method studio

Addendum # 04

Date: 15 September 2025

PROJECT:
IH LRH OR 7 Expansion
Logan Regional Hospital
1400 N 500 E, Logan, UT 84341

OWNER:
Intermountain Healthcare
Milt White, Construction Project Manager
435-770-9328

ARCHITECT:
Method Studio
360 W Aspen Ave.
Salt Lake City, UT 84101
801-532-4422

This Addendum forms a part of the Contract Documents and modifies the original contract documents. Receipt of this Addendum must be acknowledged by the Contractor and Owner.

Architectural Clarifications:

1) Preferred Roof contractor
   a) All Weather Roofing
   b) Per Owner request, General Contractor is to obtain multiple bids, including the preferred vendors, to ensure a competitive process.

2) Preferred Fire alarm contractor
   a) Rapid Fire
   b) Preferred Fire
   c) Per Owner request, General Contractor is to obtain multiple bids, including the preferred vendors, to ensure a competitive process.

3) Is the ceiling hard deck and is it getting ripped out for this project?
   a) OR-7 has a hard lid ceiling. Adjacent hallway spaces on level 2 and remodel areas on level 3 have lay-in ceiling. Ceilings in remodel areas will need to be removed and replaced as part of the project as indicated in architectural RCP plans.

4) Wall covering vertical joints is calling out for hot weld. In talking to Construction Specialties this is something they don't do on their wall covering. Also I don't see a specification for this wall covering either. Will it be the .04 or .06 thickness?
   a) Please see A571 and A702 for updated detail and schedule. Provide trim at vertical joints. Wall covering thickness to be 0.04".

5) Stryker Equipment Drawings
   a) Please see Stryker drawings. Contractor to coordinate installation requirements with Stryker.
      i) Logan Reg - Mar20 - Triple Mount over Patient - Elevation_10299177_v1
      ii) Pre-Install Surgical lights - ChromoView

Structural Clarifications:

1) Please provide count of base plate needed for this project.

a) We can't determine this through bolt information until the contractor determines the thickness of the concrete suspended slab during the demolition stage of the construction and the location of the bolt in relationship to the steel flutes in the existing decking.

2) Please confirm if an A325 3/4" diameter, 8" long thru bolt is acceptable, or provide the correct standard if different.
   a) As the detail says the replacement bolts are A325, however, this bolt diameter and configuration must match the bolts called out by the equipment supplier, see their drawings to determine the diameter, head configuration, etc.

3) Please provide cut length of L2X2X3/16 needed for vertical brace and support.
   a) This information is determined by the exact location of the mount and its relationship to the existing steel beams in the building. The architect has provided the top of floor elevation and the bottom of ceiling elevation, and the equipment supplier has provided the location of this plate in their drawings in relationship to the bottom of the ceiling, we have provided the thickness of the floor slab to the best of our ability at this time. Using this information, you should be able to determine an approximate length enough for bidding. We can determine exact lengths during the demolition phase of the construction.

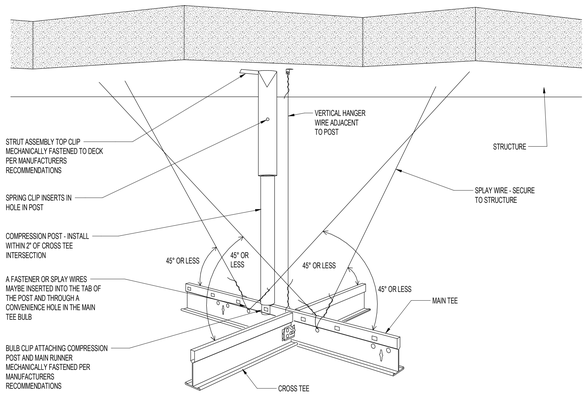
MFP Clarifications:

1) Is mechanical to provide seismic for the heat pumps along with drain pans?
   a) OR-7 Remodel project is VAV reheat and does not include heat pump units
   b) Re: Inpatient Pharmacy Addendum 3

2) Is mechanical running condensate drain lines or is the plumber going to? Additionally, is condensate required separately for the pans?
   a) Re: Inpatient Pharmacy Addendum 3
   b) For the OR-7 remodel there is a requirement on sheet P102A to include drip pans/double containment piping to protect overhead sanitary sewer/roof drain piping in the ceiling of OR-7. A water sensor and condensate piping will be required for this.

END OF ADDENDUM – 04

360 West Aspen Ave. Salt Lake City, Utah 84101 method-studio.com 801.532.4422



D1 CEILING SEISMIC BRACING
1 1/2" = 1'-0"

NOTE 1- ALL SPLAY WIRES TO BE IN LINE WITH ATTACHED COMPONENT.

NOTE 2- ALL SPLAY WIRES TO BE TAUT AND TIED BOTH ENDS WITH MINIMUM OF THREE TURNS IN 1" OF RUN.

NOTE 3- COMPLY WITH IBC 2015, ASTM C635, ASTM C636 AND CISCA STANDARDS

NOTE 4- SPLAY WIRES SHALL ATTACH TO STRUCTURAL GIRDER OR JOIST ONLY, DO NOT ATTACH TO ROOF DECK.

NOTE 5- METAL COMPRESSION POST (STRUT) FASTENED TO THE MAIN RUNNER SHALL BE EXTENDED TO AND FASTENED TO THE STRUCTURAL MEMBERS SUPPORTING THE ROOF OR FLOOR ABOVE. COMPRESSION POSTS & SPLAY WIRES TO BE INSTALLED EVERY 12' O.C. BOTH DIRECTIONS STARTING 6' FROM WALL. SEE COMPRESSION POST ALLOWABLE LENGTHS TABLE FOR SIZES. SEE DETAILS 3 & 4 FOR TYPICAL BRACING.

NOTE 6- ALL LIGHT FIXTURES SHALL BE POSITIVELY ATTACHED TO THE SUSPENDED CEILING SYSTEM. WHEN INTERMEDIATE SYSTEMS ARE USED, ATTACH NO. 12 GAGE HANGERS TO THE GRID MEMBERS WITHIN 2" OF EACH CORNER OF EACH FIXTURE. LIGHT FIXTURES WEIGHING LESS THAN 56 LBS. SHALL HAVE TWO NO. 12 GAGE HANGERS CONNECTED FROM THE FIXTURE HOUSING TO THE STRUCTURE ABOVE. COMPLY WITH IBC 2015

NOTE 7- ALL LIGHT FIXTURES SHALL BE POSITIVELY ATTACHED 20 LBS. SHALL BE POSITIVELY ATTACHED TO THE CEILING SUSPENSION MAIN RUNNERS. TERMINALS OR SERVICES WEIGHING 20 LBS., BUT NOT MORE THAT 56 LBS., SHALL IN ADDITION HAVE TWO NO. 12 GAGE HANGERS CONNECTED TO THE CEILING SYSTEM HANGERS OR TO THE STRUCTURE ABOVE. TERMINALS OR SERVICES WEIGHING MORE THAN 56 LBS. SHALL BE SUPPORTED DIRECTLY FROM THE STRUCTURE ABOVE BY APPROVED HANGERS. COMPLY WITH IBC 2015

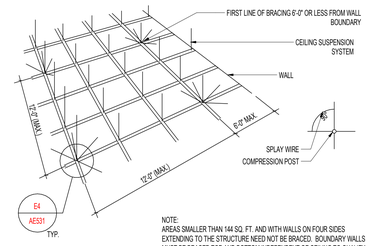
NOTE 8- ALL GRID SYSTEM IN SEISMIC ZONE D OR GREATER ARE REQUIRED TO BE HEAVY DUTY. REFER REQUIREMENTS TO ASCE 7 REQUIREMENTS.

NOTE 9- CEILINGS WITHOUT RIGID BRACING MUST HAVE 2' OVERSIZED TRIM RINGS FOR SPRINKLERS AND OTHER PENETRATIONS, COORDINATE W/ SPECIFICATIONS.

NOTE 10 - SUSPENDED ACOUSTIC CEILINGS INSTALLED IN SEISMIC DESIGN CATEGORY D SHALL BE INSTALLED ACCORDING TO IBC 808.1.1.1, IBC 1613.1, ASTM C 635, ASTCM C 636, AND ASCE 7-10.

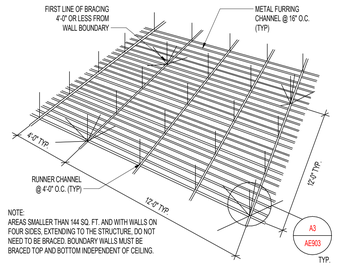
NOTE 11 - ACOUSTICAL PANEL CEILINGS REQUIRES SEISMIC DESIGN TO BE COMPLETED BY A LICENSE ENGINEER AND SUBMITTED FOR REVIEW AND APPROVAL RE: SPECIFICATIONS.

COMPRESSION POST ALLOWABLE LENGTHS TABLE	
MATERIAL	TYP. ALLOWABLE LENGTH
13/16" x 13/32" STRUT 19 GA	24"
1 5/8" x 13/16" STRUT 12 GA	48"
13/16" x 13/16" STRUT 19 GA	54"
1 5/8" x 1" STRUT 12 GA	60"
3 5/8" x 1 1/4" STRUT 16 GA	82"
1 1/4" x 1 1/4" STRUT 14 GA	84"
1 5/8" x 1 3/8" STRUT 12 GA	96"
1 5/8" x 1 5/8" STRUT 12 GA	108"
1 5/8" x 2 7/16" STRUT 12 GA	120"
NOTES 1. THE INFORMATION PROVIDED IS FOR QUICK REFERENCE ONLY. OTHER RESTRICTIONS AND EXEMPTIONS MAY APPLY. 2. WALL MOLDING SHOULD NOT BE USED AS STRUTS. 3. A STRUCTURAL ENGINEER SHOULD BE CONSULTED FOR LENGTHS GREATER THAT 14'.	



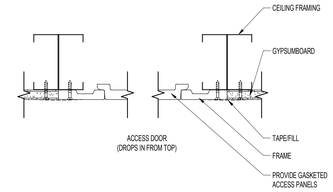
NOTE:
AREAS SMALLER THAN 144 SQ. FT. AND WITH WALLS ON FOUR SIDES EXTENDING TO THE STRUCTURE NEED NOT BE BRACED. BOUNDARY WALLS MUST BE BRACED TOP AND BOTTOM INDEPENDENT OF CEILING TO QUALIFY.

E5 CEILING SEISMIC BRACING AT LAY-IN
12" = 1'-0"

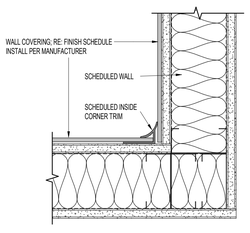


NOTE:
AREAS SMALLER THAN 144 SQ. FT. AND WITH WALLS ON FOUR SIDES, EXTENDING TO THE STRUCTURE, DO NOT NEED TO BE BRACED. BOUNDARY WALLS MUST BE BRACED TOP AND BOTTOM INDEPENDENT OF CEILING.

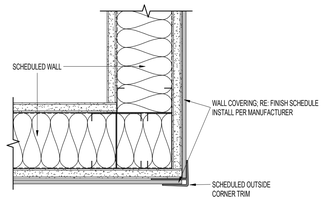
D5 CEILING SEISMIC BRACING GYP.
12" = 1'-0"



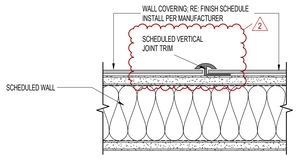
C1 GFRG DRAFTSTOP ACCESS PANEL DETAIL
3" = 1'-0"



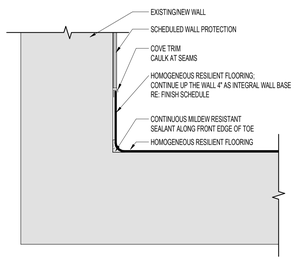
A1 WALL PROTECTION - INSIDE CORNER
3" = 1'-0"



A2 WALL PROTECTION - OUTSIDE CORNER
3" = 1'-0"



A3 WALL PROTECTION - VERTICAL JOINTS
3" = 1'-0"



A4 HOMOGENOUS RESILIENT FLOORING
3" = 1'-0"

method studio
360 west aspen avenue
salt lake city, utah 84101
801 532 4422

LICENSED ARCHITECT
8320267-0301
ERIC J. GEPPELT
STATE OF UTAH

05 JUNE 2025

project:

LRH OR 7 EXPANSION

Logan Regional Hospital
1400 N 500 E
Logan, UT 84341

project#: 24.0520
date: 05 JUNE 2025

revisions :

2	Addendum 4	09/12/2025

title:

CEILING AND INTERIOR DETAILS

sheet:

A571

CONSTRUCTION DOCUMENTS

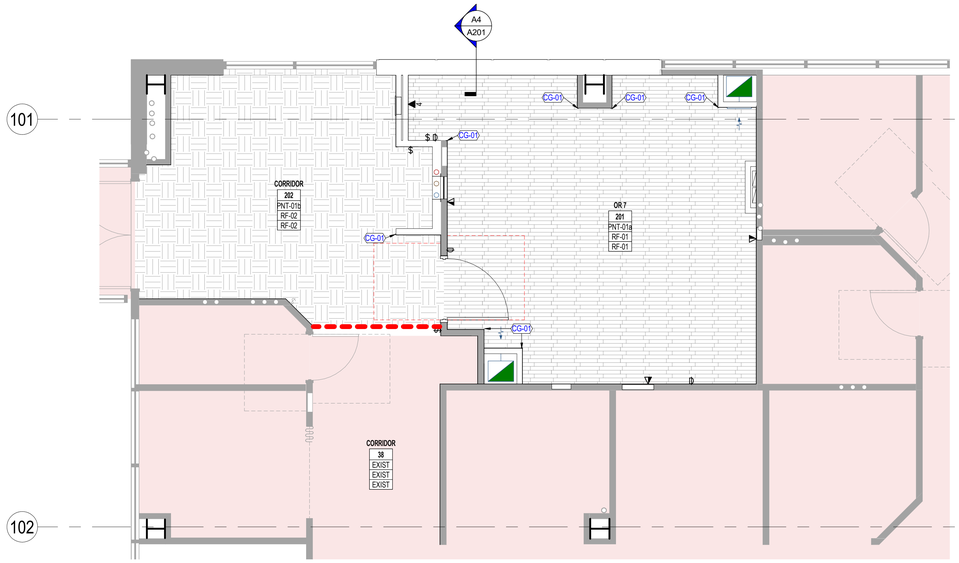
*MS_FINISH SCHEDULE

SCEDULED MATERIALS AND FINISHES SHALL BE USED FOR BASIS OF DESIGN U.N.O.

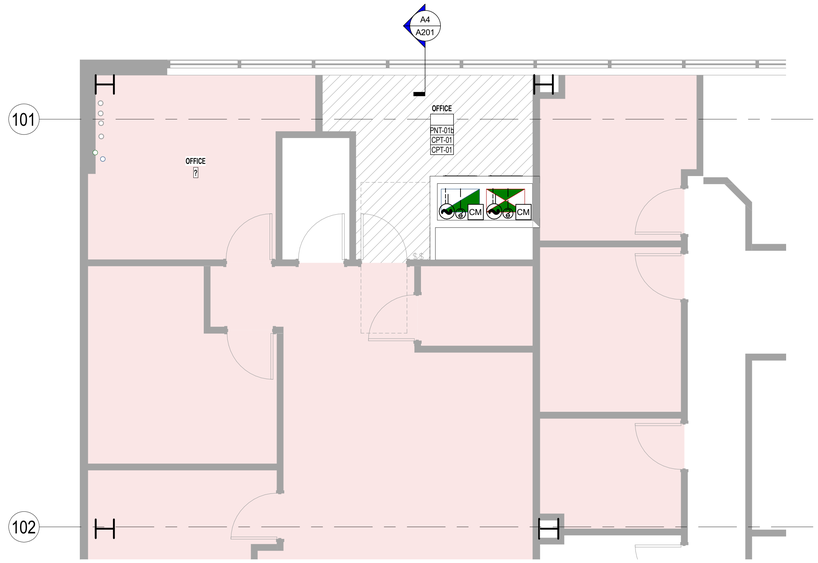
CODE	PRODUCT TYPE	MANUFACTURER	STYLE	COLOR	DIVISION	FINISH NOTES/ REMARKS	SPECIFICATION
DIVISION 06 - WOODS, PLASTICS & COMPOSITES							
PL-01	PLASTIC LAMINATE	WILSONART	LINEARITY FINISH	7970K-18 HIGH LINE	DIVISION 06 - WOODS, PLASTICS & COMPOSITES	BASE AND UPPER CABINETS	
DIVISION 09 - CEILINGS							
ACP-01	ACOUSTICAL CEILING PANEL	ARMSTRONG CEILINGS	ULTIMA HEALTH ZONE	WHITE WH	DIVISION 09 - CEILINGS		MATCH EXISTING IN FIELD
DIVISION 09 - FLOORS							
CPT-01	CARPET TILE	MATCH EXISTING	MATCH EXISTING	MATCH EXISTING	DIVISION 09 - FLOORS	OWNER FURNISHED ATTICK STOCK. CONTRACTOR INSTALLED. PATCH AND REPAIR ONLY DUE TO THE ADDITION OF MECHANICAL SHAFT	-
RF-01	RESILIENT FLOORING	TARKETT	IQ OPTIMA	807 DARK SAND	DIVISION 09 - FLOORS	HEAT WELD ALL SEAMS WITH MANUFACTURER RECOMMENDED WELD RODS	
RF-02	RESILIENT FLOORING	MANNINGTON	BIOSPEC MD	SNOWY AL	DIVISION 09 - FLOORS	OWNER FURNISHED ATTIC STOCK. CONTRACTOR INSTALLED	
RF-02	RESILIENT FLOORING	MANNINGTON	BIOSPEC MD	CHERRY TOMATO	DIVISION 09 - FLOORS	OPERATING ROOM/SURGICAL SUITE RED LINE ONLY	
DIVISION 09 - PAINT & WALLCOVERING							
PNT-02a	FIELD CEILING PAINT	SHERWIN WILLIAMS	SW 7005	PURE WHITE	DIVISION 09 - PAINT & WALLCOVERING	FLAT FINISH	
PNT-01a	FIELD WALL PAINT	SHERWIN WILLIAMS	SW 6105	DIVINE WHITE	DIVISION 09 - PAINT & WALLCOVERING	SATIN FINISH; PROVIDE TWO PART PAINT EPOXY INSIDE OPERATING ROOM 7	
PNT-01b	FIELD WALL PAINT	SHERWIN WILLIAMS	MATCH EXISTING	MATCH EXISTING	DIVISION 09 - PAINT & WALLCOVERING	SATIN FINISH	
PNT-03	TRIM PAINT (HOLLOW METAL FRAMES)	SHERWIN WILLIAMS	MATCH ADJACENT WALL	MATCH ADJACENT WALL	DIVISION 09 - PAINT & WALLCOVERING	MATCH ADJACENT WALL. CONTRACTOR TO FIELD VERIFY WITH FACILITIES MANAGER	
WC-01	WALL COVERING	CONSTRUCTION SPECIALTIES	SMOOTH SHEET	GALVESTON GRAY	DIVISION 09 - PAINT & WALLCOVERING	0.04" THICKNESS. PROVIDE MANUFACTURER RECOMMENDED TRIMS AT EDGES, JOINTS, OUTSIDE, AND INSIDE CORNERS	
DIVISION 10 - SPECIALTIES							
CG-01	CORNER GUARD	CONSTRUCTION SPECIALTIES	SM-10		DIVISION 10 - SPECIALTIES	90 DEGREE, 3" WING SIZE, WITH BULLNOSE COVER	
DIVISION 12 - FURNISHINGS							
SS-01	SOLID SURFACE COUNTERTOP	DUPONT	CORIAN	NEUTRAL CONCRETE	DIVISION 12 - FURNISHINGS		-

HARDWARE SCHEDULE

PRODUCT TYPE	MODEL	FINISH	SPECIFICATIONS
CABINET PULL	**MATCH FACILITY STANDARD**	**MATCH FACILITY STANDARD**	



A1 LEVEL 2 FINISH PLAN
1/4" = 1'-0"



A4 LEVEL 3 FINISH PLAN
1/4" = 1'-0"

GENERAL NOTES - FINISH

1. SEE FLOOR PLANS FOR INTERIOR ELEVATIONS
2. ALL MATERIALS TO BE INSTALLED PER SPECIFIC MANUFACTURER'S INSTALLATION RECOMMENDATIONS
3. FLOORING MATERIAL TRANSITIONS TO OCCUR AT CENTERLINE OF DOOR THRESHOLDS, UNLESS NOTED OTHERWISE
4. PREPARE FLOORS/WALLS TO RECEIVE FINISH MATERIAL. REFER TO MANUFACTURER'S RECOMMENDATIONS FOR SURFACE PREPARATION. NOTIFY ARCHITECT IF CONDITIONS ARE INADEQUATE FOR REQUIRED INSTALLATION
5. REFER TO ROOM FINISH LEGEND ON SHEET SERIES A600 FOR MORE INFORMATION
6. SEE SHEET SERIES A500 FOR WALL TYPE AND ASSEMBLY DESCRIPTIONS
7. CONTRACTOR TO PROVIDE SOLID BLOCKING AT ALL CASEWORK, FIXED FURNISHINGS, AND EQUIPMENT. COORDINATE WITH ELEVATIONS, SECTIONS, FURNITURE, FIXTURE SHEETS, AND SPECIFICATIONS
8. SEE SHEET SERIES A500 FOR TYPICAL DETAILS
9. ALL FLOORING MATERIALS ARE TO RUN WALL TO WALL AND BENEATH CASEWORK
10. VERIFY LOCATION OF POINT OR ORIGIN OF TILE AND CONTROL JOINTS ON SHOP DRAWINGS AND WITH ARCHITECT ON-SITE PRIOR TO INSTALLATION
11. GENERAL CONTRACTOR TO COORDINATE POWER/DATA PLACEMENT WITH FURNITURE PROVIDER
12. LEVEL 5 FINISH REQUIRED FOR ALL WALL GRAPHIC AND WALLCOVERING LOCATIONS. SEE FINISH PLANS AND ELEVATIONS FOR LOCATIONS
13. ALL METAL STUD WALLS TO DECK ABOVE, UNLESS NOTED OTHERWISE; SEE SHEET SERIES A500 FOR WALL TYPES
14. PROVIDE DEFLECTION TRACKS AT ALL STUD WALLS, SEE DETAILS ON SHEET SERIES A500
15. ALL EXPOSED METAL TO BE INSTALLED PER SPECIFIC MANUFACTURER'S INSTALLATION RECOMMENDATIONS
16. CREATE A CLEAN, STRAIGHT TRANSITION LINE FROM POLISHED SEALED CONCRETE FLOORING TO SEALED CONCRETE FLOORING UNDER DOORS. USE APPROPRIATE MEANS TO ACHIEVE A CLEAN TRANSITION

FLOOR FINISH LEGEND

CPT-01	CARPET TILE	RF-01	RESILIENT FLOORING
		RF-02	RESILIENT FLOORING

*** SEE ENLARGED FINISH PLANS + INTERIOR ELEVATIONS+ FINISH SCHEDULE SHEET FOR MORE INFORMATION ***

FINISH KEY

TYP. ROOM FINISH TAG

Room name
101
W
B
F
*

- ROOM NUMBER
- WALL FINISH
- BASE FINISH
- FLOOR FINISH
- MULTIPLE FINISHES; SEE ELEVATION

NOTE: INDICATES MAIN FIELD FINISH. ASSUME THIS FINISH IN ENTIRE AREA UNLESS AN ACCENT IS CALLED OUT IN PLANS OR ELEVATION

ACCENT TAG

EXTENT OF FINISH SCOPE
XX-XX

- ARROWS REPRESENT EXTENT OF SCOPE
- FINISH CODE: REFER TO ELEVATIONS FOR ENTIRE SCOPE.

