3SP | | " |
| 150PAR46 | | 39 |
| 150PAR46/1 | | " |
| 150A | | 11 |
| 150A/Coloramic | | 21 |
| 150A/CL | | 13 |
| 150P25/15 | | 47 |
| 150P25/10 | | 27 |
| 150 | | 11 |
| 150/CL | | 13 |
| 150/WB | | 16 |
| 150/DCL | | " |
| 150/D | | " |
| 150/SB | | 15 |
| 150PS25/Y | | 18 |
| 150/PS25 | | 48 |
| 150/RS | | 38 |
| 150/VS | | " |
| 150/400 | | 27 |
| 150R/SP | | 36 |
| 150R/FL | | " |
| 150R/W | | 19 |
| 150R/B | | 37 |
| 150R/BW | | " |
| 150R/G | | " |
| 150R/PK | | " |
| 150R/R | | " |
| 150R/Y | | " |
| 150T8/2SC | | 27 |
| 200PAR46/3NSP | | 34 |
| 200PAR46/3MFL | | " |
| 200 | | 13 |
| 200/IF | | 11 |
| 200A | | " |
| 200A/CL | | 13 |
| 200/WB | | 16 |
| 200/D | | " |
| 200/SBIF | | 15 |
| 200/SBIF/1 | | " |
| 200PS30/24 | | 38 |
| 200PS30/23 | | " |
| 200PS30/12 | | 13 |
| 200 | | 48 |
| 200IF | | " |
| 200 | | 39 |
| 250G/SP | | 30 |
| 250G/FL | | 32 |
| 250G30 | | 49 |
| 250R40/1 | | " |
| 250R40/4 | | " |

| Lamp Order | Abbreviation | Listed On Page |
|--------------|--------------|----------------|
| 250PS30/33 | | 49 |
| 250R40/10 | | " |
| 300M | | 13 |
| 300M/IF | | 11 |
| 300MS/SBIF | | 15 |
| 300MS | | 48 |
| 300 | | 13 |
| 300 | | 48 |
| 300/IF | | " |
| 300/IF | | 11 |
| 300/WB | | 16 |
| 300PAR56 | | 43 |
| 300PAR56/NSP | | 34 |
| 300PAR56/MFL | | " |
| 300PAR56/WFL | | " |
| 300/SBIF | | 15 |
| 300/SBIF/1 | | " |
| 300R/SP | | 36 |
| 300R/FL | | " |
| 300R/FL/1 | | " |
| 300/RS | | 38 |
| 300R/SP/1 | | 36 |
| 300R/3SP | | " |
| 300R/3FL | | " |
| 325/66/A21 | | 43 |
| 375G30 | | 49 |
| 375R40/1 | | " |
| 375R40 | | " |
| 400G/SP | | 32 |
| 400G/FL | | " |
| 500G30/1 | | 49 |
| 500G/FL | | 32 |
| 500G/SP | | " |
| 500 | | 13 |
| 500/IF | | 11 |
| 500PAR64/NSP | | 34 |
| 500PAR64/MFL | | " |
| 500PAR64/WFL | | " |
| 500/SBIF | | 15 |
| 500SBIF/1 | | " |
| 500/RS | | 38 |
| 500PS40/45 | | 43 |
| 500 | | 48 |
| 500/IF | | " |
| 500R/3SP | | 36 |
| 500R/3FL | | " |
| 500R52 | | " |
| 500T3 | | 49 |
| 500T20/64 | | 27 |
| 500T20/13 | | 43 |
| 500T12/8 | | 32 |