REFER TO FINISH SCHEDULE FOR BASIS OF DESIGN.

north

method studio
360 west aspen avenue
salt lake city, utah 84101
801 532 4422

LICENSED ARCHITECT
8320267-0301
ERIC J. GEPPELT
STATE OF UTAH

05 JUNE 2025

project:

LRH OR 7 EXPANSION

Logan Regional Hospital
1400 N 500 E
Logan, UT 84341

project#: 24.0520
date: 05 JUNE 2025

revisions :

2 Addendum 4 09/12/2025

title:

LEVEL 2 AND LEVEL 3 FINISH PLANS

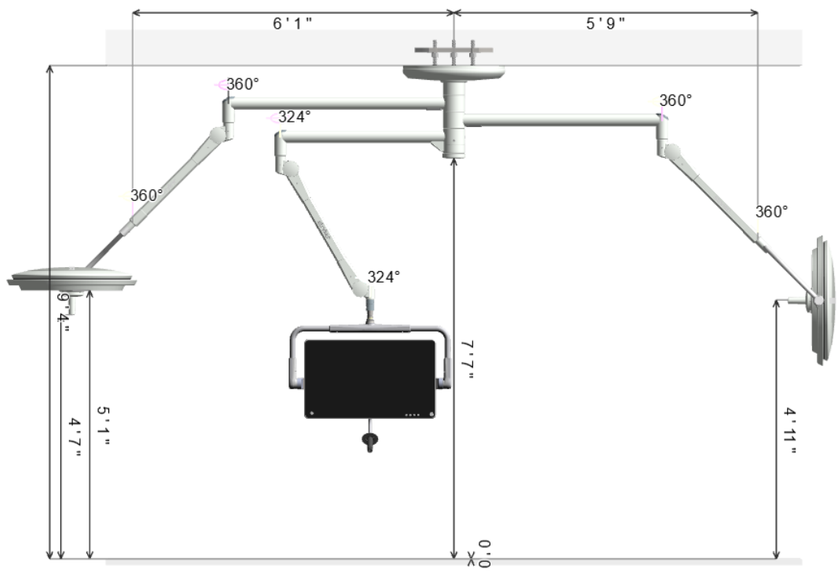
sheet:

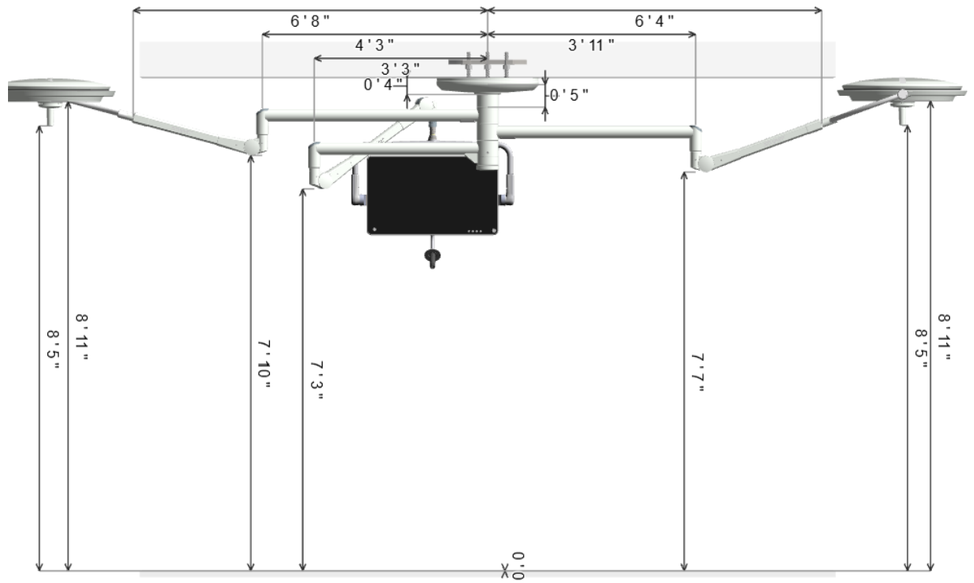
A702

CONSTRUCTION DOCUMENTS

OR 7 - Light / Light / Monitor

Quote:10299177 Rev:1 Block#:3





Main Mount	
Mounting Plate Type	Single Common Plate
Ceiling Cover	CB 5424004 590x80 TD 125mm
Tube Length	130
Electronics in SK Box	Yes
Wall Control?	Yes
Camera Type	None
Central Endo Lite	No
Wall Control Type	Wall mounted (recessed)
Light Handle Type	Sterilizable
Device Control	No
SK Box Type	Above Ceiling or Surface Mount

Arm No.1 (MP1)	
Equipment	Oculan
Horizontal Arm	1300
HCT Length	None
Cardanic	NFC
Dual Control	No
Mains Voltage	120VAC

Arm No.2 (MP2)	
Equipment	Oculan
Horizontal Arm	1200
HCT Length	None
Cardanic	NFC
Dual Control	No
Mains Voltage	120VAC

Arm No.3 (MP3)	
Equipment	UDM (19" - 32")
Horizontal Arm	1000
HCT Length	None
Dual Control	No
First Monitor	UDM (19" - 32")
Video Bundle	StrykerUDM

I confirm the ceiling height and agree with the dimensions as drawn. I confirm the equipment configuration as shown including arm lengths, platforms, gas key styles, brand, and locations; electronic, and low voltage selections and locations. I understand that any changes made after an order is in production will result in a change order fee and a delay in shipment.

CUSTOMER APPROVALS	SIGNATURE	PRINT NAME & TITLE	DATE
CLINICAL REPRESENTATIVE			
FACILITY ENGINEERING			

NOTES:

1 For weights, moments, and installation details, please refer to the Stryker Pre-installation manuals.

2 It is the owners responsibility to provide the support structure to meet requirements listed in the Pre-install Manual.

Stryker Communications
571 Silveron Blvd.
Flower Mound, TX 75028
PHONE: (877) 789-8106
E-FAX: (408) 754-2969
www.stryker.com

:
James Stock
james.stock@stryker.com

Project: Logan Reg - OR7 - Monitor/Light/Light over patient	
Customer: LOGAN REG HOSP	
City: LOGAN	State: Utah
Equip ID:	
Group Name: OR 7	
Quote No.: 10299177	Quote Rev No.: 1
Quote Date: 13-Mar-2025	QTY: 1
Oracle Line #:	
DWG Rev No.: 6	Block #:
DWG No.: 10299177C001	

stryker

Surgical Lights, VPA™, ChromoView Products and Universal Display Mount

Pre-Install Manual

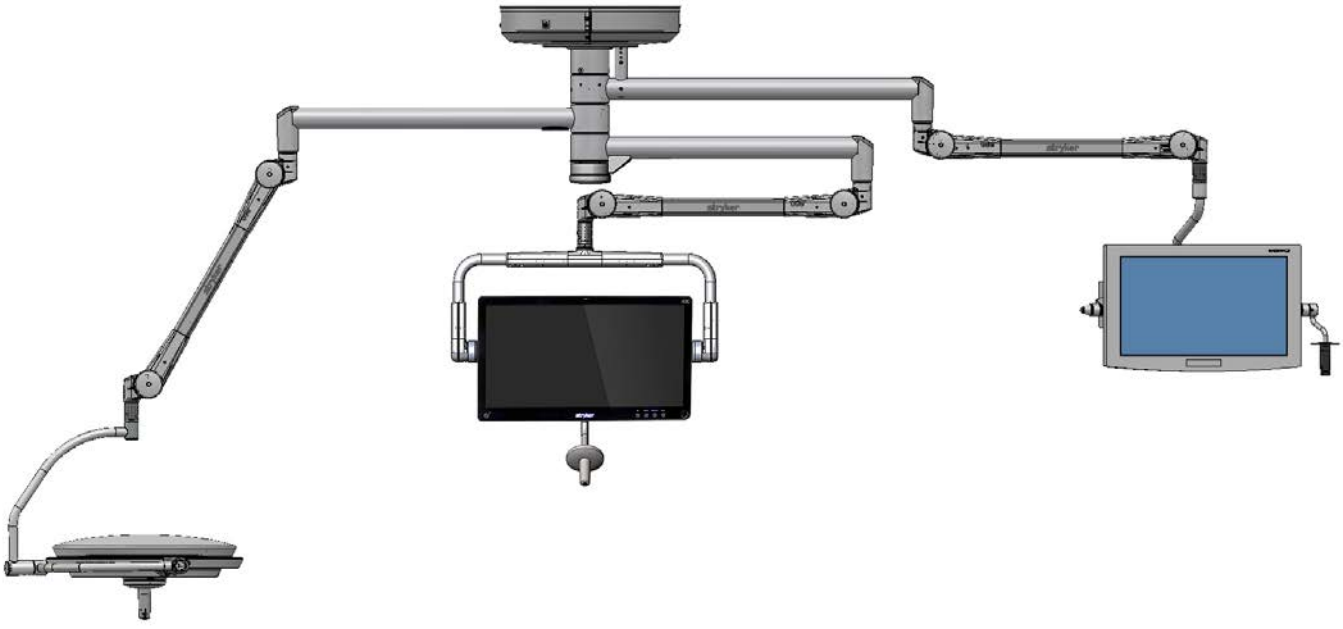


Table of Contents

1

Warnings and Cautions

1.1 Definition of symbols used

Warnings

Warnings in this user manual are marked with symbols. A signal word that reflects the extent of the danger precedes each warning. Observe all warning notices and exercise extreme caution to prevent accidents, injuries and property damage.

⚠ Danger:

The patient or user can be involved in an immediately dangerous situation. Disregarding this information can result in death or serious bodily injury.

Warning:

Possible injury to the patient or user.

Caution:

Possible damage to the equipment.

Note:

More information to clarify the instructions.

Special safety notices

To draw attention to particular dangers, the following symbol is used in combination with safety notices:

Warning:

Dangerous voltage. Refer all servicing to approved personnel.

1.2 Warnings

These safety precautions must be followed to install the CHROMOPHARE system. WARNINGS identify possible dangerous situations to personnel. It is important to read these precautions before use. The user must also read and follow all instructions, warnings and cautions supplied with or shown on the CHROMOPHARE products.

- Only Stryker trained personnel are authorized to install the equipment described in this manual.
- Use proper lifting equipment and procedures. Loaded shipping pallets are heavy and can cause injury to people or damage to the equipment if not handled properly.
- Do not attach objects (for instance, sprinkler pipes, electrical conduit, utility piping, duct work) to the CHROMOPHARE support structure, unless approved by the structural engineer or mechanical contractor.
- Live electrical circuits can cause injury or death. To prevent work on live electrical circuits, lock out and tag out power supplies.
- Drifting of the equipment can cause injury.
- The hospital/contractor has final responsibility for the strength and rigidity of the support structure system to the building. An inadequate support structure will affect the ability of the CHROMOPHARE unit to perform in the manner intended. An inadequate support structure design can also result in damage to the equipment. Equipment warranty service charges related to an inadequate support structure design or installation are at the customer's expense.
- Transport and store CHROMOPHARE components out of the elements and away from dust, debris, and moisture to protect them from damage. Do not expose them to corrosive media, and avoid mechanical vibrations (see section *Transport and storage conditions [▸ 70]*). Failure to protect the components can lead to damage that will prevent proper installation and service performance. Certain boxes may be labeled with storage instructions that are more extensive than the requirements cited here. Follow them accordingly.
- When storing for 15 weeks or longer, periodically check the general condition of all components and the packaging.
- Caution must be exercised when lifting heavy objects to avoid serious bodily injury or damage to equipment.

1.2.1 Electrical Safety

Warning:

Always use caution when working on electrical systems.

Note: The hospital/contractor is responsible for running electrical power from the building supply to the CHROMOPHARE system (SK enclosure and/or mounting ring as indicated), and connecting the main power and hospital ground at this point.

- Touching uninsulated, live electrical components is life threatening. Damage to insulation or individual components can cause fatal injury.
- If insulation is damaged, immediately switch off the power supply and initiate repairs.
- Electrical work is to be performed only by skilled electricians.
- Before performing any electrical work, disconnect the mains power and verity that it is not live.
- To avoid risk of electric shock, this equipment must only be connected to a supply mains with protective earth.
- Know the electrical power rating of the unit being worked on.
- Use properly rated voltmeter/multimeter test equipment.
- Grip electrical test-probe leads only by their insulated handles.
- Do not attempt repairs on any live electrical circuits.
- Use lock-out, tag-out procedures before servicing any electrical component.
- Install or replace wiring only with the appropriate AWG size wire(s).
- Do not override or by-pass fuses.
- Ensure that numbered outlets are identified and wired to the appropriate circuit.
- Do not reroute or rewire circuits in a way that will allow operators to connect excess loads.

1.2.2 Electrical Current

The label below indicates electrical current warning.

Warning:

Only skilled electricians and trained, skilled personnel can work with electrical components inside the ceiling cover.

1.3 Cautions

- Do not attach items to the support structure unless approved by the structural engineer or mechanical contractor. Additional attachments have the potential to load the structure and can allow the CHROMOPHARE system to drift.
- Do not allow any component of the CHROMOPHARE system to collide with walls or other equipment.

2

Product symbol definition

The device and its packaging can be marked with the following symbols:

Warning, electricity
Electrical voltage
Only skilled electricians may work in these areas.

Load limit
Never exceed the indicated permissible load limit.

Products bearing the UL-Classified Mark for the U.S. and Canada are covered by UL's Classification and Follow-Up Service and meets the appropriate U.S. and Canadian requirements.

Consult instructions for use

Follow instructions for use

Dangerous voltage
A lightning bolt indicates the presence of hazardous voltage.
Refer all service to authorised personnel.

Alternating current

Temperature limitation
Denotes temperature limits.

Humidity limitation
Denotes humidity limits.

Pressure limitation
Denotes relative pressure limits.

The device meets European Union medical device requirements.

Medical device in the European Union.

Date of manufacture
Denotes the date the equipment was manufactured.

Manufacturer
Denotes the manufacturer of the device.

Catalogue number
Denotes product/part number.

Serial number
Denotes product/serial number.

Batch code
Denotes lot or batch number.

For U.S. audience only - Caution: Federal Law (USA) restricts this device to sale by or on the order of a physician.

Denotes quantity.

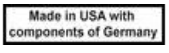
In accordance with European Community Directive 2012/19/EU on Waste Electrical and Electronic Equipment, this symbol indicates that the product must not be disposed of as unsorted municipal waste but should be collected separately. We request that you contact Stryker when you plan to withdraw this device from service.

No hazardous substance contained in the product

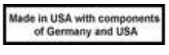
Indicates hot surfaces.

Device contains a battery.

Denotes oxygen explosion hazard.



Denotes made in USA with components of Germany.



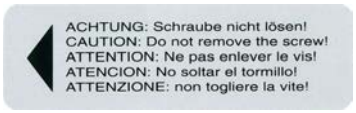
Denotes made in USA with components of Germany and USA.

Denotes made in Germany.

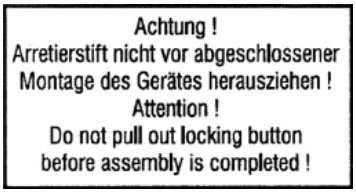
Denotes made in USA

Denotes the assembled to order number.

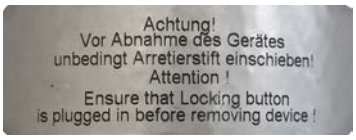
CAUTION: Before removing the cover, disconnect the power supply



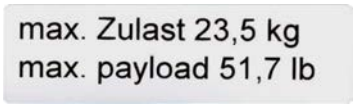
CAUTION: Do not remove the screw!



Attention ! Do not pull out locking button before assembly is completed!



Attention! Ensure that locking button is plugged in before removing device!



Denotes maximum allowed payload (total weight of the monitor, its power supply and cables).

Up
The tips of the arrows indicate the top of the package. They must always point upwards or the contents could be damaged.

Fragile, handle with care
Identifies packages with fragile or sensitive contents. Handle the package with care, do not drop it, and keep it from being bumped.

Keep dry
Packages identified in this way must be protected from high levels of humidity. The package must therefore be stored covered. If particularly large or bulky packages cannot be stored in warehouses or sheds, they must be carefully covered with tarpaulins.

3

Options and accessories

Throughout this Pre-Installation Manual, certain items will be labeled "US/Canada only" or "outside of US/Canada only". These designations are made to consider different standards in different regions. If there are any questions about what applies to your region, please contact your Stryker project team.

Some examples include:

Solutions for US/Canada only

- Shoulder Mount
- Tandem Mount
- TC Mount (Teletom and S-Series mounting options)
- Video/Power Arm (VPA)

4

Introduction

Note: All CHROMOPHARE configurations are site/room specific and there can be multiple configurations with different requirements in the same project.

This CHROMOPHARE Pre-Install Manual details and describes the structural, mechanical, and electrical requirements of the room or site to allow proper installation of CHROMOPHARE Surgical Lights and Flat Panel products. It also provides installation instructions for the SK Box where the power supply and light control back box housing is located. The SK Box is mounted before the installation of the CHROMOPHARE Surgical Light.

Note:

This manual applies to the surgical lights (single and combination light, ceiling-mounted) F 528 and F 628 as well as SLX528 and SLX628.

Sections/paragraphs in which the surgical lights F 528 and/or F 628 are mentioned apply also to the SLX528 and/or SLX628.

Sections/paragraphs in which the surgical lights SLX528 and/or SLX628 are mentioned apply only to the SLX528 and/or SLX628.

Note:

This Pre-Install Manual applies also for the E-Series surgical lights. However, in case an existing CHROMOPHARE system is to be relocated, please contact Stryker or your Stryker representative for weight and design specifications.

Note:

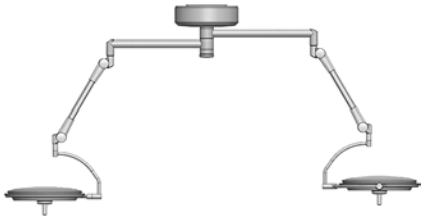
Throughout this manual, metric and/or imperial values are stated. The parenthetical values are conversions from the original values. Conversions may be approximate where appropriate.

4.1 CHROMOPHARE Mount and Suspension Options

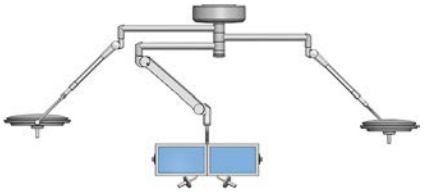
This section is provided for product option reference only.

Single Mount

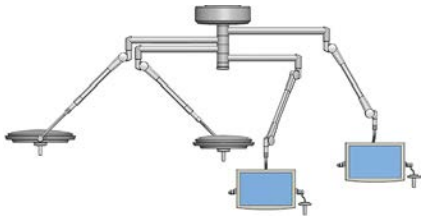
Dual Mount



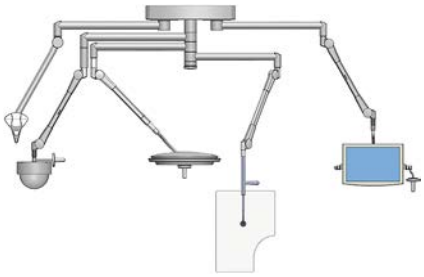
Triple Mount



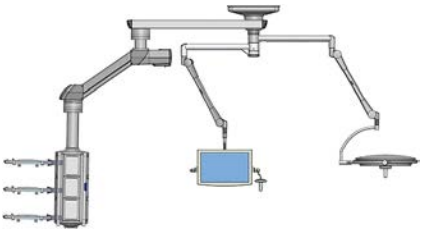
Quad Mount



Shoulder Mount (US/Canada only)



S-Series Standard/ TELETOM Tandem Mount (US/Canada only)



5

Intended Use

This CHROMOPHARE Pre-Install Manual is intended for use by technical professionals, installation and service personnel (e.g., architects, structural engineers, contractors, electricians, and pipe fitters) involved in the specification, design, and construction of the installation site.

The illustrations in this Pre-Install Manual are intended to provide a better understanding of the device; they are not necessarily drawn to scale and may deviate slightly from the actual model.

Warning:

Danger if not used as intended. Dangerous situations can occur any time the device is used for purposes beyond or other than those intended. Therefore, use the device only as intended.

- Strictly adhere to all specifications in this Pre-Install Manual.
- Only personnel authorised and certified by Stryker may install, readjust, modify or repair the devices.
- Do not operate with damaged components.
- It is the hospital/contractor's responsibility to install pre-installation items safely using the appropriate personal protective equipment.
- The intended use and misuse of the appropriate Operating Manual which is delivered with each device must also be complied with.

Claims of any kind due to damage resulting from improper use are excluded.
The operator is solely responsible for damages resulting from improper use.

6

Site readiness: Owner´s checklist

It is **CRITICAL** that all relevant items be completed before the scheduled installation date. Use the checklist below to make sure all requirements are met.

	Site visitation requirements: Stryker has been notified about any required safety training classes, hospital ID/badge requirements, parking instructions, and union requirements.
	The access point for receiving equipment is clear, allowing enough room for large, full size semi-truck/trailer and room to off load via lift gate if required.
	Floor protection is installed from delivery location to installation area as needed/required by the hospital and/or contractor.
	All needed elevators, doorways, and hallways are ready-to-use and wide enough for movement of equipment from the delivery/storage area to installation location. **Failure to prepare and identify adequate ceiling heights in the pathway and Operating Room/Intensive Care Unit prior to installation can prevent or cause significant delays to equipment installation.**
	The mounting site is prepared; ceiling support structures are built in accordance with Stryker pre-install manual specifications, and the ceiling support structures are adequate to support the weight, moment, and rotation specifications of the equipment
	The room is clear; all other equipment, material, and any other trades working at time of installation have been removed.
	The room is properly lit for the installation by means of temporary or permanent fixtures; lighting should not conflict with the installation/movement of equipment.
	The environment is dust free; use plastic sheeting to protect equipment.
	Electrical circuits are provided per Stryker pre-installation manual specifications and room CAD/elevations.
	Staging/transfer of equipment from unloading area to rooms.
	Removal of shipping containers/trash to customer/contractor supplied dumpster or drop off location.
	Storage facilities for equipment containers must be available prior to installation.

Note: If a return trip is required due to incomplete items, Stryker reserves the right to bill the hospital at the normal service rate.

7

Conduit and Wiring Checklist

Note:

Wherever conduit sizes are listed in inches, use the following metric sizes. These sizes are approximate.

- For 1" conduit, use 25 mm.
- For 1.25" conduit, use 32 mm.
- For 2" conduit, use 50 mm.

Note:

See section *Appendix [▸ 73]* for sample room configurations of circuit and conduit layouts.

See section *Electrical Requirements [▸ 47]* for more details.

7.1 For each suspension with Surgical Lights (F 528, F 628)

SK Enclosure

	Stryker-supplied SK enclosure is installed and easily accessible
	AC circuits available at SK enclosure for power to lights
	DC supply wire from SK enclosure to mounting plate for power to lights
	Two 1” conduits from SK enclosure to mounting plate (for Stryker use)
	For wall control: One 1” conduit from SK enclosure to wall control box (for Stryker use)

Electronics on Tube

	AC circuits available at mounting plate for power to lights
	For wall control: One 1” conduit from mounting plate to wall control box (for Stryker use)

For multiple mounts in one room

	One 1” conduit from one mounting plate to another mounting plate (for Stryker use)

7.2 For each suspension with Universal Display Mount (UDM) or ChromoView

Universal Display Mount (UDM)

	For AC power only: AC circuits available at mounting plate for power to monitor
	For Stryker integration: Stryker-supplied UDM junction box is installed within 18” (450 mm) of mounting plate
	For Stryker integration: One 1 ¼” conduit from UDM junction box to documentation station (for Stryker use)
	For NEC cable separation *(US only)*: One 1 ¼” conduit from mounting plate to documentation station (for Stryker use)

ChromoView

	For AC power only (outside of US/Canada only): AC circuits available at mounting plate for power to monitor
	For Stryker integration: One 1 ¼” conduit from mounting plate to documentation station *(for Stryker use)* *For dual flat panel (DFP): Use one* 2" and one 1 1/4" *conduit instead (for Stryker use)*
	For NEC cable separation *(US only)*: One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

7.3 For each suspension with StrykeCam HD Camera

	Space for the converter box is available in the documentation station
	For documentation station: One 1” conduit from mounting plate to converter box in documentation station (for Stryker use)
	For device control: One 1" conduit from wall control to documentation station (for Stryker use)

7.4 For each suspension with Video Power Arm (VPA - US/Canada only)

	AC circuits available as indicated at VPA outlet box for VPA power
	For Stryker integration: One 1 ¼” conduit from mounting plate to documentation station (for Stryker use)

7.5 For each TC mounted suspension (on S-Series or Teletom – US/Canada only)

The following details are for CHROMOPHARE items only. See S-Series or Teletom product manuals for requirements.

Surgical Lights (F 628, F 528)

	Stryker-supplied SK enclosure is installed and easily accessible
	AC circuits available at SK enclosure for power to lights
	DC supply wire from SK enclosure to TC junction box for power to lights
	When no other surgical lights in room: One 1” conduit from SK enclosure to wall control box (for Stryker use)
	When other surgical lights in room: One 1” conduit from boom mounting plate to other CHROMOPHARE mounting plate (for Stryker use)

Examination Light (F 300)

	AC circuits available at mini SK box for power to lights

Universal Display Mount (UDM)

	For AC power: AC circuits available at TC junction box for power to monitor
	For Stryker integration: Stryker supplied UDM junction box is installed within 18” (450 mm) of mounting plate
	For Stryker integration: One 1 ¼” conduit from mounting plate to documentation station (for Stryker use)
	For NEC cable separation *(US only)*: One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

ChromoView

	For AC power (*outside of US/Canada only*): AC circuits available at TC junction box for power to monitor
	For Stryker integration: One 1 ¼” conduit from mounting plate to documentation station (for Stryker use)
	For NEC cable separation *(US only)*: One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

7.6 For upgrades of suspension with Universal Display Mount or ChromoView

Universal Display Mount (UDM)

	For Stryker integration: Stryker supplied UDM junction box is installed within 18” (450 mm) of mounting plate
	For NEC cable separation *(US only)*: One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

ChromoView

	For NEC cable separation *(US only)*: One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

8

Pre-Installation Responsibilities

8.1 Stryker's Responsibilities

Stryker is responsible for:

- Advising the hospital of a proposed time-frame for installation of Stryker-supplied infrastructure.
- Checking in with hospital personnel and/or contractor to announce arrival.
- Running and terminating all Stryker-supplied audio visual cables required for Stryker equipment.
- Inspecting all installed suspensions for quality assurance.

Stryker supplies the following components to the hospital/contractor for pre-installation:

- Equipment Configuration Drawings (including elevations, CAD, and room layouts), as applicable
- Mounting plate
- Mounting plate with concrete anchors (outside of US/Canada only)
- SK Enclosures
- Junction box (10x8x4" [254x203.2x101.6 mm]) for Universal Display Mount (rubber grommets for junction box are available upon request)
- Back box for recessed wall control
- Tube Combination (TC) junction box for TC mounted lights (US/Canada only)

Note: Stryker will not be responsible for the support structure design or the materials used. For technical questions, contact Stryker or your Stryker representative.

8.2 Hospital's Responsibilities

Review this manual in its entirety before proceeding with pre-installation construction. Hospital/contractor responsibilities are outlined and specified throughout the entire manual.

Caution:

The hospital/contractor has final responsibility for the strength and rigidity of the support structure.

An inadequate support structure will affect the ability of products to perform in the manner intended. An inadequate support structure design can also result in damage to the equipment.

Equipment warranty service charges related to an inadequate support structure design or installation are at the customer's expense.

Caution:

Disclaimer

If the integration cables are provided by the customer or by third parties contracted by the customer, Stryker does not assume any liability for the general and application-specific operability and operational suitability of said cables.

- ✓ Therefore:
- The customer is responsible for testing the cables for suitability of the respective application. This primarily applies to the unusual loads said cables are subjected to, particularly at pivot points.

Note:

The hospital is responsible for ensuring that the mounting surface of the ceiling anchor plate and the ceiling cover are flush. These surfaces must not have different heights so that the entire ceiling cover can be mounted flush with the ceiling. The ceiling cover is installed by personnel authorized and certified by Stryker.

The owner must design, supply, and install all components above the finished ceiling. These components include the supporting support structure, high-voltage/ low-voltage/ data/video conduits.

To function safely and effectively, the CHROMOPHARE products must be installed on a strong and rigid ceiling support. It requires a significant support structure above the ceiling. An installed unit must support large weights and moments and must meet stringent rotational criteria. Stryker strongly recommends that the owner consult a structural engineer before designing and installing the support structure.

The owner or the owner's consulting structural engineer must verify the following to ensure a safe and satisfactory installation:

- The building structure must be capable of supporting the loads involved, see section *Weight and Design Specifications [▸ 27]*.
- The building structure must be capable of supporting any additional loading (e.g., earthquakes) required by local building codes.
- All electrical designs and installations must meet appropriate code requirements.

8.2.1 Support Structure Design and Construction

While in service, even the slightest deviation of the CHROMOPHARE mounting plate and support structure, out of the required horizontal plane, can cause the CHROMOPHARE to drift. To prevent this, the mounting plate must be properly installed in a horizontal plane (± 0.1 degree), with the studs pointing down. The support structure must also be rigid enough to prevent the mounting plate from rotating more than 0.1 degree when the specified design load is applied.

Factors such as building structure (e.g., concrete, steel, brick, etc.), the amount of space available above the finished ceiling, obstructions within the ceiling cavity, owner restrictions (e.g., welding within the ceiling cavity), economics, and contractor preferences may require different approaches to the design and installation of CHROMOPHARE support structures.

See section *Structural Requirements [▸ 26]* for details.

8.2.2 Wiring/Electrical Requirements

The hospital/contractor must install the power lines between the main supply and the CHROMOPHARE Surgical Light. Refer to the Equipment Configuration Drawings (provided by Stryker) for the type and quantity of circuits required.
Note: Wiring must be installed and power must be able to be turned on prior to installation of the CHROMOPHARE Surgical Light.

After the installation of the CHROMOPHARE Surgical Light is complete, the hospital/contractor must make all final AC and DC connections (live, neutral, protective earth) to the equipment. Electrical work is to be performed only by skilled electricians. See section *Electrical Requirements [▸ 47]* for details.

8.2.3 Testing

The hospital/contractor must test and certify all system components before installation of the CHROMOPHARE is scheduled. Testing and certification must include support structure and electrical wiring.

8.2.4 Transport, Packaging, Handling and Storage

Note:

Only personnel authorized and certified by Stryker may install and perform the initial start-up of the product.

However, users, hospital staff or maintenance personnel from the responsible organization may be required to handle packages before or during installation and thereafter. The following instructions must be followed when performing such tasks.

Refer to section *Transport and storage conditions [▶ 70]* for conditions that must be observed during transport and storage.

See also

Transport and storage conditions [▶ 70]

8.2.4.1 Safety instructions

Warning:

Injury to personnel or material damage due to improper unloading, loading and transport!

Improper unloading, loading and transport as well as unloading, loading and transport by untrained personnel can result in components falling or toppling over. This can cause injury to personnel or damage to the property.

✓ Therefore:

- The unloading and loading of packages during delivery and transport should be performed by trained personnel only.
- Exercise due care when unloading and loading of packages during delivery and transport and be sure to comply with the symbols and instructions on the packaging.
- Use proper lifting equipment and procedures. Loaded shipping pallets are heavy and can cause injury to people or damage to equipment if not handled properly.
- Lift equipment only from designated points to prevent tipping and damage to property.
- Packaging should only be removed by personnel authorized and certified by Stryker.

Warning:

Stryker ships CHROMOPHARE Surgical Lighting components via LTL truck or moving van in specially constructed reinforced packaging. **The equipment and its packaging require a pallet jack for safe transportation. Pallet jack to be made available upon arrival.** Handle and store the equipment properly to avoid injury to personnel or damage to the components.

Note:

Boxes are to be opened only by Stryker personnel, and are labeled as such. Any missing components resulting from unauthorized entry into the boxes are the responsibility of the owner and will be invoiced with a change order.

8.2.4.2 Symbols on the packaging

See section *Product symbol definition [▸ 7]*.

8.2.4.3 Transport inspection

Check the delivery immediately for completeness and any damage during transport.

For obvious transport damage, do the following:

- Do not accept the delivery, or accept it only conditionally.
- Note the extent of the damage on the shipping documents or on the transporter's delivery note.
- File a complaint.

Note:

Report every defect as soon as it is found. Claims for damages may be submitted only within the applicable claim period.

- To limit transport damage as far as possible, the original packaging should be used when returning a product to Stryker or your Stryker representative. Provide the following information: Owner's name and address, serial number (see model plate), a description of the defect.
- For any queries, please contact Stryker or your Stryker representative.

8.2.4.4 Packaging

Packaging notes

Packaging is commensurate with expected transport conditions. Only environmentally safe materials were used for packaging.

The packaging is intended to protect individual components from transport damage, corrosion and other damage until installation is complete. Therefore, do not destroy the packaging and remove it only immediately prior to installation.

Working with packaging materials

Dispose of packaging materials in accordance with legal regulations and local ordinances.

Caution:

Incorrect disposal presents an environment hazard

Packaging is made of valuable raw materials. In many cases, additional uses for the materials are possible, or they can be appropriately recycled for further use.

✓ Therefore:

- Dispose of packaging in an environmentally safe manner.
- Follow local disposal ordinances. If necessary, hire a professional disposal service.

8.2.4.5 Transport

Transporting pallets with a forklift truck

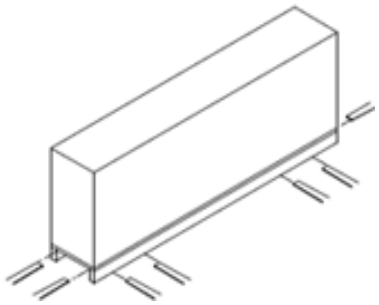


Figure 1. Transport

Boxes on pallets can be moved using a forklift provided that:

- The construction of the forklift truck must be appropriate to the weight of the units for transport.
- The item must be firmly secured to the pallet.
- The driver must be authorized to drive the forklift truck.

Loading onto the forklift:

1. Drive the forklift truck forward, positioning the forks between or beneath the pallet rails.
2. Drive forward until the forks protrude from the opposite side.
3. If the centre of gravity is off-centre, make sure the pallet cannot tip over.
4. Lift the pallet and begin transporting.

8.2.4.6 Pre-Installation Components

Upon request, Stryker ships the applicable, pre-installation items listed in Section *Stryker's Responsibilities [▸ 19]*, in advance of the other CHROMOPHARE Surgical Lighting components. All pre-installation components should be delivered to the hospital/ contractor upon receipt.

9

Structural Requirements

This section provides information required to design the support structure for the CHROMOPHARE Surgical Lights.

Responsibility for proper design of support structure lies entirely with the hospital/ contractor and is not covered through warranty by Stryker.

The illustrations in this section are suggestions for the support structure design, but design and materials used are at the discretion of the structural engineer based upon specific site requirements.

The support structure, electrical conduits, junctions boxes, video, data, and other services are to be installed by the hospital or contractor and are not contained within the scope of work for Stryker. Stryker assumes all work has been performed in accordance with all applicable engineering and electrical building codes.

For questions regarding pre-installation requirements for any CHROMOPHARE product, contact Stryker or your Stryker representative.

Note:

Prior to the assembly of the CHROMOPHARE system, qualified certification of the fulfilment of the structural requirements must be carried out.

9.1 Support Structure Design Loads

The weights and moments are transferred to the supporting ceiling via the ceiling mount. An installed unit must support large weights and moments and must meet stringent rotational criteria. To function safely and effectively, the CHROMOPHARE system must be installed on a strong and rigid ceiling support. It requires a significant support structure above the ceiling.

The structural engineer must provide proof of stability for each particular case. When determining the necessary static load capacity of the ceiling, it may be necessary to take additional loads on the ceiling into account, as well as the required safety factor. The transfer of forces to the ceiling must be secured. The load capacity of the ceiling must be confirmed by a structural engineer.

Weights and moments must never be exceeded. Adhere to the applicable regional building regulations. The anchorage types described in section *Appendix [▸ 73]* refer to reinforced concrete ceilings of an appropriate and professional standard according to DIN 1045. For other types of ceiling, safe and viable ceiling anchoring must be planned on site.

Warning:

Responsibility for proper design of the support structure lies entirely with the hospital/ contractor and is not covered through warranty by Stryker. An improperly designed support structure may result in poor performance or damage to equipment and possible injury to the user.

Incorrect drilling (e.g., drilling into a reinforcement bar) may compromise the load capacity and load distribution in buildings. This can lead to the collapse of building parts and cause severe personal injury.

Service charges related to inadequate support structure design are at the customer's expense.

Stryker will not review or approve customer support structures. This is the responsibility of the customer's architect and designated structural engineer. Any visit by Stryker personnel to view the support structure is only to compare its position to ceiling plans.

It is the hospital/contractor's responsibility to:

Make sure that Stryker equipment and infrastructure is not impeded by the design of the support structure.

Design and install the support structure to:

- Support weight and moment loads as required, see section *Weight and Design Specifications [▸ 27]* for specific details.
- Satisfy all applicable regulations including, but not limited to, building and electrical codes.

In case of incorrect drilling, immediately consult the structural engineer responsible.

Install Stryker-supplied mounting plate at the bottom of each support structure as specified in section *Weight and Design Specifications [▸ 27]*. THIS MUST BE INSTALLED PRIOR TO STRYKER ARRIVING ON-SITE FOR INSTALLATION.

Install a 24" x 24" (609.6 x 609.6 mm) access panel directly adjacent to each mounting point for installation, maintenance, and future service.

9.2 Weight and Design Specifications

Weights and Moments

The support structure must be designed to the weights and moments shown in the table below. Designing for the heaviest model with the highest rotational moment will provide adequate support for the heaviest model. Weights, moments and center of gravities for specific configurations are available upon request.

The installed weights and moments shown below include the CHROMOPHARE components and payload.

Mounting Plate Recommended Design Specifications		
	Maximum Weight kg/lb	Maximum Moment Nm/ ft-lb
Single Common	498/1,100	7,660/5,650
Tandem Common	997/2,200	15,320/11,300
Universal	250/555	2,700/1,992
Shoulder	250/555	2,700/1,992
Standard	250/555	2,700/1,992

When required, detailed system weights can be provided. It is recommended to design and construct structural supports to meet the design specifications above.

While in service, even the slightest deviation of the CHROMOPHARE mounting plate, out of the required horizontal plane, can cause the CHROMOPHARE to drift.

To prevent this, the mounting plate must be properly installed in a horizontal plane (± 0.1 degree), with the studs pointing down. The support structure must also be rigid enough to prevent the mounting plate from rotating more than 0.1 degree when the specified design load is applied.

Note: If designing a CHROMOPHARE system to be tandem mounted with a boom (US/ Canada only), check appropriate manual to determine mounting plate/structural requirements.

Note:

This Pre-Install Manual applies also for the E-Series surgical lights. However, in case an existing CHROMOPHARE system is to be relocated, please contact Stryker or your Stryker representative for weight and design specifications.

9.3 Mounting Scenarios

The Stryker-supplied mounting plate is the approved surface for mounting the CHROMOPHARE system. It is the responsibility of the hospital/contractor to install the plate, as it is a considered part of the structure. The mounting plate MUST be installed by the hospital/contractor prior to the installation start date.

It is the responsibility of the structural engineer to design and specify materials for proper construction of the support structure. These diagrams are intended to demonstrate the relative location of the mounting plate to the finished ceiling. Orientation of the mounting plate other than that shown in the diagram could cause delays in installation or require modification to the support structure.

Note: Contact Stryker personnel for information on which mounting plate is applicable to a specific project.

⚠ Danger:

Danger from collapsing building parts if installation is not properly carried out

Improper installation of the CHROMOPHARE system may result in it working loose from the ceiling mount and falling. This can cause life-threatening injuries for the patient and surgical staff.

- ✓ Therefore:
- Strictly adhere to all specifications in this Pre-Install manual.
- Make sure that structural requirements are fulfilled.

Note:

The hospital is responsible for ensuring that the mounting surface of the ceiling anchor plate and the ceiling cover are flush. These surfaces must not have different heights so that the entire ceiling cover can be mounted flush with the ceiling. The ceiling cover is installed by personnel authorized and certified by Stryker.

9.3.1 Single Common Plate

9.3.1.1 Mounting Plate Dimensions

Note: Indicated holes are used for mounting Stryker equipment to the mounting plate and may not be used or obstructed while mounting the plate to the support structure.

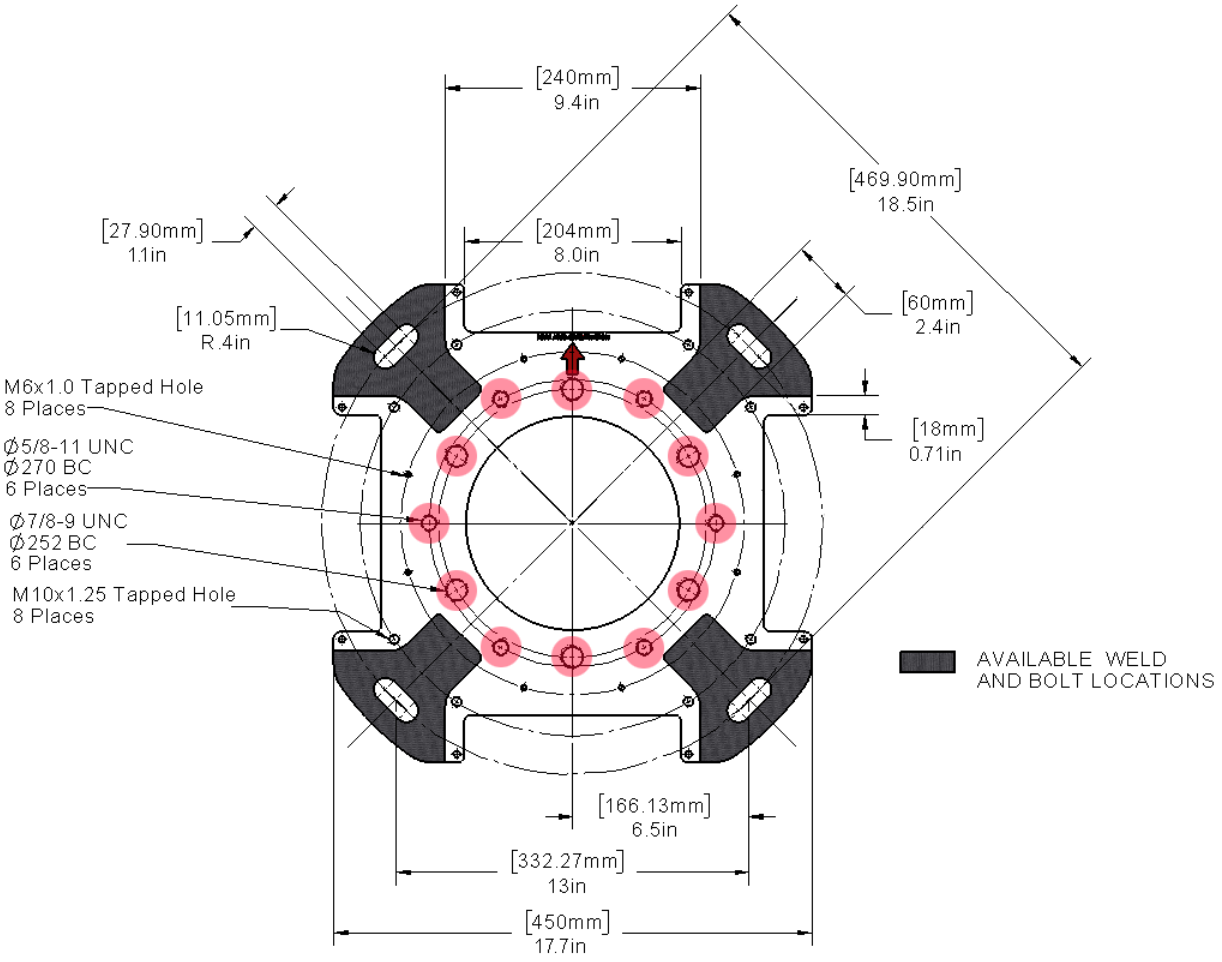


Figure 2. Single Common Plate P29282

Notes

- Available weld and bolt locations: marked dark gray
- UNC: Unified National Coarse
- B.C.: Bolt Hole Center

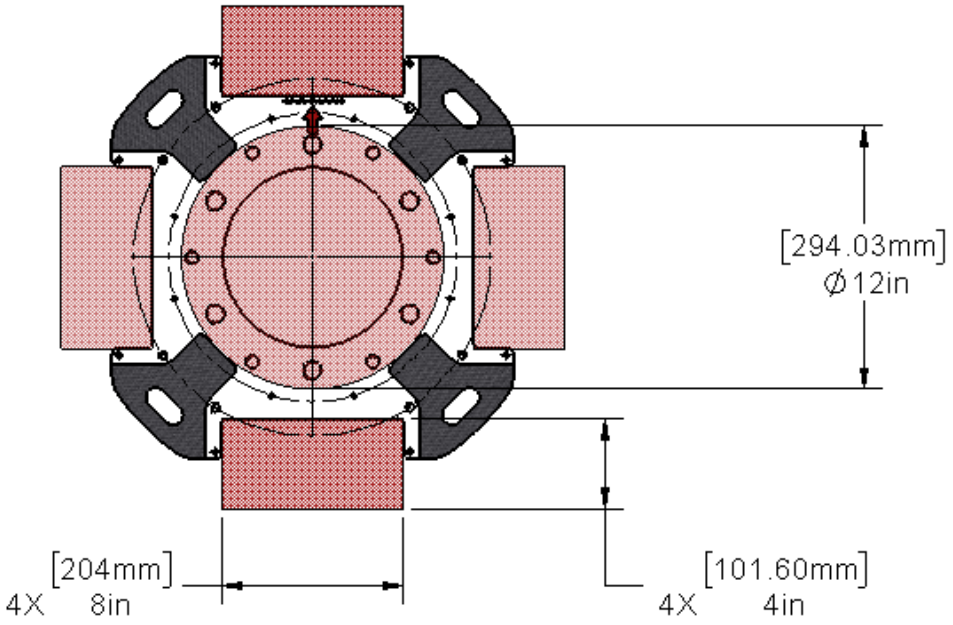
9.3.1.2 No-Fly Zone

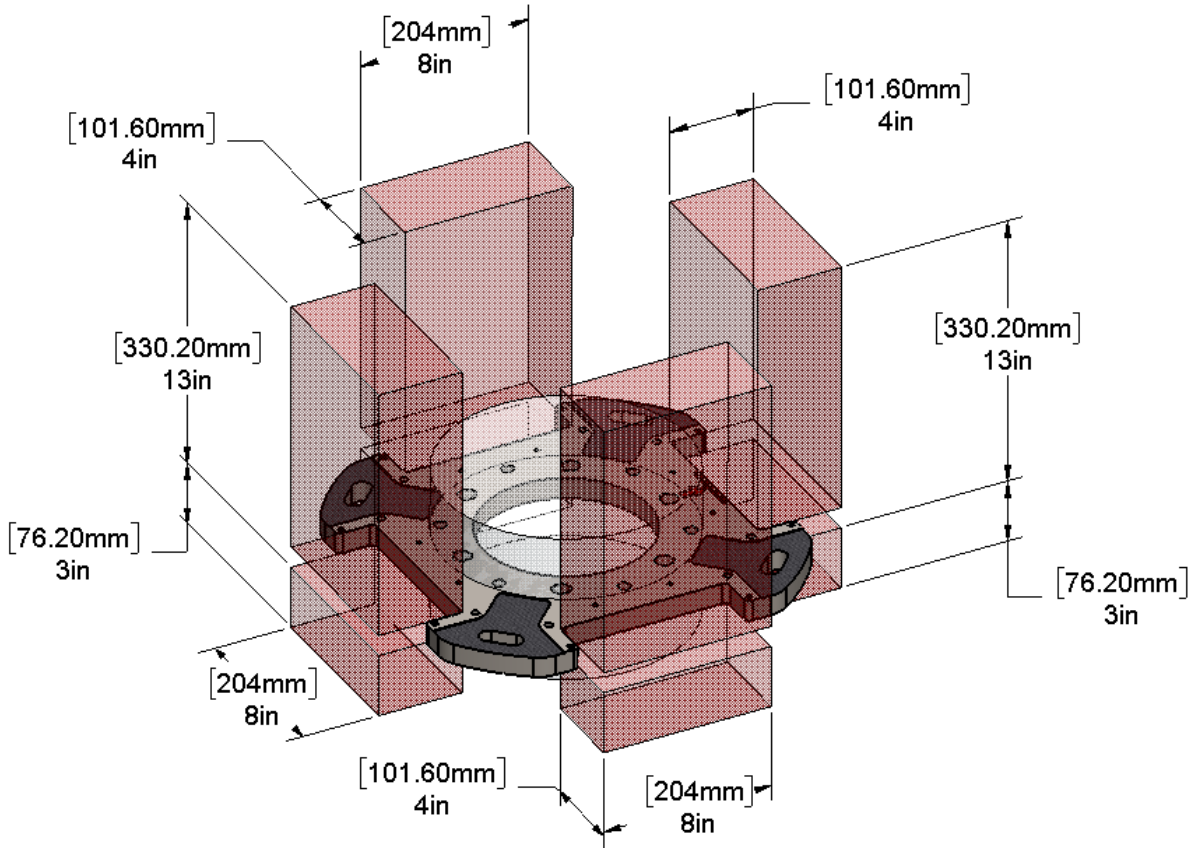
Caution:

The hospital and/or contractor must make sure that structural/utility components do not interfere with ANY part of the CHROMOPHARE System

The following areas must be left clear for Stryker to be able to properly install the complete CHROMOPHARE System:

- 12” (304.8 mm) above the CHROMOPHARE System components within the interstitial space
- 0.5” (12.7 mm) around the outside of the CHROMOPHARE System ceiling cover boundary.
- The only items that can be within the no fly zone are the support structure elements above the designed mounting areas outlined in the Single and Common Tandem Plate sections. The risers will also be mounted in this zone.