| Lamp Order | Abbreviation | Listed On Page |
|-------------|--------------|----------------|
| 500T14/8 | | 30 |
| 500T14/7 | | 32 |
| 500T20/25 | | 43 |
| 500T20/45 | | 32 |
| 620PS40/P | | 43 |
| 750 | | 13 |
| 750/IF | | 11 |
| 750/SBIF | | 15 |
| 750 | | 48 |
| 750/IF | | " |
| 750R52 | | 36 |
| 750T12/9 | | 30 |
| 750T12/34 | | 27 |
| 750T14 | | 30 |
| 750T24 | | 11 |
| 750T24/5 | | 30 |
| 750T24/13 | | " |
| 750T24/16 | | " |
| 1M/G25 | | 46 |
| 1M/G40SP4¼ | | 32 |
| 1M/G40/23 | | 30 |
| 1M/G40PSP | | 32 |
| 1M/G40FL | | " |
| 1000 | | 13 |
| 1000/IF | | 11 |
| 1000/SBIF | | 15 |
| 1000 | | 48 |
| 1M/PS52/44 | | 13 |
| 1M/T20/5 | | 46 |
| 1M/T20BP | | 43 |
| 1M/T24/5 | | 30 |
| 1M/T24 | | 11 |
| 1M/T3 | | 49 |
| 1M/T40/3 | | " |
| 1M/G48/11 | | 30 |
| 1020/66/A21 | | 43 |
| 1200T20 | | " |
| 1500G48/6 | | 32 |
| 1500PS52/46 | | 13 |
| 1500 | | " |
| 1500/IF | | 11 |
| 1500 | | 48 |
| 1500T24/6 | | 30 |
| 2M/G48/14 | | 30 |
| 2M/G48/17 | | " |
| 2M/G48/18 | | " |
| 2M/T30/1 | | " |
| 5M/T64/1 | | 43 |
| 5M/G64/3 | | 30 |
| 5M/G64/7 | | " |



Sales representatives in 32 Districts and Service representatives in 26 Districts provide customers with every cooperative assistance in obtaining lamps needed.

Warehouse stocks of many millions of lamps are maintained at strategic locations throughout the country to assure prompt availability of all types of lamps.

Engineers in each of the 32 Districts offer extensive application engineering services.





General Electric Large Lamp Sales and Service District Offices

SALES DISTRICTS (To Obtain Sales and Technical Information)

| CITY | | (Zone) |
|-----------------------------|-----------------------------------|-------------------------------|
| ALBANY, N. Y. | 8 Elk Street | 7 3-4447 |
| ATLANTA, GA. | 187 Spring St., N. W. | 3 1A Jackson 3-1526 |
| BALTIMORE, MD. | 1401 Parker Rd. | 27 Circle 2-5700 |
| BOSTON, MASS. | | |
| (Newton Upper Falls, Mass.) | 50 Industrial Place | 64 DEcatur 2-6200 |
| BUFFALO, N. Y. | 438 Delaware Ave. | 2 GARfield 7381 |
| CHARLOTTE, N. C. | 1001 Tuckaseegee Rd. | 8 FRanklin 6-6585 |
| CHICAGO, ILL. | 165 No. Canal St. | 6 DEarborn 2-4712 |
| CINCINNATI, OHIO | 36 E. Fourth St. | 2 DUbar 1-2460 |
| CLEVELAND, OHIO | 1320 Williamson Bldg. | 14 CHerry 1-1010 |
| DALLAS, TEXAS | 6500 Cedar Springs Rd. | 35 FLEetwood 1-3725 |
| DENVER, COLO. | 1863 Wazee St. | 2 AMherst 6-0285 |
| DETROIT, MICH. | 1400 Book Tower | 26 WOODward 3-6910 |
| HOUSTON, TEXAS | 807 C & I Life Bldg. | 2 CAPitol 7-4291 |
| INDIANAPOLIS, IND. | 1115 Circle Tower | 4 MELrose 2-2536 |
| N. KANSAS CITY, MO. | 200 East 16th Ave. | 16 GRand 1-3568 |
| LOS ANGELES, CALIF. | 2747 Malt Ave. | 22 RAYmond 3-2541 |
| MEMPHIS, TENN. | 1179 Morehead St. | 7 JACkson 3-1441 |
| MILWAUKEE, WIS. | 5032 Plankinton Bldg. | 3 BRoadway 1-8580 |
| MINNEAPOLIS, MINN. | 500 Stinson Blvd. | 13 STerling 9-7286 |
| NEWARK, N. J. | 744 Broad St., Room 606 | 2 MArket 3-3953 |
| NEW HAVEN, CONN. | 185 Church St. | 10 LOcust 2-9828 |
| NEW ORLEANS, LA. | 4800 River Rd. | 21 VERNon 5-6421 |
| NEW YORK, N. Y. | 570 Lexington Ave. | 22 PLaza 1-1311 |
| OAKLAND, CALIF. | 999 - 98th Ave. | 3 LOckhaven 9-3422 |
| PHILADELPHIA, PA. | 3 Penn Center Plaza | 2 LOcust 4-4870 |
| PITTSBURGH, PA. | 238 W. Carson St. | 19 GRant 1-9050 |
| PORTLAND, ORE. | 2800 N. W. Nela St. | 10 CAPital 3-2101 |
| RICHMOND, VA. | 1004 No. Thompson St. | 21 6-2385 |
| ROCK ISLAND, ILL. | 111 Fourth Ave. | — 8-3405 |
| SEATTLE, WASH. | 202 Hoge Bldg. | 4 SEneca 8300 |
| ST. LOUIS, MO. | 710 No. Twelfth Blvd. | 1 CHestnut 1-8920 |
| TAMPA, FLA. | 505 Twiggs St. | 2 2-0115 |