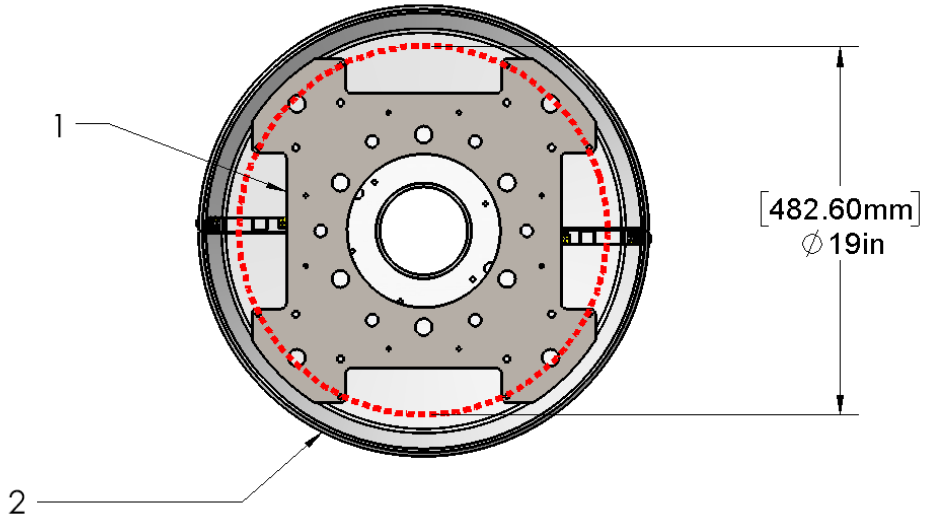




Consideration should be given for structural/utility components that can interfere with the system installation, such as:

- Lighting fixtures
- Heating, ventilation, and air conditioning
- Sprinkler system heads
- Mechanical systems
- Speakers
- Fire/smoke detector systems
- Structural beams

9.3.1.3 Ceiling Cover/Cutout (Top View)



1	Single common plate	2	Ceiling cover boundary Ø 590 mm (23.23”)

Note:

If the single common plate is being installed in existing ceiling, the ceiling cutout will need to be 539 mm (21.23”) in diameter to fit the plate.

9.3.1.4 Installation (Front View)

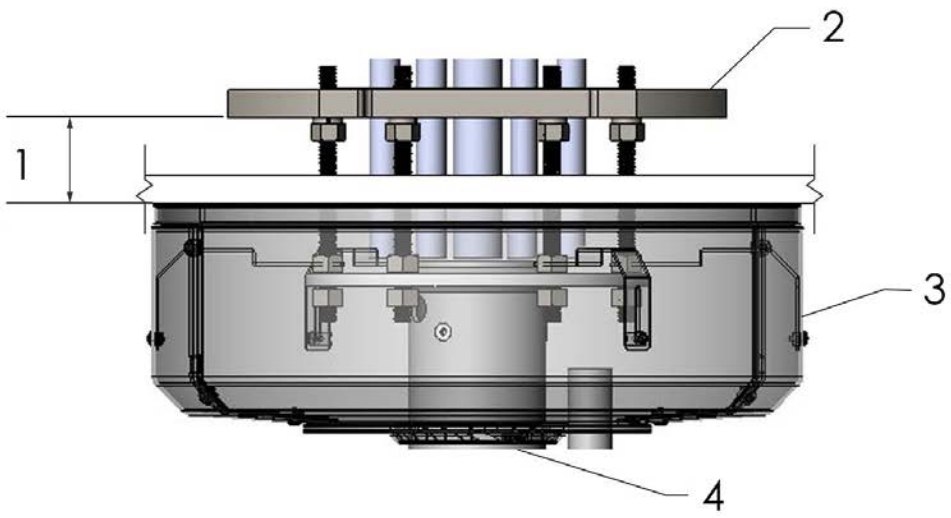


Figure 3. Single Common Plate

1	Raised from finished ceiling 3” (76.2 mm)	3	Cover
2	Single common plate	4	CHROMOPHARE product

9.3.2 CHROMOPHARE Standard Plate

9.3.2.1 Mounting Plate Dimensions

The plate can be ordered and installed with or without the conduit tab, which is shown here.

Note: Indicated holes are used for mounting Stryker equipment to the mounting plate and may not be used or obstructed while mounting the plate to the support structure.

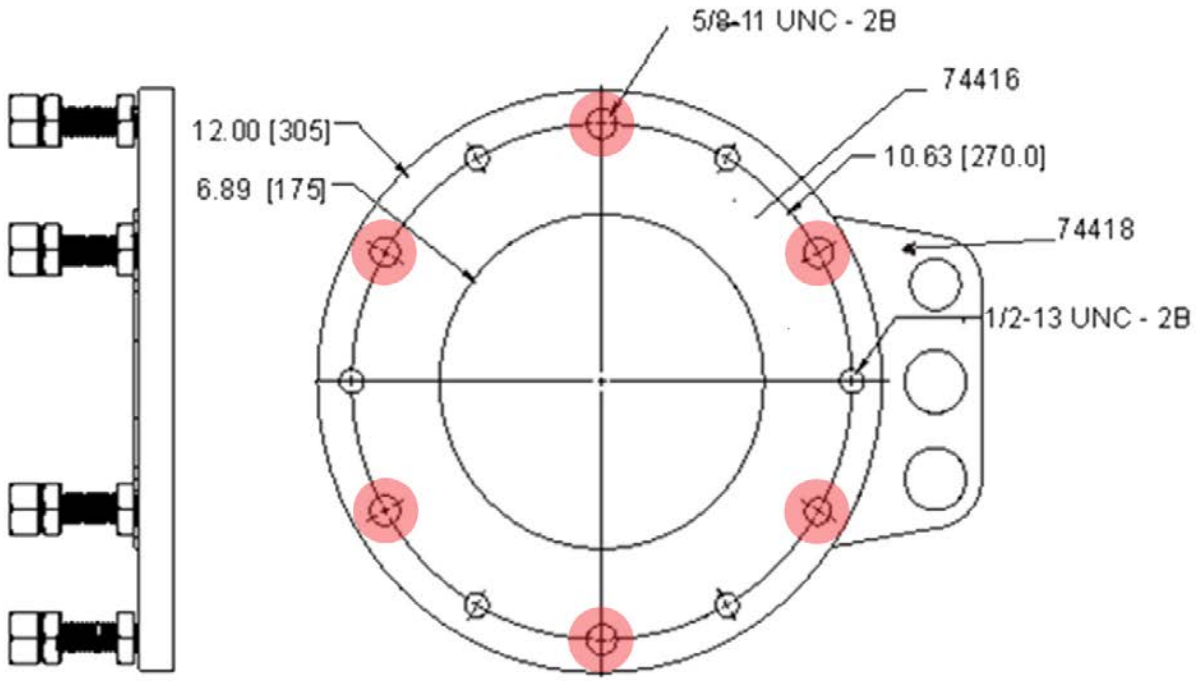
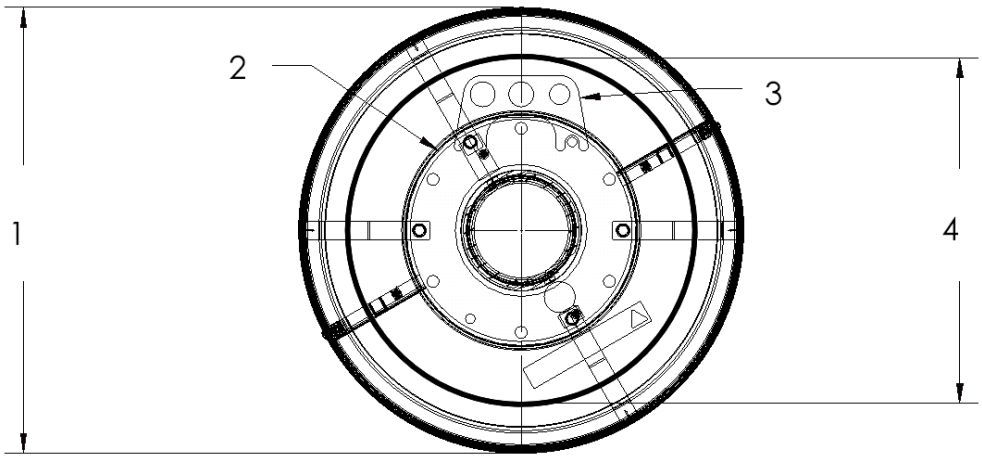


Figure 4. CHROMOPHARE Standard Mount Plate CB 5108675

Notes

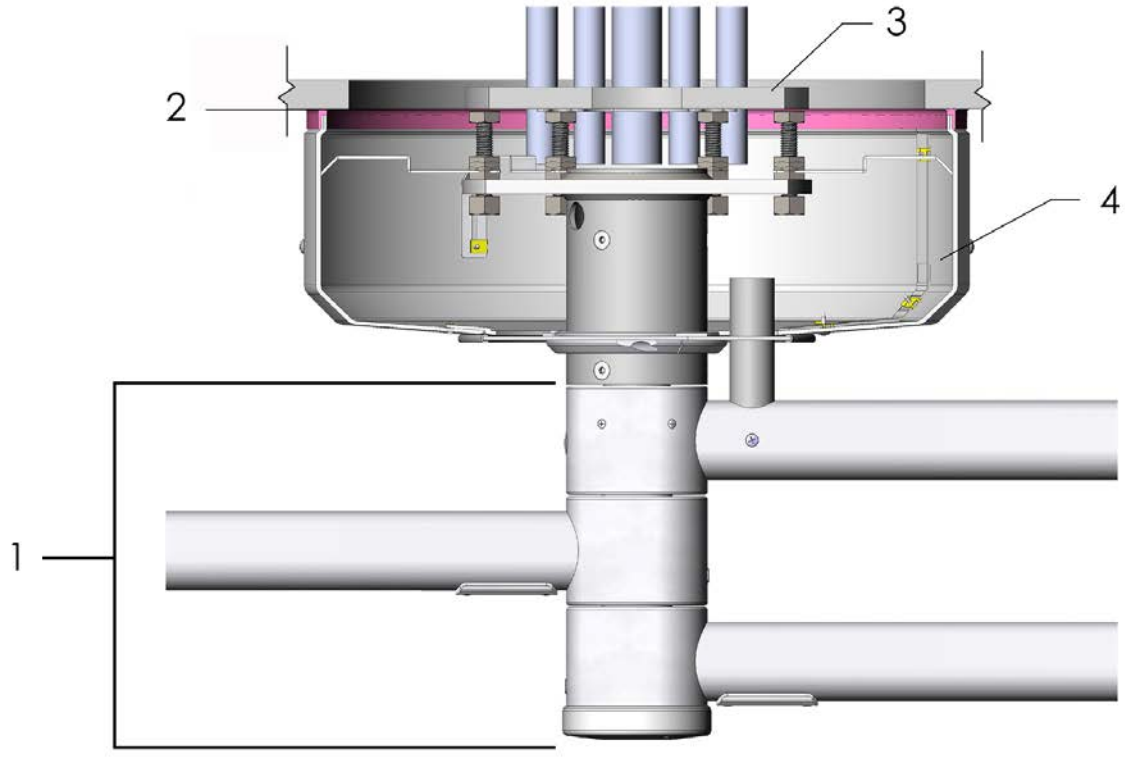
- Material: A36 Steel Plate
- Dimensions are in inches [mm]
- UNC-2B: Unified National Coarse, Class 2B
- B.C.: Bolt Hole Center
- 5/8-11 UNC and ½-13 UNC are equally spaced apart on a 10.63 BC

9.3.2.2 Ceiling Cover/Cutout (Top View)



1	Ceiling cover boundary 23in (590 mm)	3	Conduit tab
2	Single standard plate	4	Ceiling cutout Ø 18in (457.2 mm)

9.3.2.3 Installation (Front View)



1	CHROMOPHARE product	3	Single standard plate
2	Flush with finished ceiling	4	Cover

9.3.3 Tandem Common Plate (US/Canada only)

Caution:

Ensure that the tandem structure is mounted in the proper orientation by referring to the Equipment Configuration Drawings specifically related to the project.

9.3.3.1 Mounting Plate Dimensions

Note: Indicated holes are used for mounting Stryker equipment to the mounting plate and may not be used or obstructed while mounting the plate to the support structure.

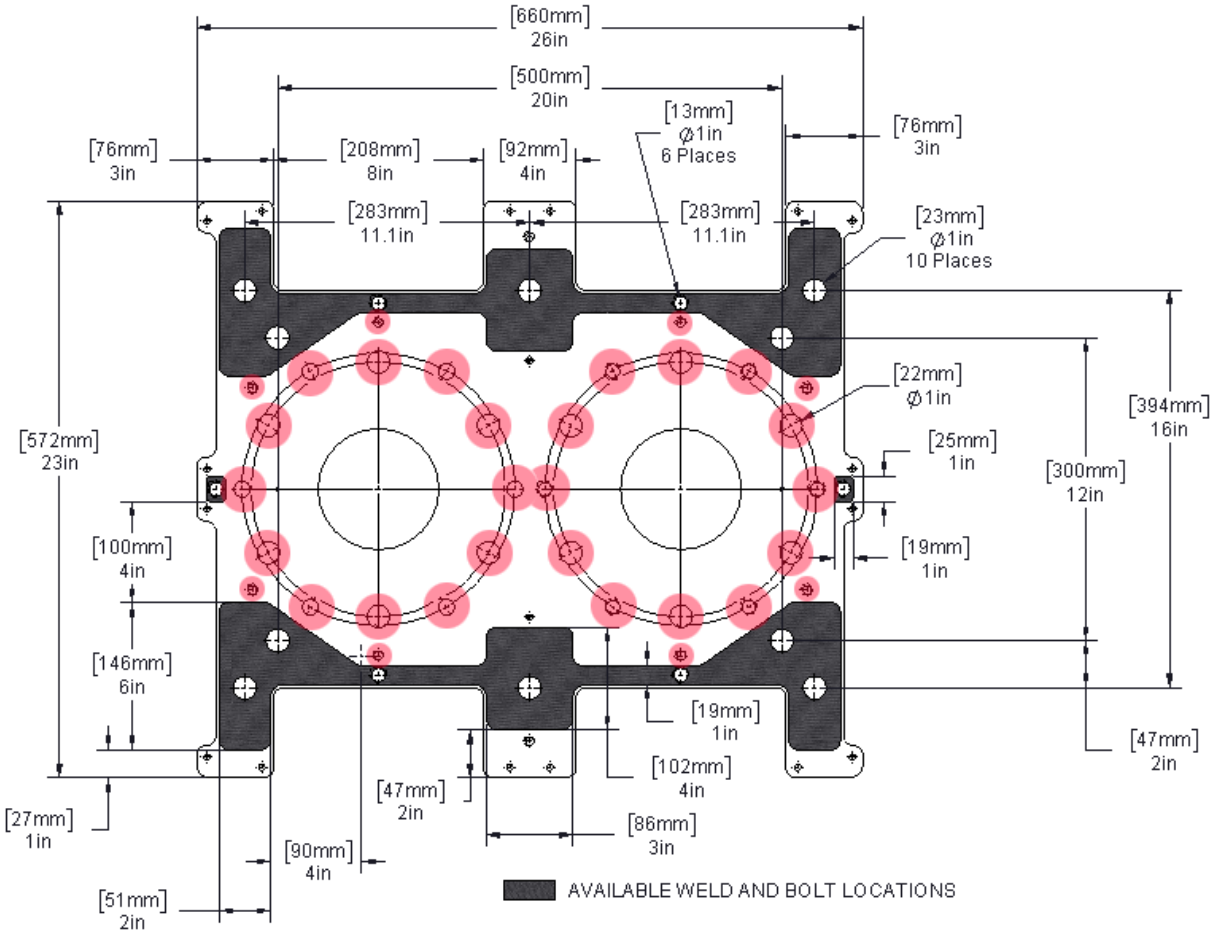


Figure 5. Tandem Common Plate P29280

Notes

- Available weld and bolt locations: marked dark gray

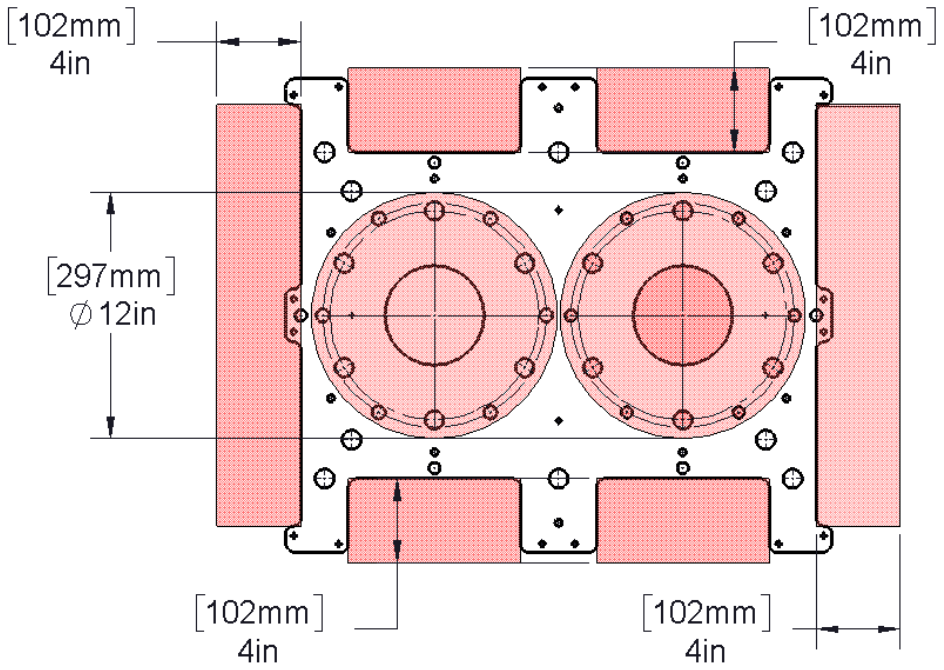
9.3.3.2 No-Fly Zone

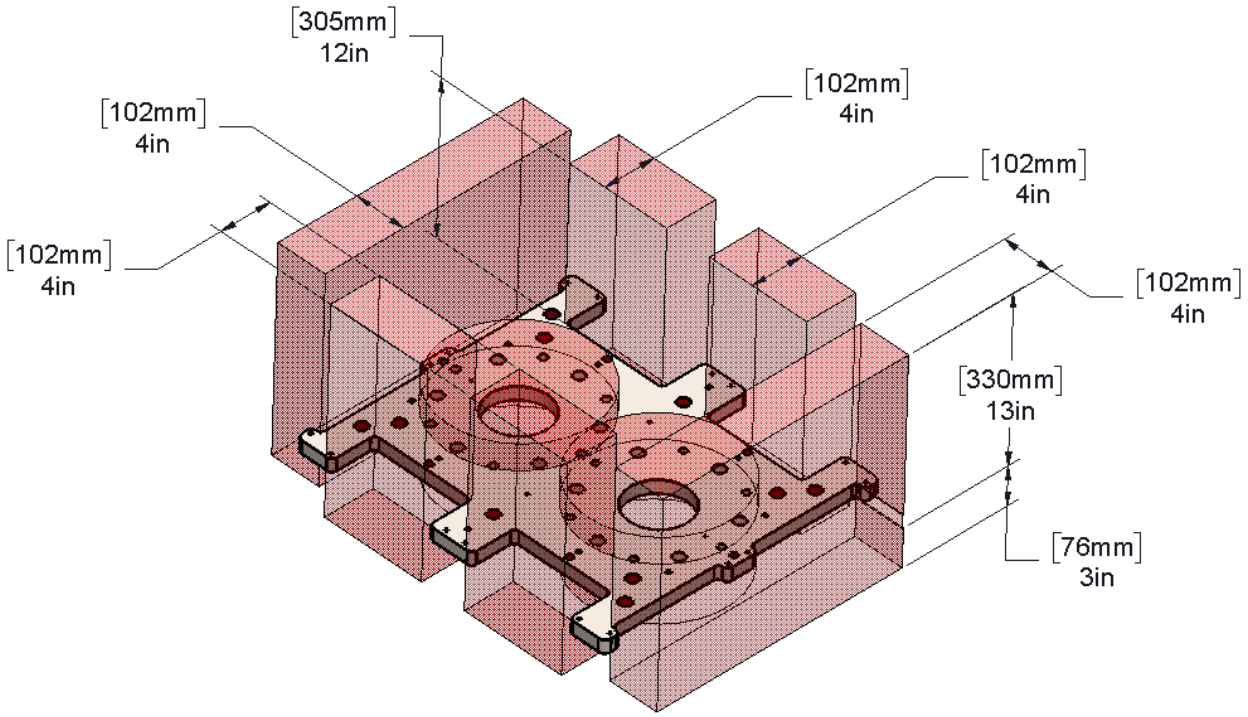
Caution:

The hospital and/or contractor must make sure that structural/utility components do not interfere with ANY part of the CHROMOPHARE System

The following areas must be left clear for Stryker to be able to properly install the complete CHROMOPHARE System:

- 12” (304.8 mm) above the CHROMOPHARE System components within the interstitial space
- 0.5” (12.7 mm) around the outside of the CHROMOPHARE System ceiling cover boundary.
- The only items that can be within the no fly zone are the support structure elements above the designed mounting areas outlined in the Single and Common Tandem Plate sections. The risers will also be mounted in this zone.

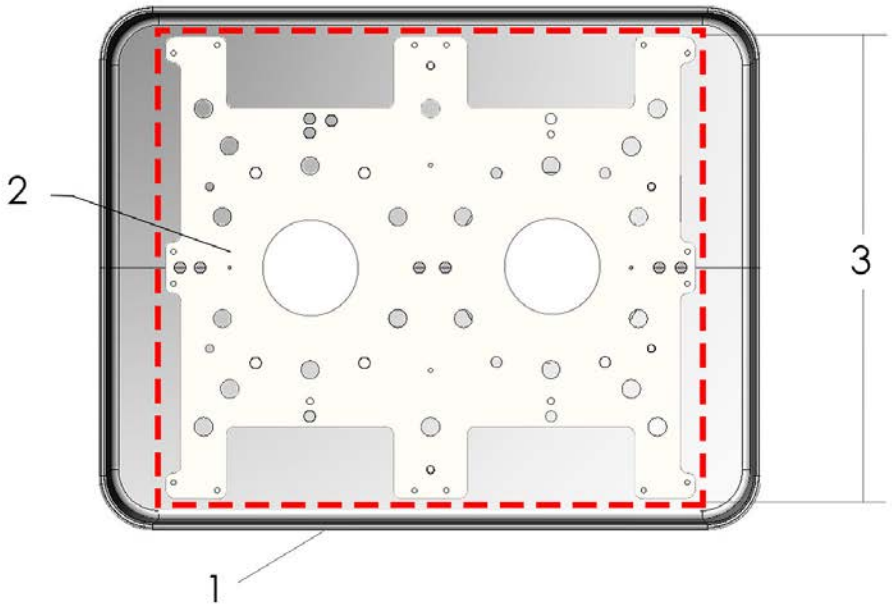




Consideration should be given for structural/utility components that can interfere with the system installation, such as:

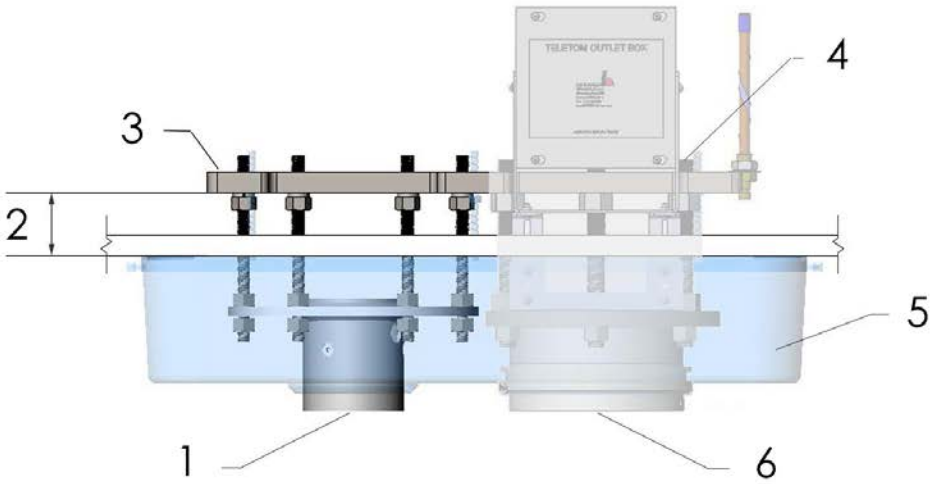
- Lighting fixtures
- Heating, ventilation, and air conditioning
- Sprinkler system heads
- Mechanical systems
- Speakers
- Fire/smoke detector systems
- Structural beams

9.3.3.3 Ceiling Cover/Cutout (Top View)



1	Ceiling cover boundary 25x32” rect-angle (635x813 mm)	3	Ceiling cutout 23x27” (584x686 mm)
2	Common plate		

9.3.3.4 Installation (Front View)



1	CHROMOPHARE product	4	7/8” threaded rod
2	Raised from finished ceiling 3” (76.2 mm)	5	Cover
3	Common plate	6	S-Series standard or Teletom product

9.3.4 Shoulder Mount Plate (US/Canada only)

9.3.4.1 Mounting Plate Dimensions

Note: Indicated holes are used for mounting Stryker equipment to the mounting plate and may not be used or obstructed while mounting the plate to the support structure.

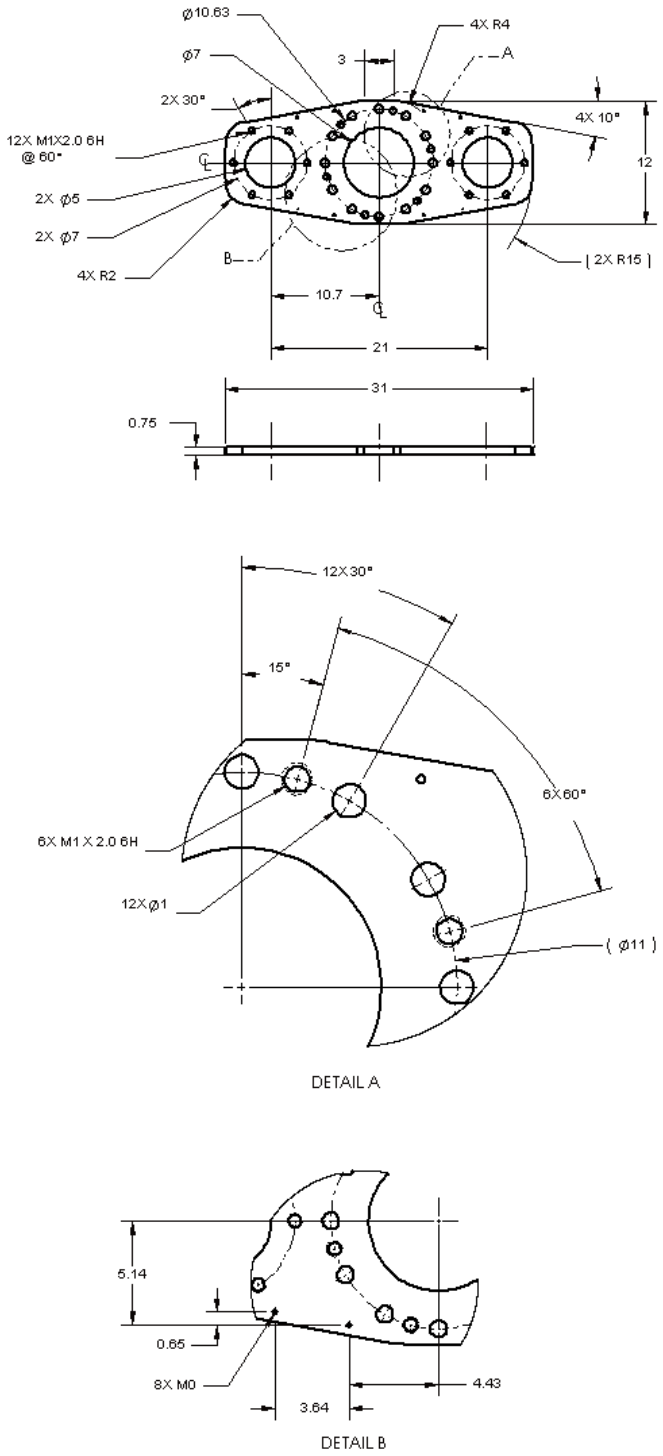


Figure 6. Dimensions are in inches

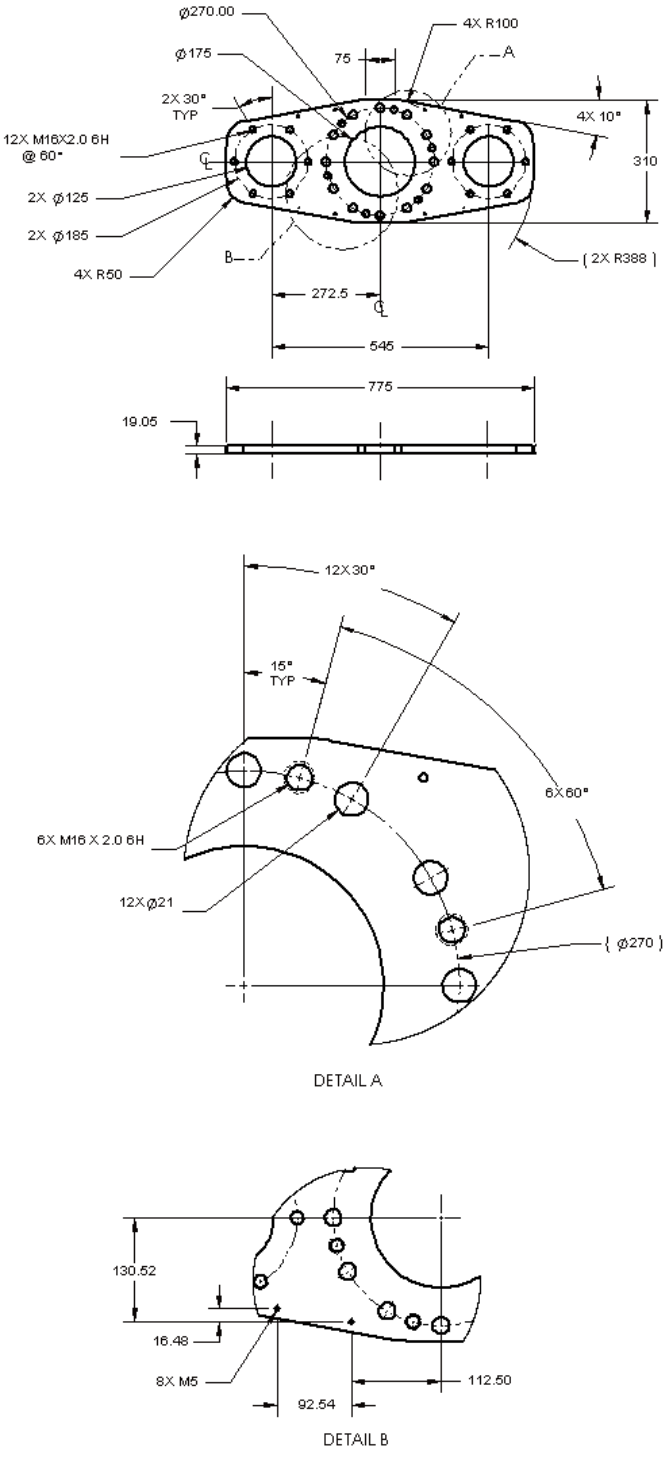
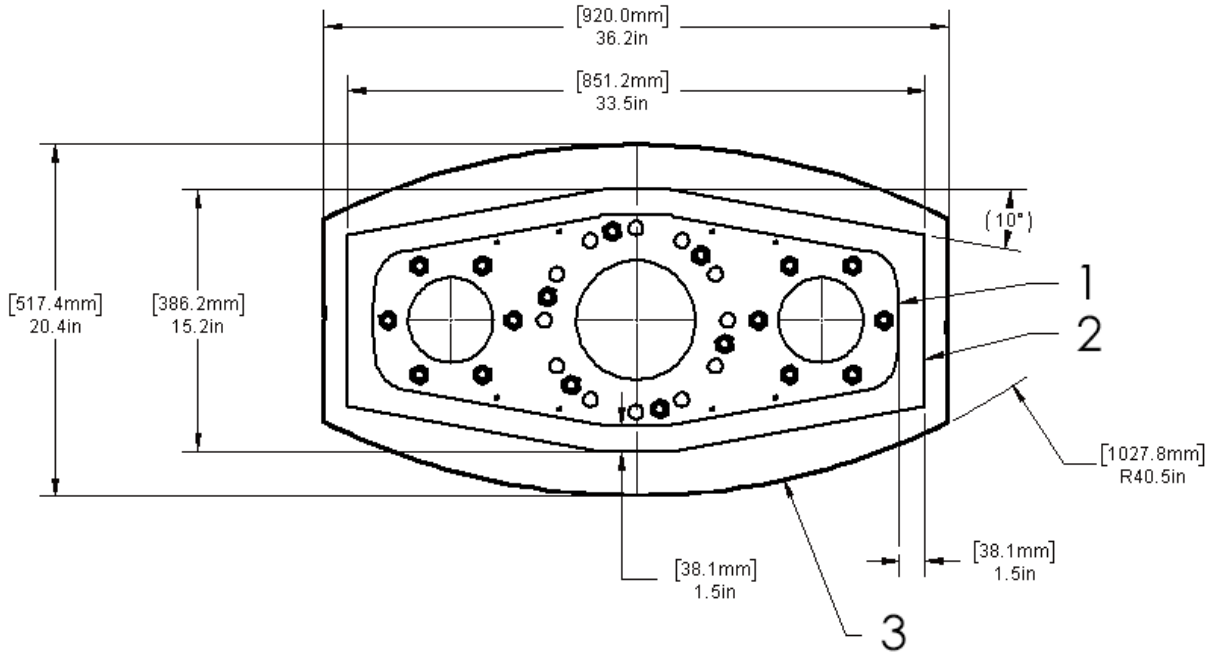


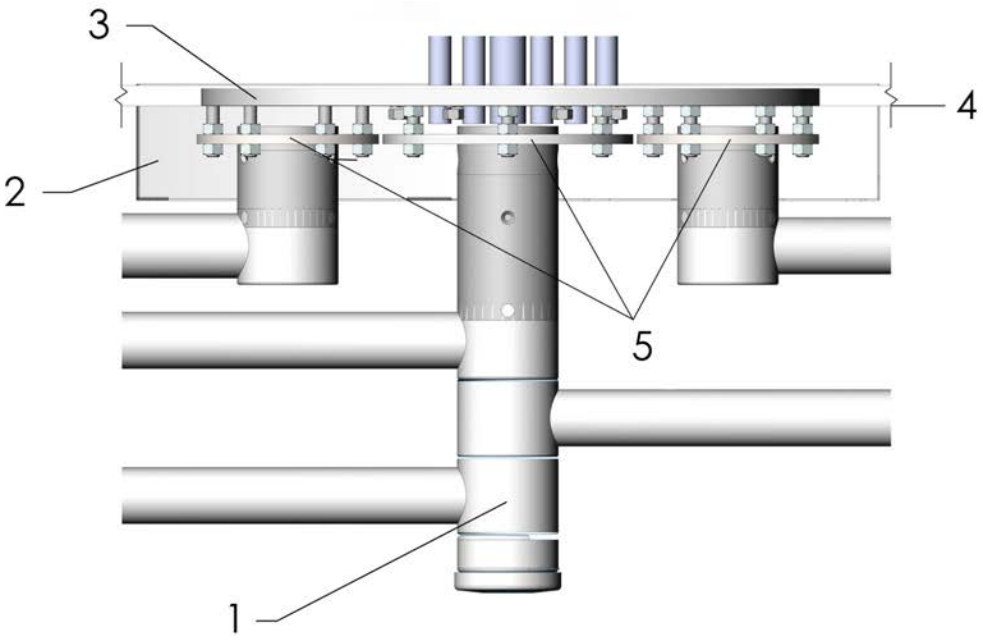
Figure 7. Dimensions are in mm

9.3.4.2 Ceiling Cover/Cutout (Top View)



1	Mounting plate	3	Ceiling cover
2	Ceiling cutout		

9.3.4.3 Installation (Front View)



1	CHROMOPHARE product	4	Flush with finished ceiling
2	Cover	5	Flange
3	Shoulder plate		

9.3.5 Universal Adapter Plate

9.3.5.1 Mounting Plate Dimensions

Note: Indicated holes are used for mounting Stryker equipment to the mounting plate and may not be used or obstructed while mounting the plate to the support structure.

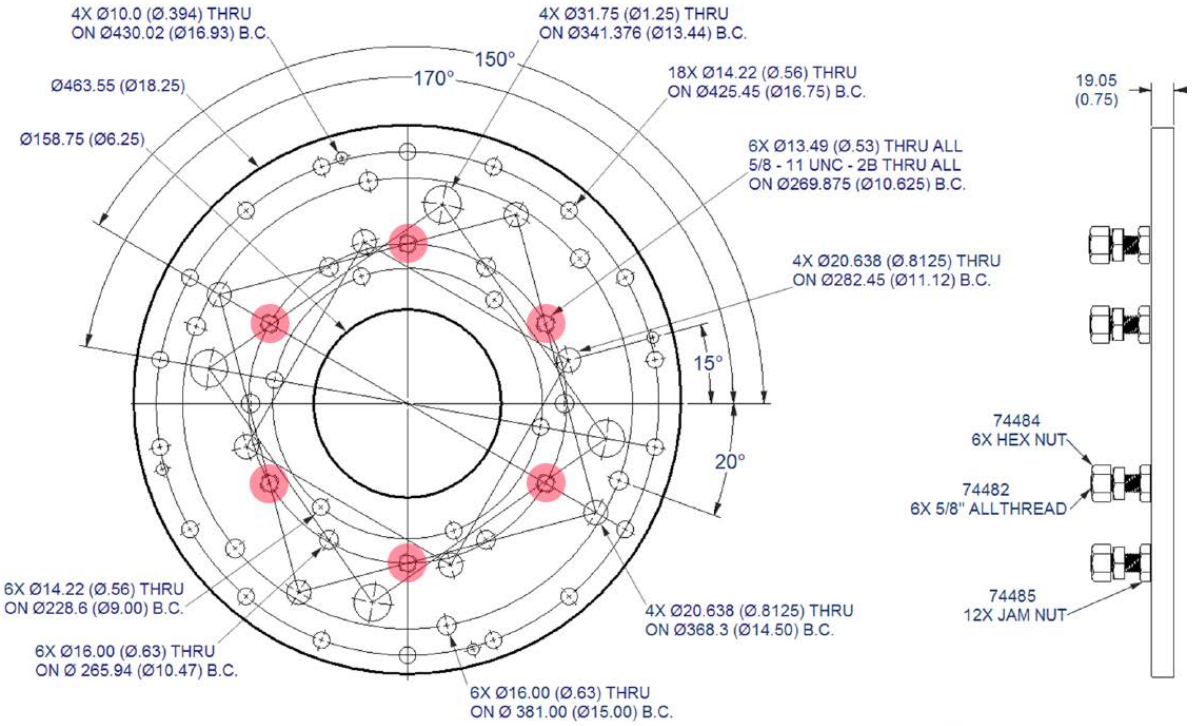
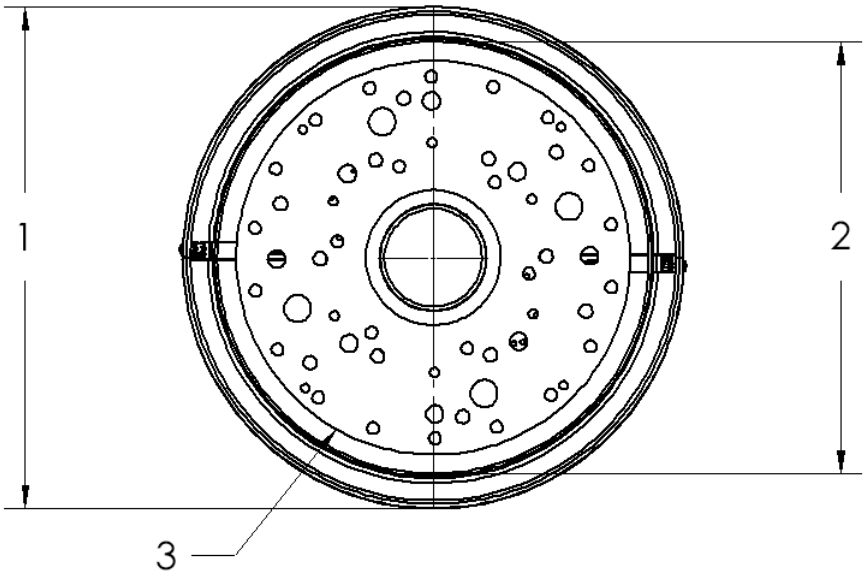


Figure 8. CHROMOPHARE Universal Adapter Plate CB 5109175

Notes

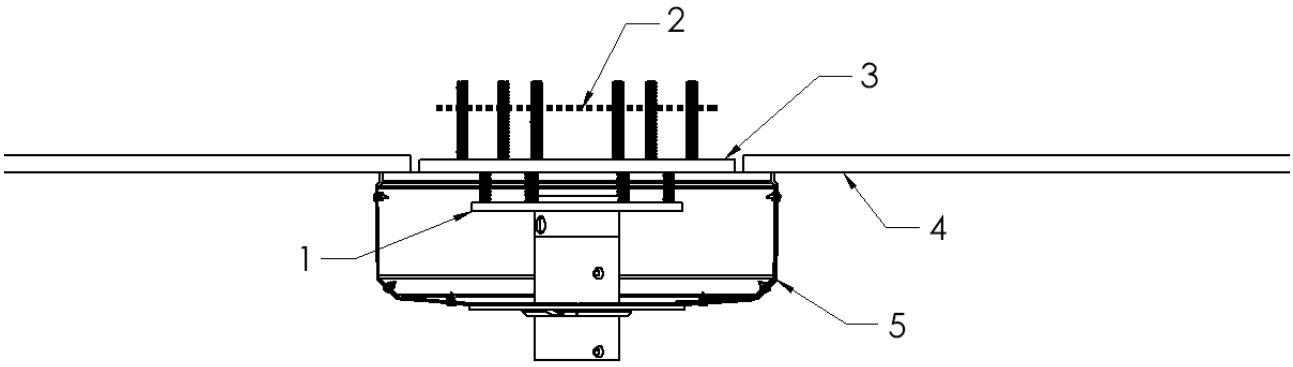
- Material: A36 Steel Plate
- Dimensions are in mm (inches)
- UNC-2B: Unified National Coarse, Class 2B
- B.C.: Bolt Hole Center
- All holes are equally spaced in their respective bolt circles
- All mounting plates shipped with (6) 5/8-11 UNC studs and leveling nuts

9.3.5.2 Ceiling Cover/Cutout (Top View)



1	Ceiling cover 23 in. (590 mm)	3	Universal plate
2	Ceiling cutout Ø 20 in. (508 mm)		

9.3.5.3 Installation (Front View)



1	Product flange	4	Finished ceiling
2	Existing structure	5	Ceiling cover
3	Universal plate flush with finished ceiling		

9.3.6 Ceiling anchor plate (outside of US/Canada only)

Note: These mounting plates are not approved for use in seismic regions.

Ceiling anchor plate Item No.	CB 5105304
Reinforcement plate Item No.	CB 5105504

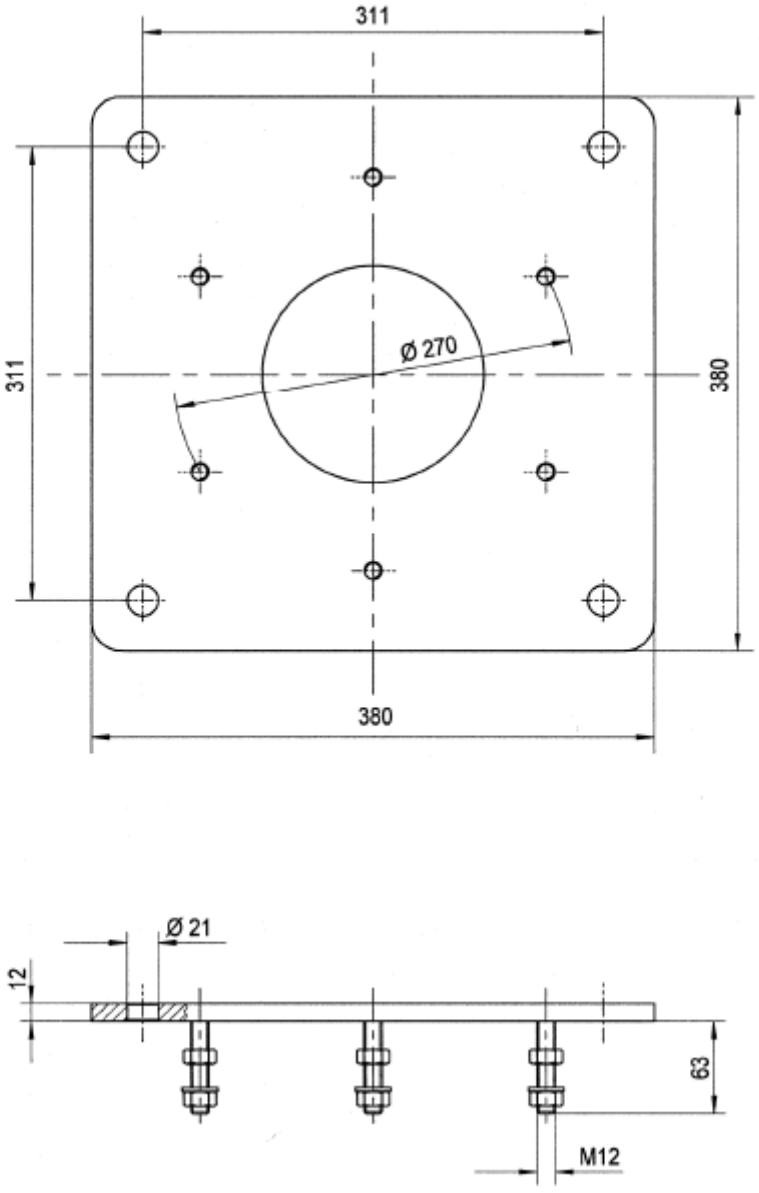


Figure 9. Dimension sheet for ceiling anchor plate CB 5105304 (dimensions are in mm)

10

Electrical Requirements

The hospital's electrical contractor must provide and install supply wiring from the panels to the CHROMOPHARE System in code-compliant conduit. The following sections include requirements per equipment to be used as a reference. If CAD drawings for the project are provided, refer to the specific conduit schedule indicated.

Low-voltage and video cables will be run from points designated by the hospital/contractor or third party integration company to designated outlets to the suspension for monitor. Use as required.

The hospital/contractor is responsible for making sure that all installed electrical, low voltage/data, and video components comply with applicable electrical codes and that all wiring and conduit runs described for the specific installation are complete before product installation.

For installations in the US, cables may need to be separated per NEC requirements. For installations outside of the US, installers should check with their local Stryker project team to follow country/region specific standard codes.

Electrical work is to be performed only by skilled electricians.

For technical questions, contact Stryker or your Stryker representative.

See section *Connecting the electricity [▸ 57]* for information on how to connect the electricity following installation.

Note:

Wherever conduit sizes are listed in inches, use the following metric sizes. These sizes are approximate.

- For 1" conduit, use 25 mm.
- For 1.25" conduit, use 32 mm.
- For 2" conduit, use 50 mm.

10.1 Testing and Certifications

The hospital/contractor must test and certify all system components before installation of the CHROMOPHARE products will be scheduled.

This testing and certification must include the following items:

- Electrical testing to meet local codes

Note: The hospital/contractor is responsible to ensure that the electrical components and installation complies with all applicable electrical codes. All wiring and conduit runs described for the type of installation involved must be completed before the product can be installed.

For questions regarding the electrical requirements for the pre-installation of any CHROMOPHARE Surgical Light, contact Stryker or your Stryker representative.

10.2 Electrical, Wiring, Conduit Requirements

Note: The room layout drawings in this section provide conduit requirements for the CHROMOPHARE Surgical Light. All illustrations are representative of Stryker products, but are provided for reference only.

It is not recommended to power all lights in a room on a single AC circuit.

It is not recommended to power lights on the same AC circuit as a flat panel.

Note: Local codes apply to the selection of conduit, wire sizes and type, terminal boxes, and other electrical equipment.

Note: High voltage AC power supplied to the system by electrical mains will vary based on region. For the US/Canada, 120 VAC and 50/60 Hz is used. Outside of the US and Canada, refer to regional requirements or work with your Stryker project team to confirm supply voltage and frequency.

Note: For plenum rated cables, conduit may not be required.