SERVICE DISTRICTS (To Order Lamps and to Obtain Shipping Information. Local Warehouse Stocks maintained at these Points)

| | (Zone) |
|---|---------------------|
| Buffalo Serv. Dist., 98 Hydraulic St., Buffalo 10, N. Y. | — 10 Plaza 5-5756 |
| 680 Murphy Ave., S. W. | 27 Circle 2-5700 |
| 1401 Parker Rd. | |
| 50 Industrial Place | 64 DEcatur 2-6200 |
| 98 Hydraulic St. | 10 MOhawk 0800 |
| 634 South Cedar St. | 1 EDison 2-2141 |
| 4201 So. Pulaski Rd. | 32 CLiffside 4-6161 |
| 49 Central Ave. | 2 GARfield 1-6810 |
| 1133 E. 152nd St. | 10 LIBerty 1-1700 |
| 6500 Cedar Springs Rd. | 35 FLEetwood 1-3725 |
| 1863 Wazee St. | 2 AMherst 6-0285 |
| 1448 Wabash Ave. | 16 WOODward 2-9650 |
| 5534 Armour Dr. | 20 WALnut 3-2549 |
| Cincinnati Serv. Dist., 49 Central Ave., Cincinnati 2, Ohio | |
| 200 East 16th Ave. | 16 GRand 1-3568 |
| 2747 Malt Ave. | 22 RAYmond 3-2541 |
| 1179 Morehead St. | 7 JACkson 3-1441 |
| Chicago Serv. Dist., 4201 So. Pulaski Rd., Chicago 32, Ill. | |
| 500 Stinson Blvd. | 13 STerling 9-7286 |
| 133 Boyd St. | 3 BIGelow 3-4500 |
| Boston Serv. Dist., 50 Industrial Place (Newton Upper Falls 64, Mass.) | |
| 4800 River Rd. | 21 VERNon 5-6421 |
| N. Y. Serv. Dist., 75-11 Woodhaven Blvd., Glendale 27, N. Y. | |
| 999 - 98th Ave. | 3 LOckhaven 9-3422 |
| 32nd & Walnut Sts. | 4 EVERy'n 6-9600 |
| 238 W. Carson St. | 19 GRant 1-9050 |
| 2800 N. W. Nela St. | 10 CAPital 3-2101 |
| P. O. Box 7427, Baltimore 27, Md. | |
| 111 Fourth Ave. | — 8-3405 |
| Portland Serv. Dist., 2800 N. W. Nela St., Portland 10, Ore. | |
| 710 No. Twelfth Blvd. | 1 CHestnut 1-8920 |
| 815 North 26th St. | 1 4-4174 |

In addition to the Sales District Headquarters cities listed above, G-E Lamp salesmen are resident in 79 other cities. Consult your telephone directory under General Electric Company Lamp Division.

General Offices: Nela Park, Cleveland 12, Ohio

LARGE LAMP DEPARTMENT

GENERAL  ELECTRIC