10.2.1 Power Requirements

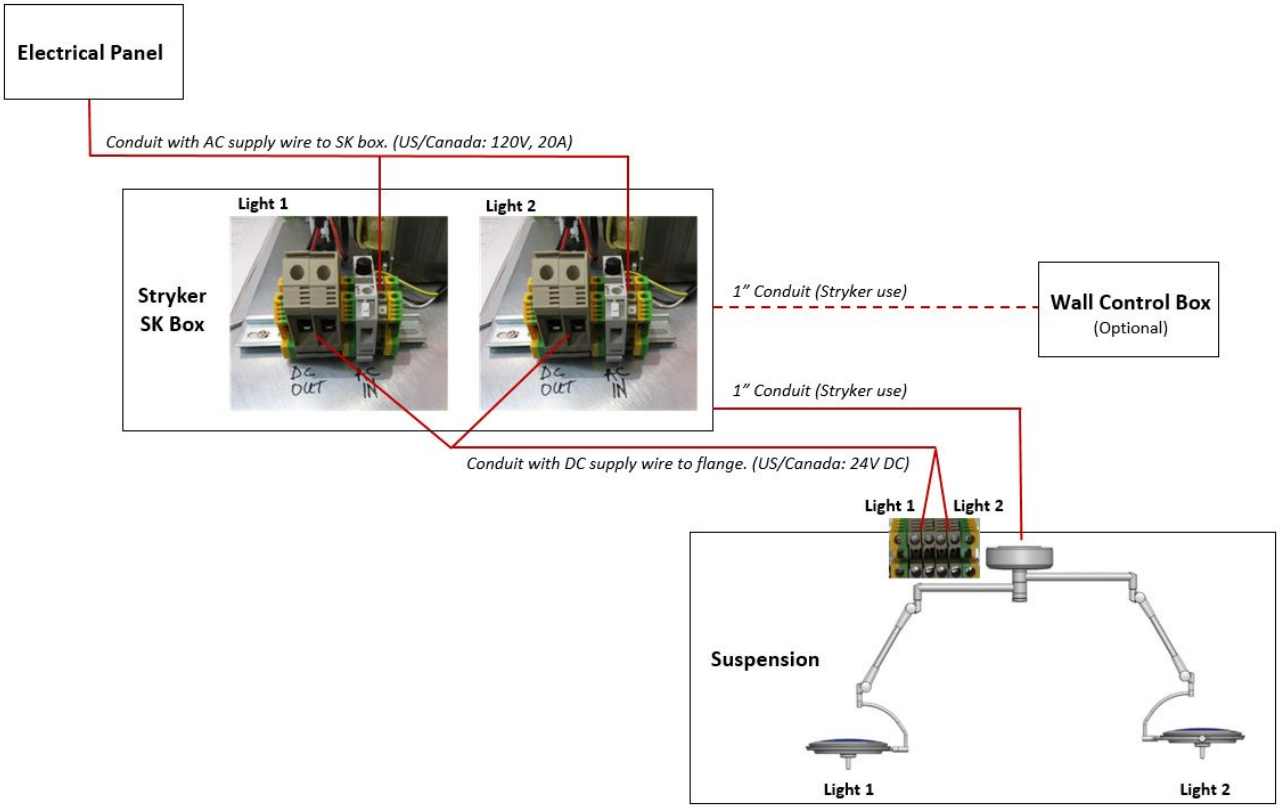
Power

For each suspension with **lights**, one of the following electronics systems will be present:

SK Enclosure

- The CHROMOPHARE Surgical Light's power supply and controls are housed within an SK Enclosure mounted separately from the CHROMOPHARE light suspension. This is the preferred, low-profile mounting style in most locations.
- The SK Enclosure must have a maximum length of 45 ft (15 m) of conduit run to both the mounting plate and *wall control box (if present)*.
- The SK Enclosure must be easily accessible. It can be installed into a wall or in the interstitial space **with an access panel.**
- **The SK Enclosure will be provided as a Pre-Install item and must be installed prior to Stryker's arrival for installation.**
- To power the system, AC power runs from a mains source to the SK Enclosure. Control signals and DC power are routed through wires from the SK Enclosure to a terminal strip on the light suspension plate.
- Conduit and Circuits required:

  - One 1” conduit from SK Enclosure to Mounting Plate (for Stryker use)
  - One 1” conduit from SK Enclosure to Wall Control Box (for Stryker use)
  - AC circuit(s) available at SK Enclosure for power to lights
  - DC supply wire from SK enclosure to mounting plate for power to lights
- AC Requirements:
  From Electrical Panel to SK Enclosure:
  - Main AC supply should be 120 VAC and 50/60 Hz. Outside of the US and Canada, refer to regional requirements or work with your Stryker project team to confirm supply voltage and frequency.
  - Wiring should be 3 wire, 16 AWG to 12 AWG (1.5 mm² to 4 mm²), and 600 V, terminated to the fused terminal block inside the SK Enclosure.
  - Each light head draws 2 Amps at 120 VAC (or 220 VAC outside US).
- DC Requirements:
  From SK Enclosure to Suspension:
  - Wiring should be 12 AWG (4 mm²), 600 V.
  - Wires should consist of 1 pair per light head and 1 ground wire per suspension (outside US – 1 ground wire per light head).
  - Wires terminate at the non-fused terminal block inside the SK Enclosure.
  - Wiring should be run through flexible conduit exiting the ceiling at the mounting ring and falling a minimum of 18” (450 mm) below the ceiling.

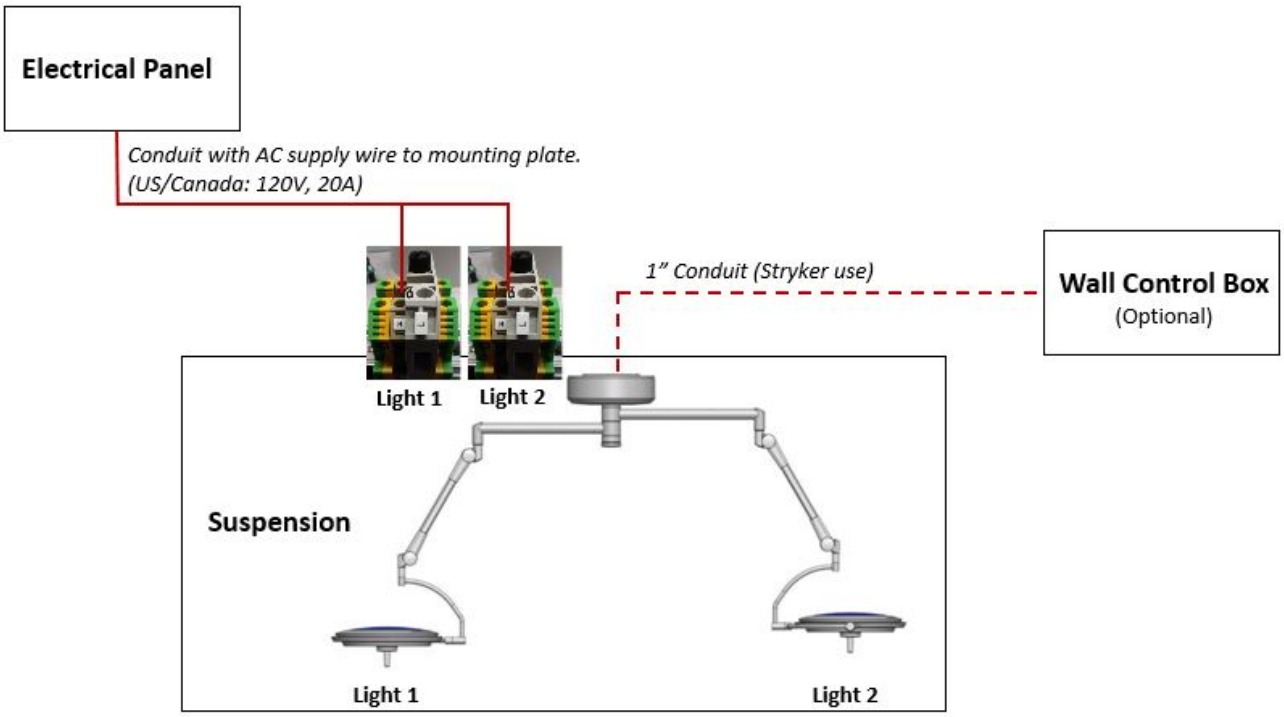


The terminal blocks shown here are used in the US/Canada only. For a photo of the blocks used outside of US/Canada, see section *Connecting the electricity (outside of US/Canada only) [▸ 88]**.*

Note: The 120 V, 20A AC input as shown here is used in the US/Canada only. Refer to regional requirements or work with your Stryker project team to determine correct supply voltage outside of the US/Canada.

Electronics on Tube

- The CHROMOPHARE Surgical Light's power supply and controls can be housed on the flange of the suspension when specified at the time of order.
- To power the system, AC power runs from a mains source directly to the CHROMOPHARE light ceiling mounting plate.
- Conduit and Circuits required:
  - One 1" conduit from Mounting Plate to Wall Control Box (for Stryker use)
  - AC circuit(s) available at Mounting Plate for power to lights
- AC Requirements:
  - AC power is delivered from a mains source directly to the CHROMOPHARE Surgical Light's ceiling mounting plate.
  - Wiring should be 3-wire, 16 AWG to 12 AWG (1.5 mm² to 4 mm²) and 600 V.
  - Each light head draws 2 Amps at 120 VAC
  - Wiring for lights should be run through flexible conduit exiting the ceiling at the mounting ring and falling a minimum of 18" (450 mm) below the ceiling.
  - CHROMOPHARE lights require a high voltage AC supply. Stryker recommends a separate high voltage AC supply for each mounting ring.



The terminal blocks shown here are used in the US/Canada only. For a photo of the blocks used outside of US/Canada, see section *Connecting the electricity (outside of US/Canada only) [▸ 88].*

Note: The 120 V, 20A AC input as shown here is used in the US/Canada only. Refer to regional requirements or work with your Stryker project team to determine correct supply voltage outside of the US/Canada.

10.2.2 Additional Suspensions in the Same Room

When multiple suspension mounts are present in a single room, there must be an empty conduit run between the mounting plates. This will be used by Stryker for communication and/or a StrykeCam HD cable.

- Conduit and Circuits required:
  - One 1" conduit from one Mounting Plate to the next Mounting Plate, etc. (for Stryker use)

10.2.3 Wall Control

Surface mounted wall control:

- Contractor-supplied 4x4" junction box
- Bottom of junction box approximately 53" (1.35 m) above floor
- Front of junction box flush with the wall
- Wall control mounts directly over junction box

Recessed wall control:

- Stryker-supplied back box for rough-in receives conduit
- Bottom of junction box approximately 53” (1.35 m) above floor
- Front of back box flush with the wall

Conduit and Circuits required:

- SK Enclosure:
  - One 1” conduit from SK Enclosure to Wall Control Box (for Stryker use)
- Electronics on Tube:
  - One 1” conduit from Mounting Plate to Wall Control Box (for Stryker use)

10.2.4 Flat Panels

The monitor mount solutions used with CHROMOPHARE are the Universal Display Mount (UDM) and ChromoView.

Universal Display Mount (UDM)

- US/Canada only:
  - For UDM upgrades on existing suspensions, DC power should be used to power the monitor.
  - For new suspensions purchased with UDM, AC power or DC power can be used to power the monitor. Please contact your Stryker project team with any questions.
- Outside of US/Canada only:
  - AC power or DC power can be used to power the monitor. Please contact your Stryker project team with any questions.
- AC power
  - The hospital/contractor is responsible for connecting the AC power cable and ground cable from the suspension to the terminal block on the suspension ring.
  - To power the system, AC power runs from a mains source directly to the CHROMOPHARE light ceiling mounting plate.
  - Wiring should be run through flexible conduit exiting the ceiling at the mounting ring and falling a minimum of 18” (450 mm) below the ceiling.
- When Stryker integration is used, a Stryker-supplied UDM junction box will be provided with Pre-Install items.

  - This must be mounted within 18” (450 mm) of the center of the mounting plate per national and local building codes, prior to Stryker’s arrival to the hospital for equipment installation.
- Conduit and Circuits Required:
  - When AC power is used: AC circuit available at Mounting Plate for power to monitor
  - Conduit for video/low voltage cables:

    - For Stryker integration: minimum 1.25” conduit from UDM Junction Box to Documentation Station

    - For non-Stryker integration: conduit from Mounting Plate to Documentation Station

    - For NEC cable separation (US only): One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

Note:

For UDM mounted in a tandem configuration, refer to section *TC Mount (US/Canada only) [▸ 56]*.

ChromoView (Single and Dual Monitor Mounts)

- US/Canada only:
  - DC power should be used to power the monitor.
- Outside of US/Canada only:
  - AC power can be used to power the monitor.
  - To power the system, AC power runs from a mains source directly to the CHROMOPHARE light ceiling mounting plate.
- Wiring should be run through flexible conduit exiting the ceiling at the mounting ring and falling a minimum of 18” (450 mm) below the ceiling. Conduit and circuits required:
  - When AC power is used (outside of US/Canada only): AC circuit(s) available at Mounting Plate for power to monitor(s)
  - Conduit from Mounting Plate to Documentation Station for video/low voltage cables

    - Minimum 1.25” conduit required for Stryker integration for a single monitor mount

    - Minimum 2” conduit required for Stryker integration for a dual monitor mount

    - For NEC cable separation (US only): One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

10.2.5 StrykeCam

The StrykeCam has a converter box that can be mounted in the documentation station. Only one camera system may be installed in a room.

Figure 10. Front View Converter Box (dimensions are in inches [mm])

The Converter Box must be located within:

- 48” (1.2 m) of a grounded, uninterrupted power outlet 100V to 240V, 0.6A circuit
- 48” (1.2 m) of s-video cable from the Light Suspension
- 120” (3.05 m) to the DVI endpoint

For documentation station:

- Verify that space is available within the documentation station (approximately 2.2 H x 8.7 W x 14.7” L [55.88 H x 220.98 W x 373.38 mm L]). Additional clearance along the length will be needed if using optical extenders

Conduit required:

- Documentation station:
  - One 1” conduit from Mounting Plate to Converter Box in the documentation station (for Stryker use)
- If Device Control is used with StrykeCam HD: One 1” conduit from Wall Control to Documentation Station. The maximum distance allowed from end to end between these locations is 30 ft (9.14 m).

10.2.6 Video/Power Arm (VPA, US/Canada only)

A Video Power Arm (VPA) may be configured on a suspension in the US and Canada.

VPA AC Requirements:

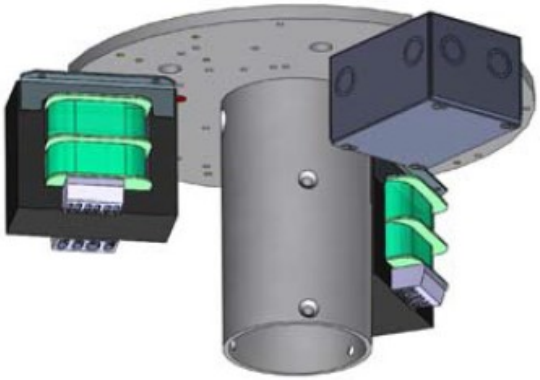
An additional AC power line is required to be pulled from Electrical Panel to the Mounting Plate for VPA.

- Wiring should be 3 wire, min.12 AWG (4 mm² minimum), 600 V.

- CHROMOPHARE VPA requires 120 VAC, 50/60 Hz supply.
- The CHROMOPHARE VPA has provisions for up to 2 separate 120 VAC supply circuits for each VPA unit.
- Wiring for the VPA circuits should be run through code compliant flexible conduit terminating in the VPA outlet box for field connection.
- Each VPA circuit should be rated for 20 Amps at 115 VAC unless otherwise noted.

The Stryker-provided VPA outlet box:

- Hospital/contractor responsible for mounting following CHROMOPHARE installation.
- Must be mounted on or near the mounting plate, as shown in the example below



- Must be easily accessible via an access panel through the ceiling and close to the mounting location.
- Weighs approximately 5 lb (2 kg) and is 5.9 x 3.9 x 1.7” (150 x 100 x 42 mm)

Conduit and Circuits Required:

- AC circuits available as indicated at VPA outlet box for VPA power
- When used on VPA: Conduit from Mounting Plate to Documentation Station for video/low voltage cables (minimum 1.25” for Stryker integration)

10.2.7 TC Mount (US/Canada only)

Certain CHROMOPHARE configurations can be mounted on an S-Series or Teletom boom.

Surgical Lights (F 528, F 628)

- To power the surgical lights, AC power runs from a mains source to the SK Enclosure. Control signals and DC power are routed from the SK Enclosure to the TC junction box, which comes as a part of the CHROMOPHARE system.
- The TC junction box should be mounted to the support structure within 3 ft (914.4 mm).

Conduit and Circuits Required:

- Two 1” conduits from SK Enclosure to TC junction box (for Stryker use).
- One 1” conduit from SK Enclosure to Wall Control box (for Stryker use).
- AC circuit(s) available at SK Enclosure for power to lights.

Exam Lights (F 300)

- To power the exam lights, AC power runs from a mains source to mini SK box, which comes as a part of the CHROMOPHARE system.
- The mini SK box should be mounted to the support structure within 3 ft (914.4 mm).

Conduit and Circuits Required:

- AC circuit(s) available at Mini SK Box for power to exam lights.

Universal Display Mount (UDM)

- The TC mounted UDM monitor can be provided AC or DC power:
  - To provide AC power to the monitor, AC power runs from a mains source to the TC junction box, which comes as a part of the CHROMOPHARE system.
  - The TC junction box should be mounted to the support structure within 3 ft (914.4 mm).

Conduit and Circuits Required:

- When AC power is used: AC circuit available at TC junction box for power to monitor.
- Conduit from Mounting Plate to Documentation Station (minimum 1.25” for Stryker integration).
- For NEC cable separation (US only): One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

ChromoView

Conduit and Circuits Required:

- Conduit from Mounting Plate to Documentation Station (minimum 1.25” for Stryker integration).
- For NEC cable separation (US only): One 1 1/4" conduit from mounting plate to documentation station (for Stryker use)

10.3 Owner Electrical Responsibilities

10.3.1 High-Voltage Conduit

The hospital/contractor is responsible for running code-compliant conduit from the breaker panel to the electrical Outlet Box. The number of branch circuits is included in the customer order file. The Outlet Box contains knockouts for ½-inch, ¾-inch, and 1-inch conduit.
The hospital/contractor is responsible for making all final AC and DC connections between mains and Stryker equipment.

10.3.2 High-Voltage Circuit Connections

The CHROMOPHARE Surgical Light is UL listed to meet UL 60601-1 3rd Ed, Medical Electrical Equipment, Class I type B.

Note: See the Equipment Configuration Drawings (when available) for specifics.

10.4 Connecting the electricity

After the installation of the CHROMOPHARE Surgical Light is complete, the hospital/ contractor or certified electrician must make all final AC and DC connections (live, neutral, protective earth) to the equipment.

Please see section *Connecting the electricity (outside of US/Canada only) [▸ 88]* in Appendix for details on how to connect the terminal blocks.

Warning:

Risk of death or injury from electrical current

Contact with uninsulated, live components can be life-threatening. Active electrical components can make uncontrolled movements and cause severe injuries.

✓ Therefore:

- Before beginning work, switch off the electrical power and secure it against accidental switch-on.
- Electrical work is to be performed by skilled electricians only.

Caution:

To prevent damage, do not pull the fiber optic cable too tight or over sharp edges.

Note:

- Electrical installation must be performed in accordance with IEC 60364-7-710 as well as the currently valid national standards.
- Power switches and fuses must be installed by the customer (outside of US/Canada only), see section *Fuses [▸ 108]*.
- The supplied fuses and fuse holders (US/Canada only) must be used.
- Pay attention to the fuse values on the fuse holders.
- The fuses must be UL and IEC 60127 approved.
- The cross section of the connection lines between fuses and transformers must be at least 1.5 mm².
- Do not change or modify any cables delivered by Stryker.
- Detailed circuit diagrams are available from Stryker or your Stryker representative on request.
- The emergency power switching relay applies for outside of US/Canada only.

See also

Fuses [▸ 108]

10.5 SK Electronics Enclosure

Mounting dimensions of the SK Enclosure used with the CHROMOPHARE F-Generation Surgical Light systems. This SK Enclosure is utilized to house the power supply and electronics for the Surgical Light system based on equipment configuration and ceiling height.

The hospital/contractor is responsible for mounting the SK Enclosure prior to the arrival of Stryker teams for equipment installation.

The SK Enclosure is available for recessed (in-wall) or surface mounting. The recessed variant has an optional decorative trim frame.

Weight	Single	Double
SK Enclosure, Fully Populated	19 kg/42 lb.	28 kg/62 lb.
Decorative Trim Frame (optional, recessed mount variant only)	2.28 kg/5 lb.	3.18 kg/7 lb.
Wall Control Unit (optional)	1 kg/2 lb.	1 kg/2 lb.

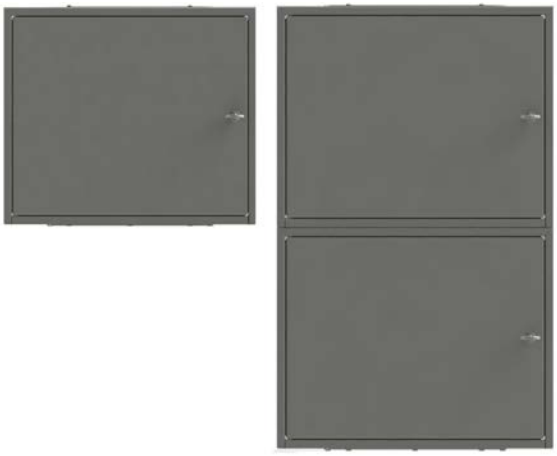


Figure 11. Single and Double SK Enclosure Options

Note: Each single SK Enclosure holds a maximum of 2 SK Electronics. One SK Electronic is required per light head. If more than two SK Electronics are required, additional SK Enclosures are required.

For example:
1 and 2 lights = 1 Single SK Enclosure
3 and 4 lights = 2 Single SK Enclosures or 1 Double SK Enclosure

Where multiple SK Enclosures are required, they must be located next to each other.

In seismic regions such as California, only one SK Electronics plate is allowed per box. Therefore, 2 lights will require 2 SK Enclosures.

10.5.1 Overall and Mounting Dimensions for SK Enclosure

A SINGLE surface mounted SK Enclosure will be mounted directly on to the wall and will protrude out according to the dimensions specified.

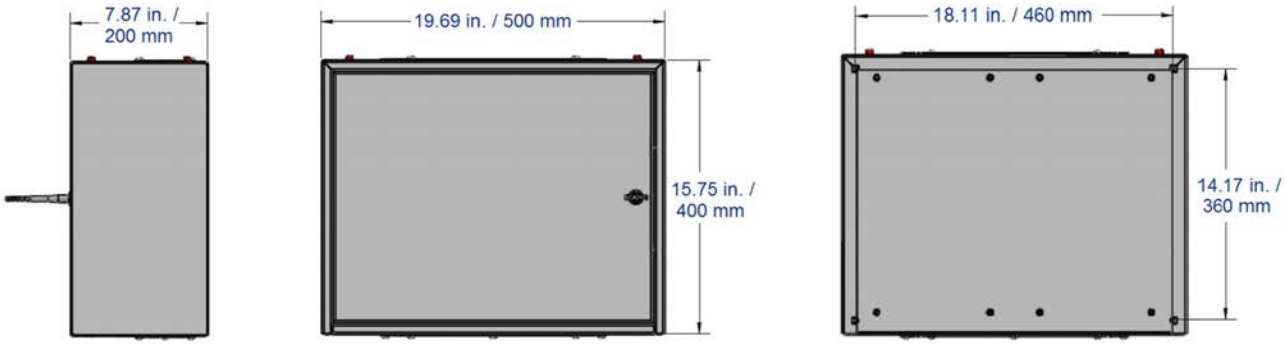


Figure 12. SINGLE SK Enclosure Overall and Mounting Dimensions

A DOUBLE surface mounted SK Enclosure will be mounted directly on to the wall and will protrude out according to the dimensions specified in the image below.

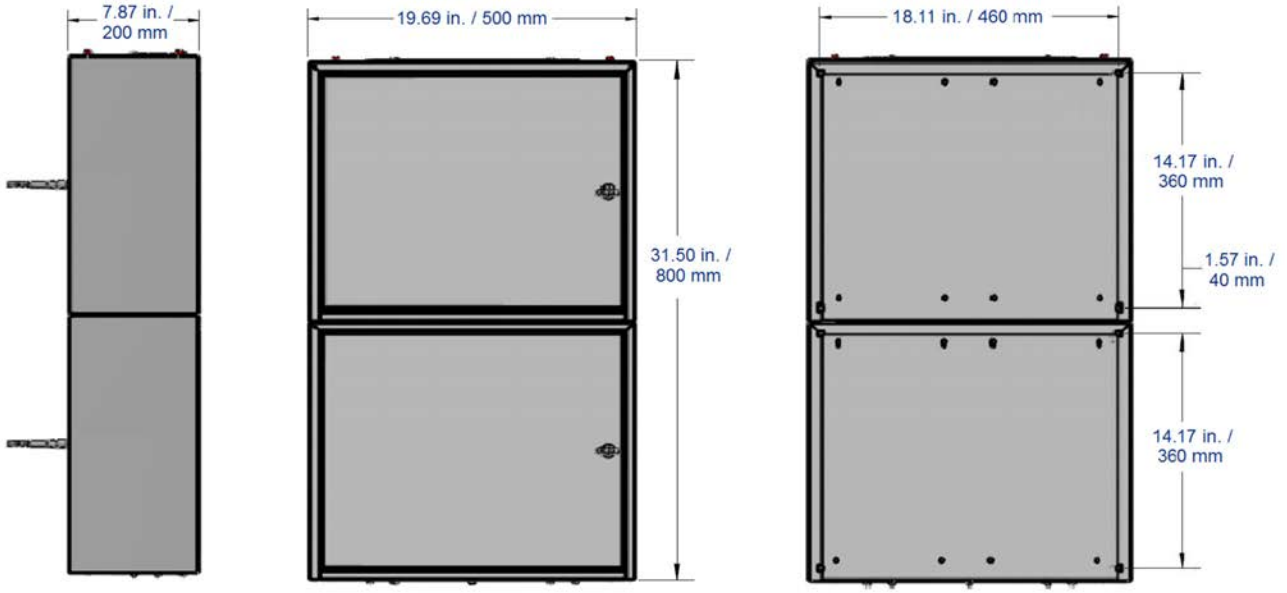


Figure 13. DOUBLE SK Enclosure Overall and Mounting Dimensions

10.5.2 Single, Recess mounted SK Enclosure with Decorative Trim Frame

A SINGLE recess mounted SK Enclosure with Decorative Trim Frame will be mounted into the wall and require the cutout to include an additional 10 mm (.39 inches) on all sides to accommodate the inside lip of the Decorative Trim Frame as specified.

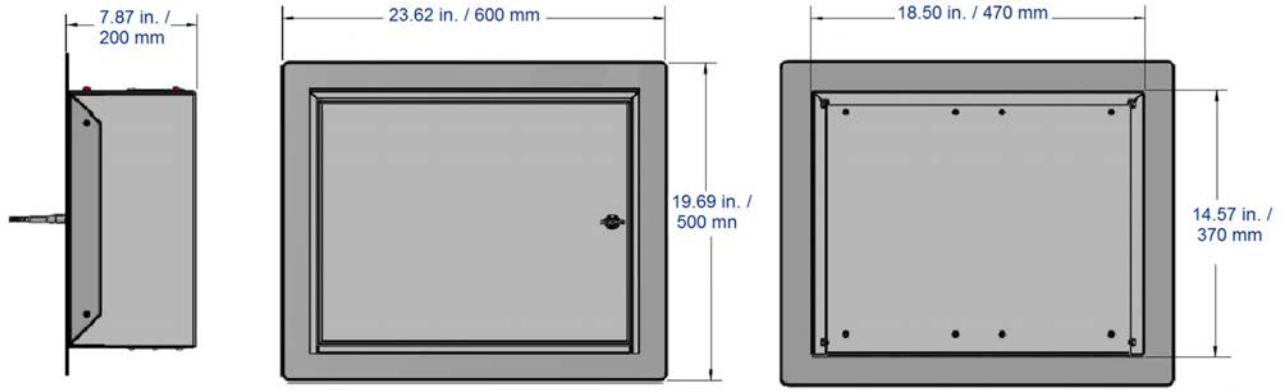


Figure 14. SINGLE SK Enclosure Overall Dimensions with Decorative Trim Frame

A DOUBLE recess mounted SK Enclosure with Decorative Trim Frame will be mounted into a wall and require the cutout to include an additional 10 mm (.39 inches) on all sides to accommodate the inside lip of the Decorative Trim Frame as illustrated.

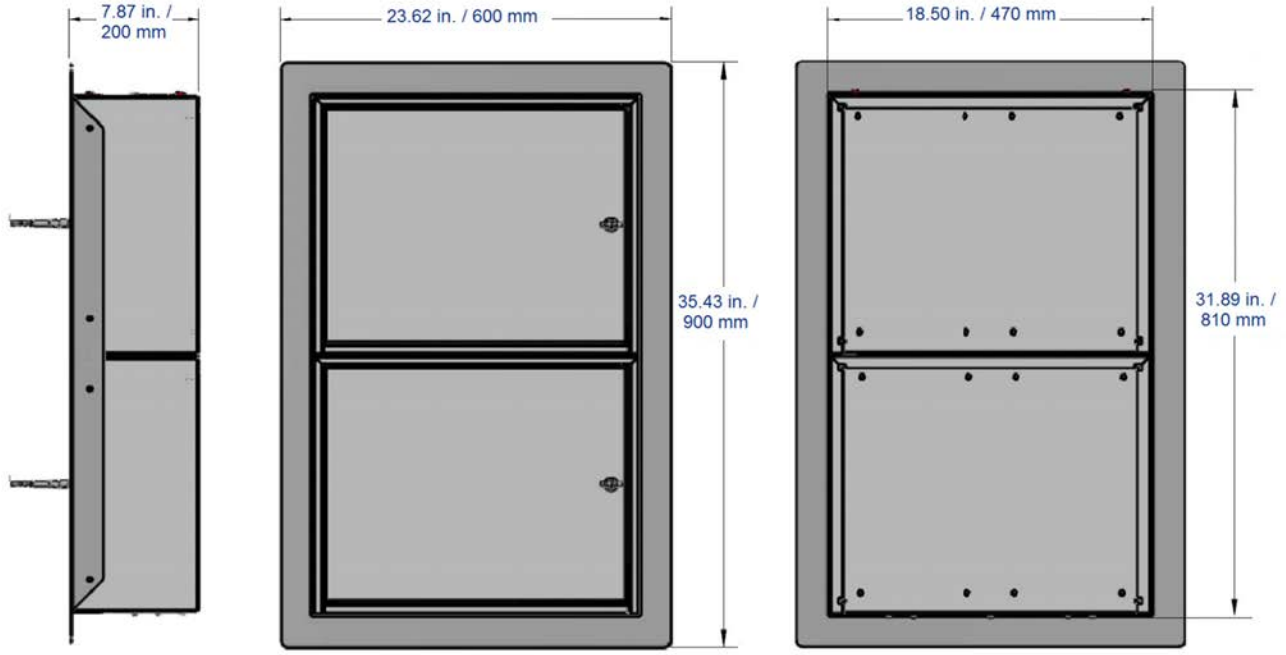


Figure 15. DOUBLE SK Enclosure Overall Dimensions with Decorative Trim Frame

10.6 Wall Control Unit

The Wall Control Unit is provided with CHROMOPHARE single, dual and triple combination Surgical Lights, except when specified.

For F-Generation Surgical Lights, the wall control unit may consists of a metallic faceplate with keypad overlays, or an optional interactive touch screen.

10.6.1 Surface Mount Wall Control Unit

Wall control unit with keypad

After removing the countersunk hexagonal plug, the light's connection cables to the CAN distribution board (mounted on the ceiling flange), connect at (1) can be run through the wall box at the back (2) or on the underside (3).

If the opening on the underside is used, the screw holders included in the delivery as the cable feedthrough must be used.

Touchscreen wall control unit

The light's connection cables to the CAN distribution board (mounted on the ceiling flange) can be run through the wall box at the back of the unit.

Note: For both wall control units, the CAN BUS termination point must not be located further than 45 ft (15 m) from the ceiling tube or SK Enclosure.

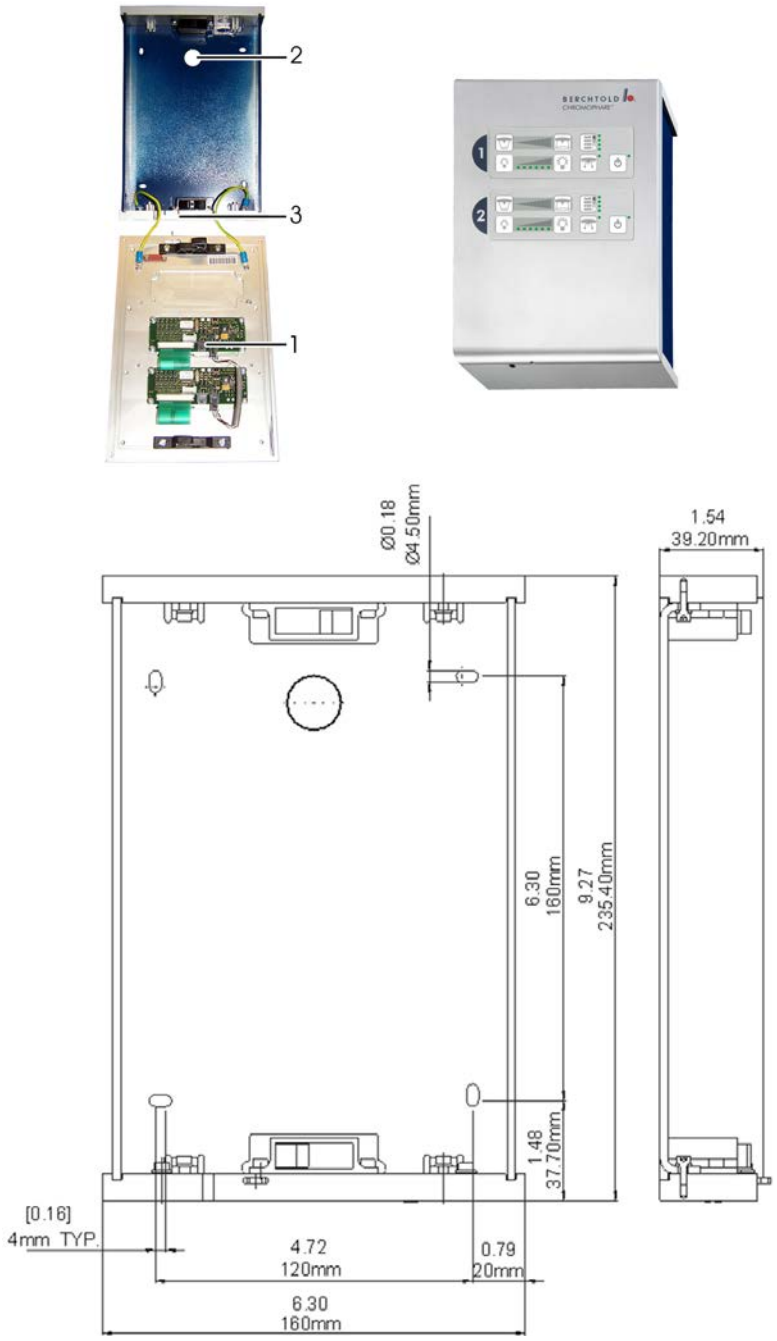


Figure 16. Dimensional drawing, back box for surface mount wall control unit with keypad (dimensions are in inches/mm)

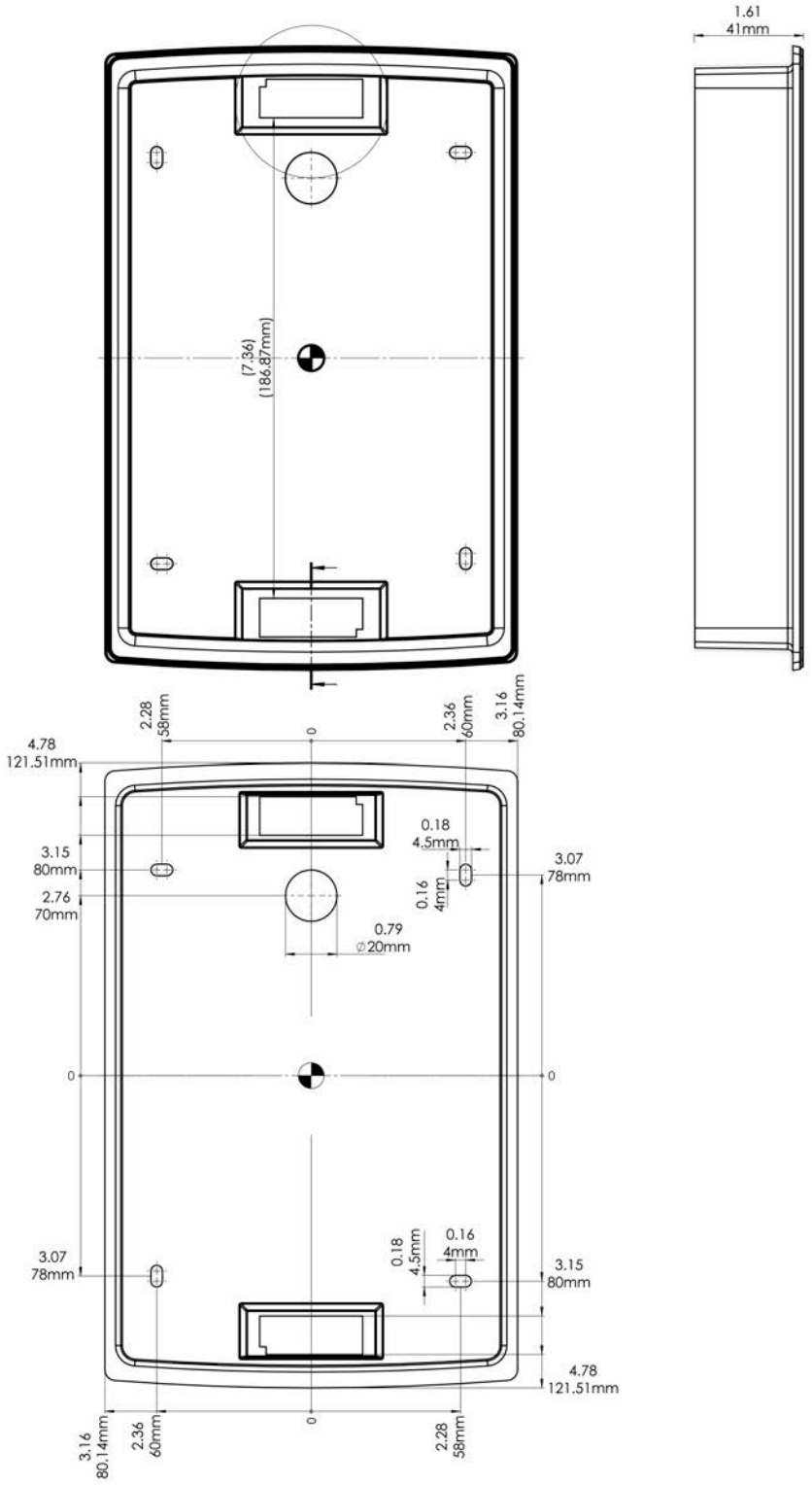


Figure 17. Dimensional drawing, back box for surface mount touchscreen wall control unit (dimensions are in inches/mm)

10.6.2 Recessed Mount Wall Control Unit

The light's connection cables to the CAN distribution board (mounted on the ceiling flange), connected at (1) are run through the wall box at the back (2).

Note: The CAN BUS termination point must not be located further than 45 ft (15 m) from the ceiling tube or SK Enclosure.

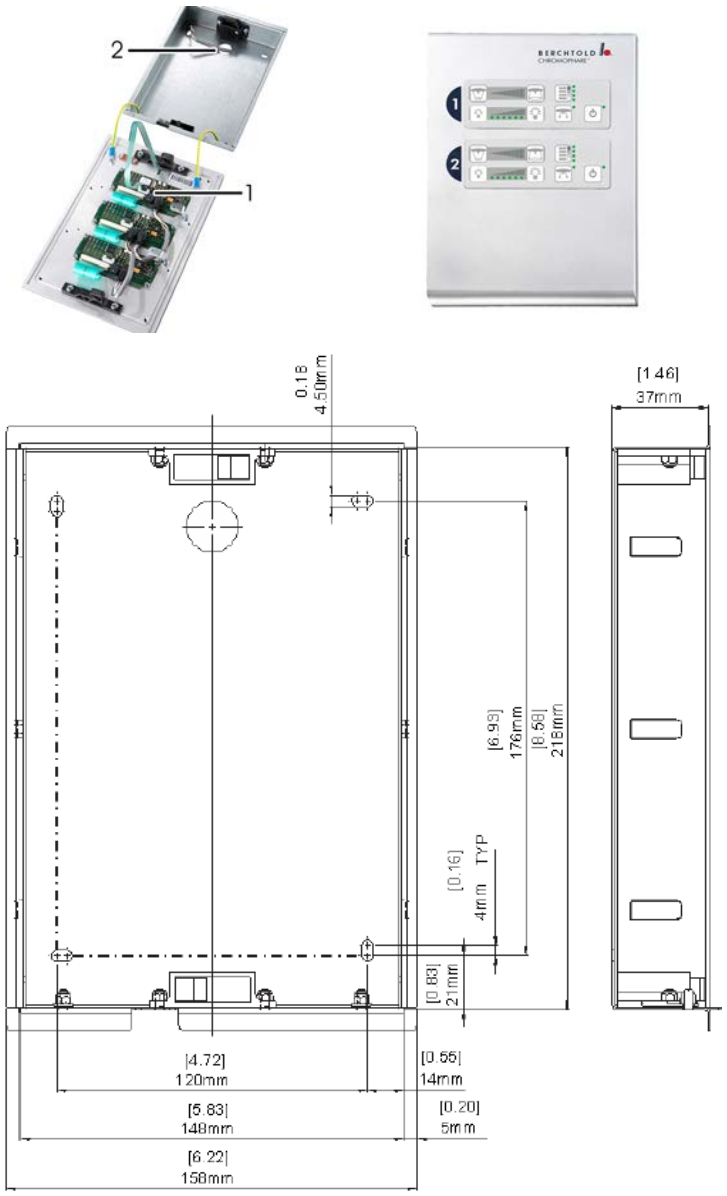


Figure 18. Dimensional drawing, back box for recessed mount wall control unit with keypad and touchscreen (dimensions are in [inches] mm)

10.6.3 SK Enclosure Integrated Wall Control Unit

- Connection cable connected to CAN distribution board
- Connection for integration will require cable run to a remote location determined at time of installation.

The light's connection cable to the CAN distribution board (mounted on the ceiling flange), connected at (1) has to be routed into the front panel.

Note: The CAN BUS termination point must not be located further than 45 ft (15 m) from the ceiling tube or SK Enclosure.

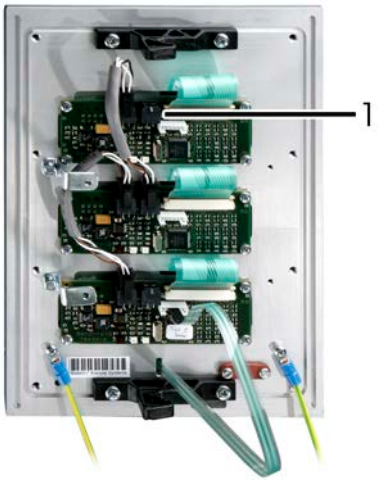


Figure 19. SK enclosure integrated wall control unit with keypad, interior

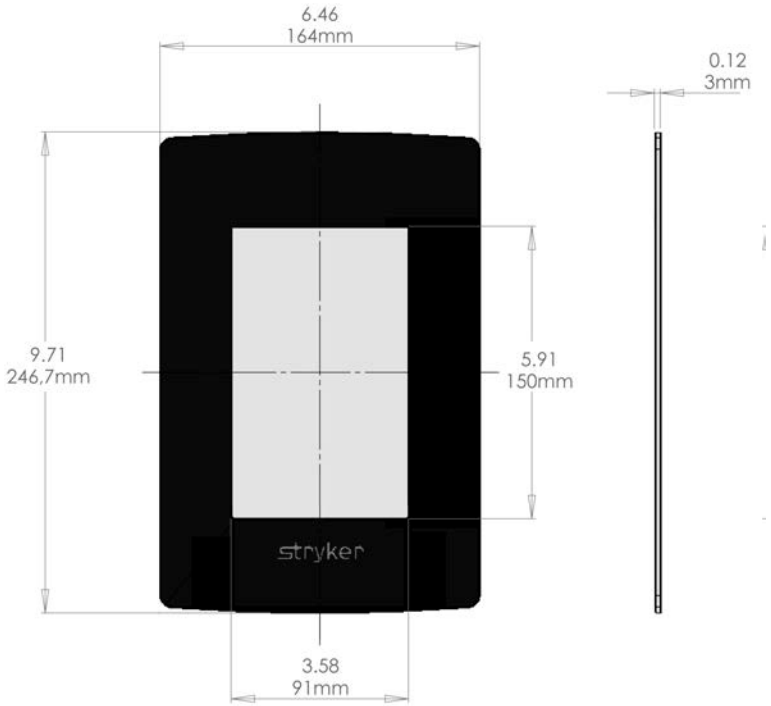


Figure 20. Dimensional drawing, front view touchscreen wall control unit, SK enclosure integrated (dimensions are in inches/mm)

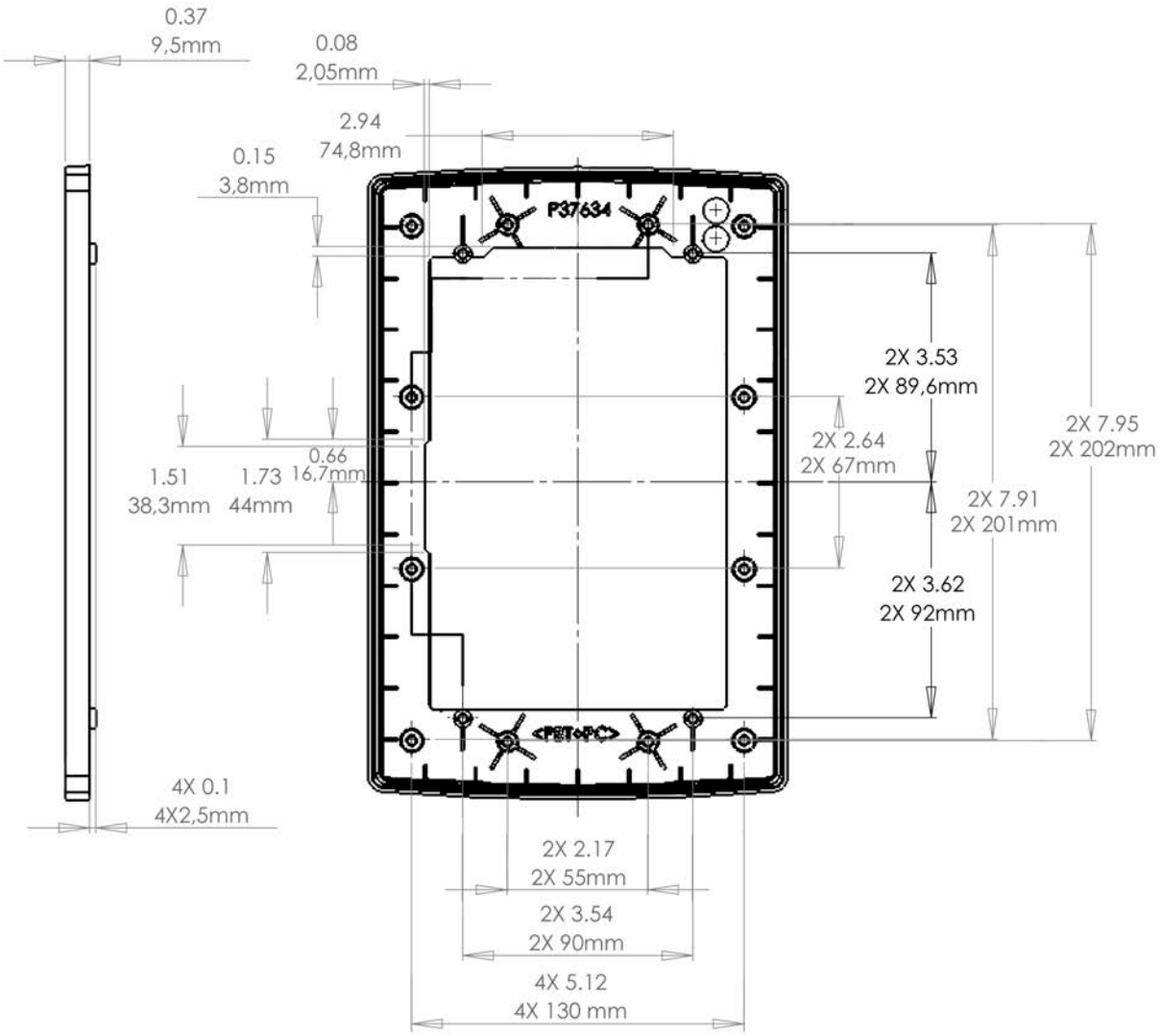


Figure 21. Dimensional drawing, rear view touchscreen wall control unit, SK enclosure integrated (dimensions are in inches/mm)

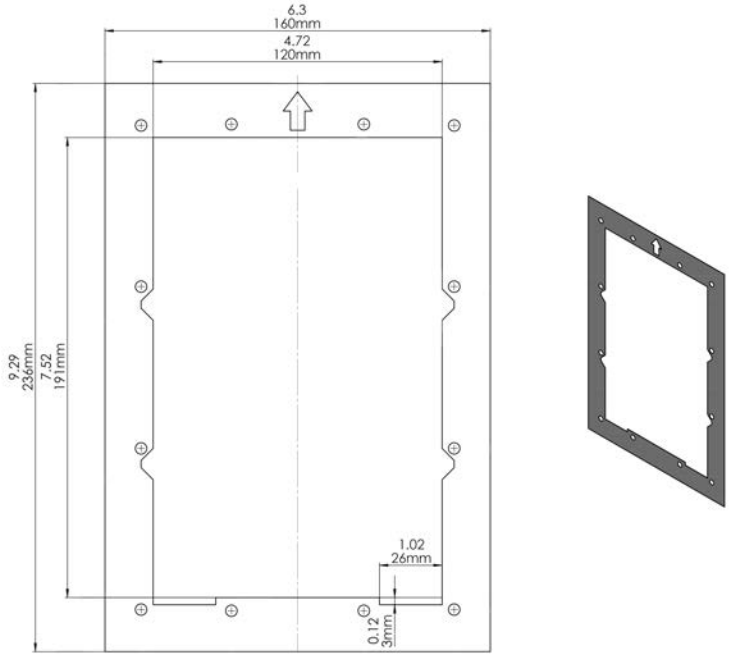


Figure 22. Dimensional drawing, template for tableau cut out (dimensions are in inches/ mm)

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Technical Data

11.1 Connecting ratings

CHROMOPHARE® F 528 and F 628

Specification	Value F 528	Value F 628	Unit
Transformer primary voltage	100/120/127/ 220/230/240	100/120/127/ 220/230/240	V (AC)
Power consumption for mains operation	65	80	W
AC frequency	50/60	50/60	Hz
Protection against electric shock	Class 1	Class 1	

Video/Power Arm (VPA, US/Canada only)

Specification	Value
Location	North America
Voltage	120 VAC
Max Circuit Load	16 amps
AC frequency	60 Hz

Universal Display Mount (delivered with cables)

Specification	Value
AC cable type	SVT 18 AWG (1 mm^2) 3C 105C
AC cable voltage range	100 to 240 VAC
AC cable current (max.)	10 amps
AC cable frequency	50/60 Hz

Specification	Value
DC cable type	16 AWG (1.5 mm^2) 4C 90C
DC cable voltage (max.)	60V

Specification	Value
DC cable current (max.)	14 amps

11.2 Operating conditions

CHROMOPHARE F 528, F 628, ChromoView monitor carrier arms and Universal Display Mount

Specification	Value	Unit
Operating temperature	10 to 40 (50 to 104)	°C (°F)
Relative humidity, non-condensing	30 to 75	%
Barometric pressure	700 to 1060 (10.15 to 15.37)	hPa (psi)

Term of use CHROMOPHARE® F 528, F 628 ceiling mounted lights

The CHROMOPHARE® F 528, F 628 are designed for continuous operation.

Term of use Universal Display Mount

This device is considered Class 1 medical equipment for continuous operation with no rating for ingress of solid objects and liquids.

Note:

The operating instructions for the monitor must be taken into account as well.

Video/Power Arm (VPA, US/Canada only)

Specification	Value	Unit
Ambient temperature	10 to 35 (50 to 95)	°C (°F)
Relative humidity, non-condensing	30 to 75	%
Barometric pressure	700 to 1060 (10.15 to 15.37)	hPa (PSI)

11.3 Transport and storage conditions

Universal Display Mount and CHROMOPHARE F-Generation lights

Specification	Value	Unit
Storage temperature	-20 to +70	°C
Relative humidity, non-condensing	max. 90	%

Caution:

Failure to protect the CHROMOPHARE components can lead to damage that will prevent proper installation and service performance. Observe the following conditions during transport and storage:

- Observe the transport and storage temperature as well as the relative humidity.
- Do not store outdoors.
- Keep dry and free of debris and dust.
- Do not expose to corrosive media.
- Protect from sunlight.
- Avoid mechanical vibrations.
- When storing for 15 weeks or longer, periodically check the general condition of all components and the packaging.
- Certain boxes may be labeled with storage instructions that are more extensive than the requirements cited here. Follow them accordingly.

Note:

The operating instructions for the monitor must be taken into account as well.

11.4 Emissions

Refer to the following Operating Manuals for a full explanation on compliance with EMC guidelines:

- CHROMOPHARE Single and Combination Surgical Lights Operating Manual (# 57404 US/Canada only, # 57393 outside of US/Canada only)

12

Terms of Use

12.1 Liability limitation

All specifications and notices in this manual have been compiled with consideration for applicable standards and regulations, the current state of technology, and our many years of experience and knowledge. Stryker assumes no liability for damages resulting from:

- Non-compliance with the manual.
- Improper operation.
- Work performed by untrained personnel.
- Unauthorised modifications.
- Technical changes.
- Installation of non-approved spare parts.
- Performance of unauthorised installation and maintenance work.

Explanations and illustrations presented herein may deviate from the actual product delivered in the case of special models, additional options or the latest technical changes. Furthermore, all obligations agreed to in the delivery contract, the general terms and conditions, delivery terms, and any regulations legally valid at the time the contract is concluded apply. We reserve the right to make technical modifications to improve and further develop the product.

12.2 Copyright protection

Treat this manual as confidential. It is exclusively for the use of persons handling the device. This manual may not be transferred to third parties without written approval from Stryker.

Note:

The specifications, text, drawings, pictures and other illustrations contained herein are protected by copyright and are subject to industrial property rights. Improper application is punishable by law.

Making photocopies of any type or form, including excerpts hereof, as well as using and/or sharing the content of this manual requires written consent from Stryker. Violators will be liable for damages. We reserve the right to make changes in technology and design. Also further claims remain reserved.

12.3 Contact information

Contact Stryker with questions or concerns.

Stryker Communications
571 Silveron Blvd
Flower Mound, TX 75028, USA
Toll Free: +1-866-841-5663
International: +1-972-410-7100

For Stryker locations, refer to the Stryker website at the following URL: www.stryker.com.

13

Appendix

Note:

Wherever conduit sizes are listed in inches, use the following metric sizes. These sizes are approximate.

- For 1" conduit, use 25 mm.
- For 1.25" conduit, use 32 mm.
- For 2" conduit, use 50 mm.

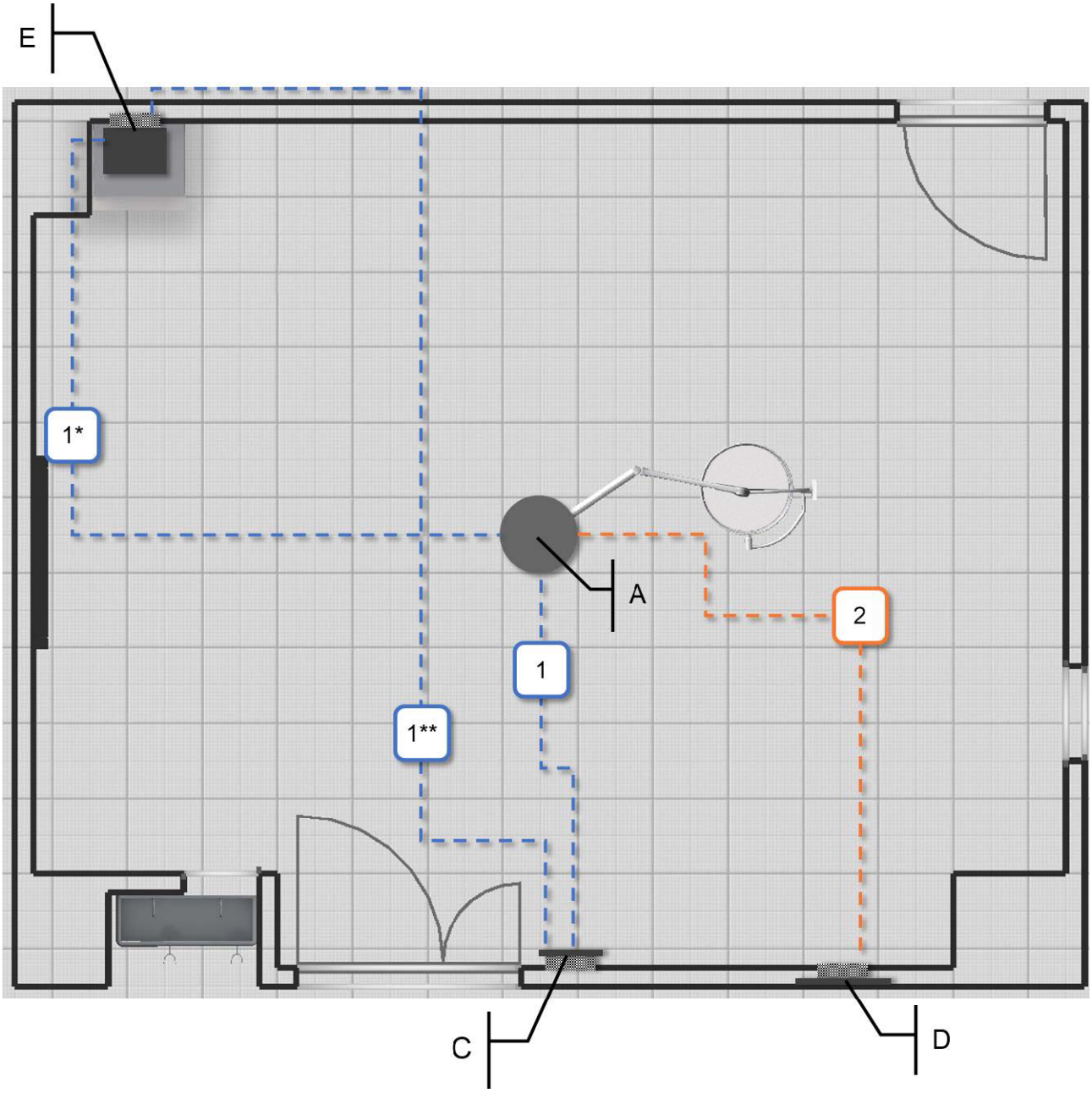
Note:

For installations in the US, cables may need to be separated per NEC requirements. Layouts in this section include the 1 1/4" conduit for cable separation. Use as required.

For installations outside of the US, installers should check with their local Stryker project team to follow country/region specific standard codes.

13.1 Circuit and Conduit Layout for Sample Configurations

Lights plus StrykeCam with Tube Mounted Electronics



Lights plus StrykeCam with Tube Mounted Electronics (continued)

A. Surgical Light Mount

C. Wall Control Panel

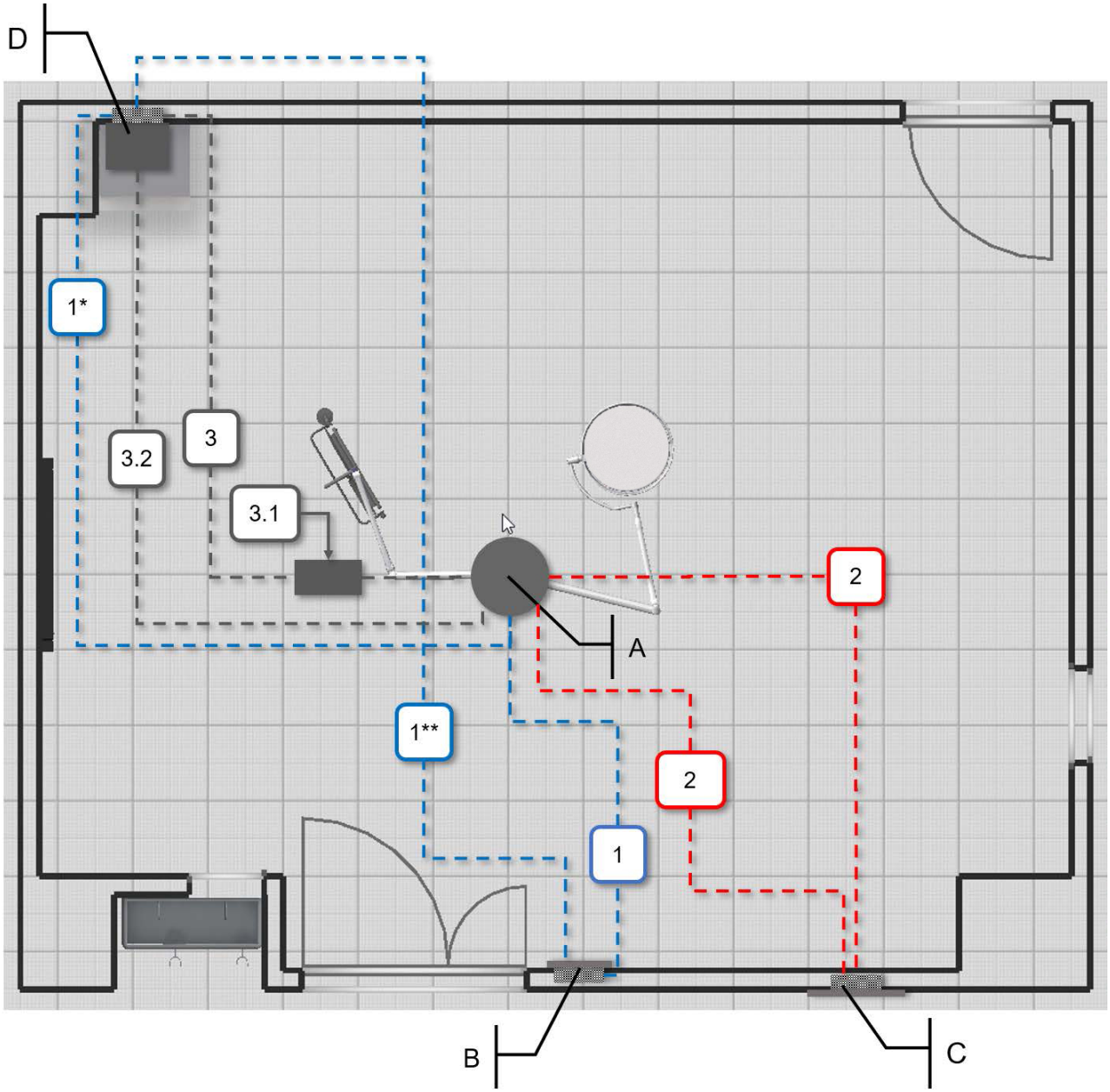
D. Electrical Panel

E. Documentation Station (Router, Casework)

1. 1” conduit, empty for Stryker use
2. Conduit with AC circuit

*Only required for StrykeCam HD.
**Only required when device control of lights is used. Maximum distance from end to end is 30 ft (9.14 m), cable is provided by Stryker Endoscopy for connection to the SDC.

Lights plus StrykeCam, plus Flat panel (UDM or ChromoView) with Tube Mounted Electronics



Lights plus StrykeCam, plus Flat panel (UDM or ChromoView) with Tube Mounted Electronics (continued)

A. Surgical Light Mount

B. Wall Control Panel

C. Electrical Panel

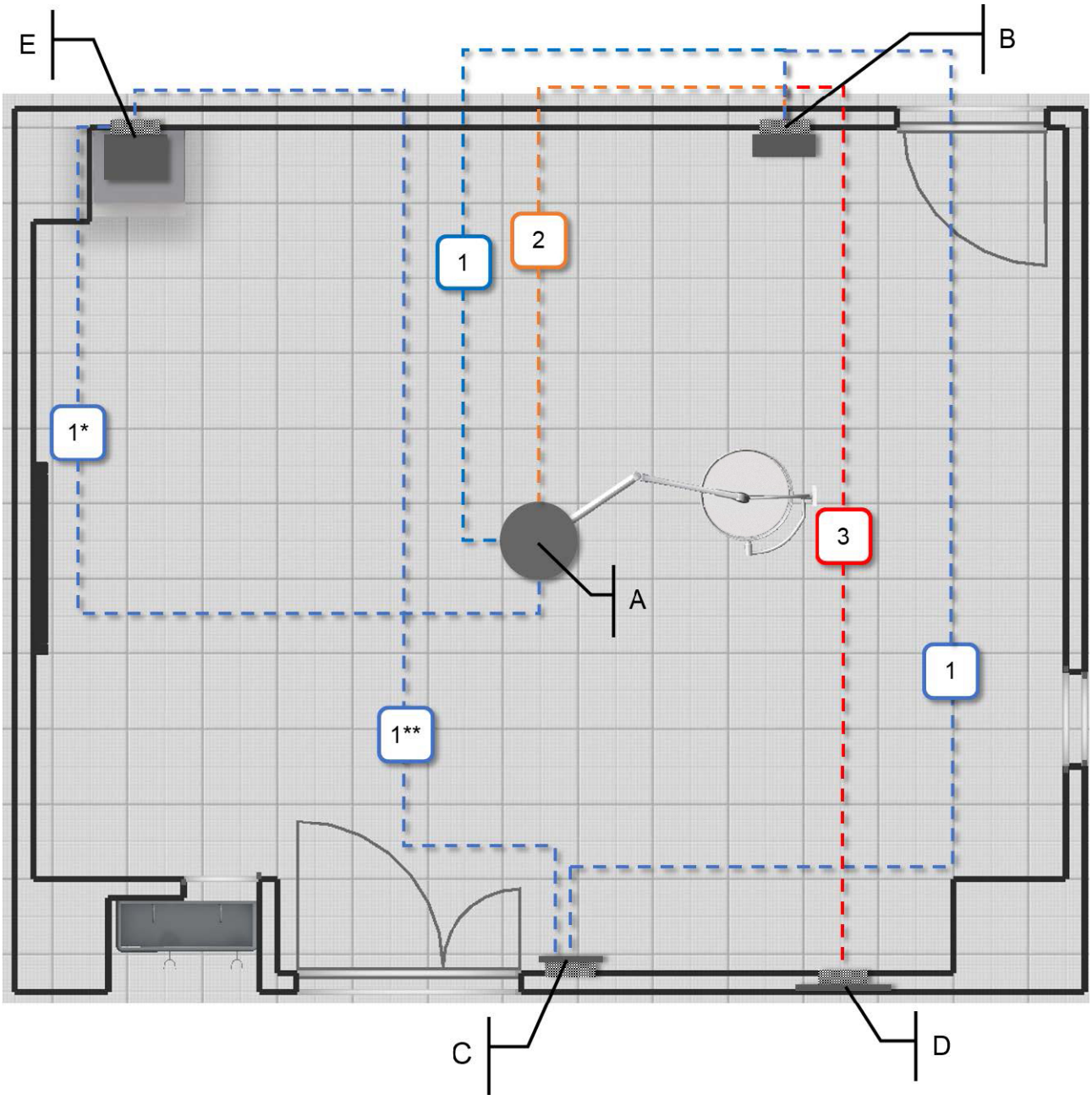
D. Documentation Station (Router, Casework)

1. 1” conduit, empty for Stryker use
2. Conduit(s) with AC circuit (QTY 2)
3. Conduit for video/low voltage for monitor (empty for integration company use):
   - Minimum 1.25” conduit for Stryker integration for a single monitor mount, 2” for a dual monitor mount
   - For ChromoView: use conduit from A to D

*Only required for StrykeCam HD.

**Only required when device control of lights is used. Maximum distance from end to end is 30 ft (9.14 m), cable is provided by Stryker Endoscopy for connection to the SDC.

Lights plus StrykeCam with SK Enclosure



Lights plus StrykeCam with SK Enclosure (continued)

A. Surgical Light Mount

B. SK Enclosure

C. Wall Control Panel

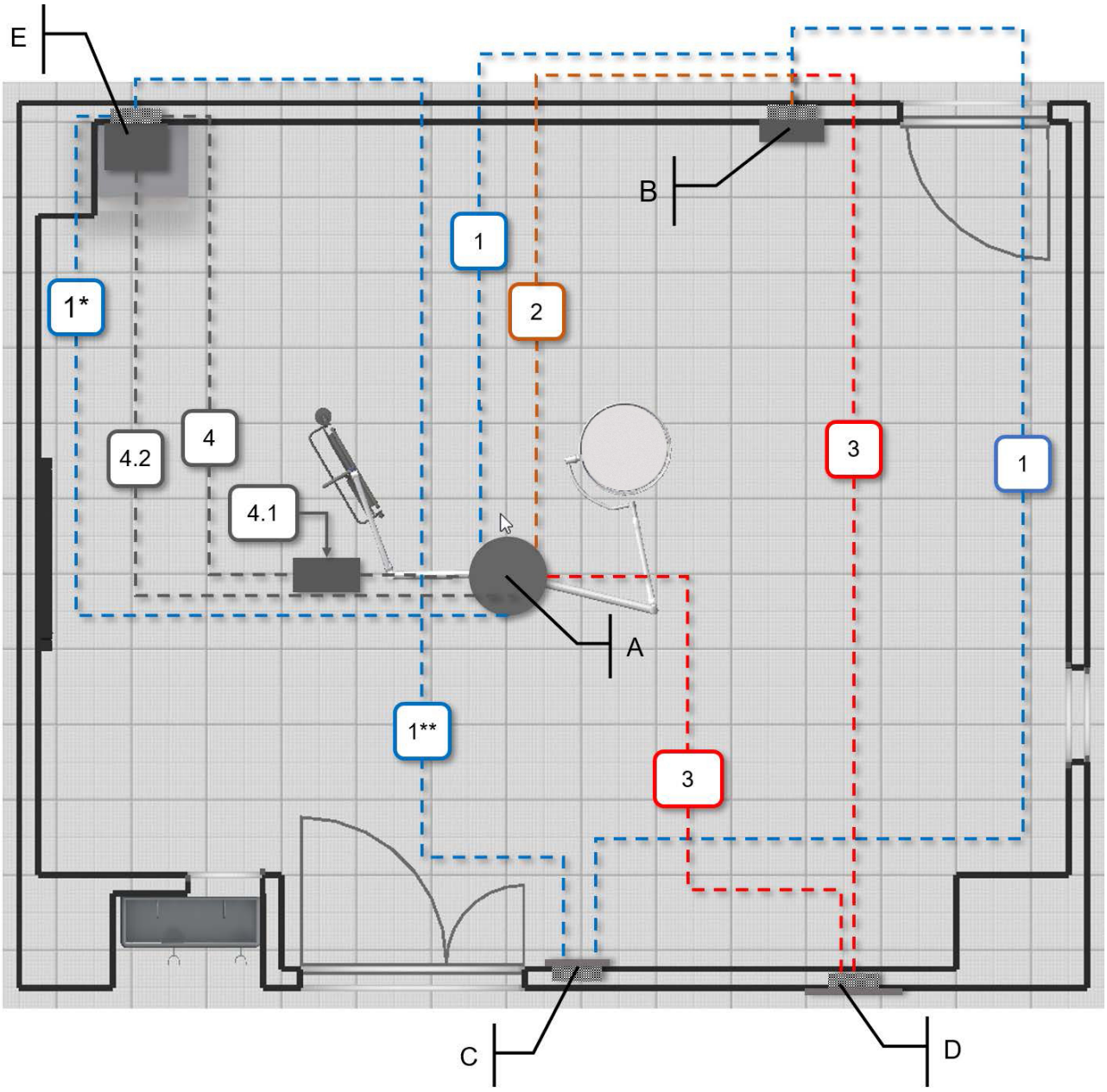
D. Electrical Panel

E. Documentation Station (Router, Casework)

1. 1” conduit, empty for Stryker use
2. 1” conduit with DC supply wires
3. Conduit with AC circuit

*Only required for StrykeCam HD.
**Only required when device control of lights is used. Maximum distance from end to end is 30 ft (9.14 m), cable is provided by Stryker Endoscopy for connection to the SDC.

Lights plus StrykeCam plus Flat Panel (UDM or ChromoView) with SK Enclosure



Lights plus StrykeCam plus Flat Panel (UDM or ChromoView) with SK Enclosure (continued)

A. Surgical Light Mount

B. SK Enclosure

C. Wall Control Panel

D. Electrical Panel

E. Documentation Station (Router, Casework)

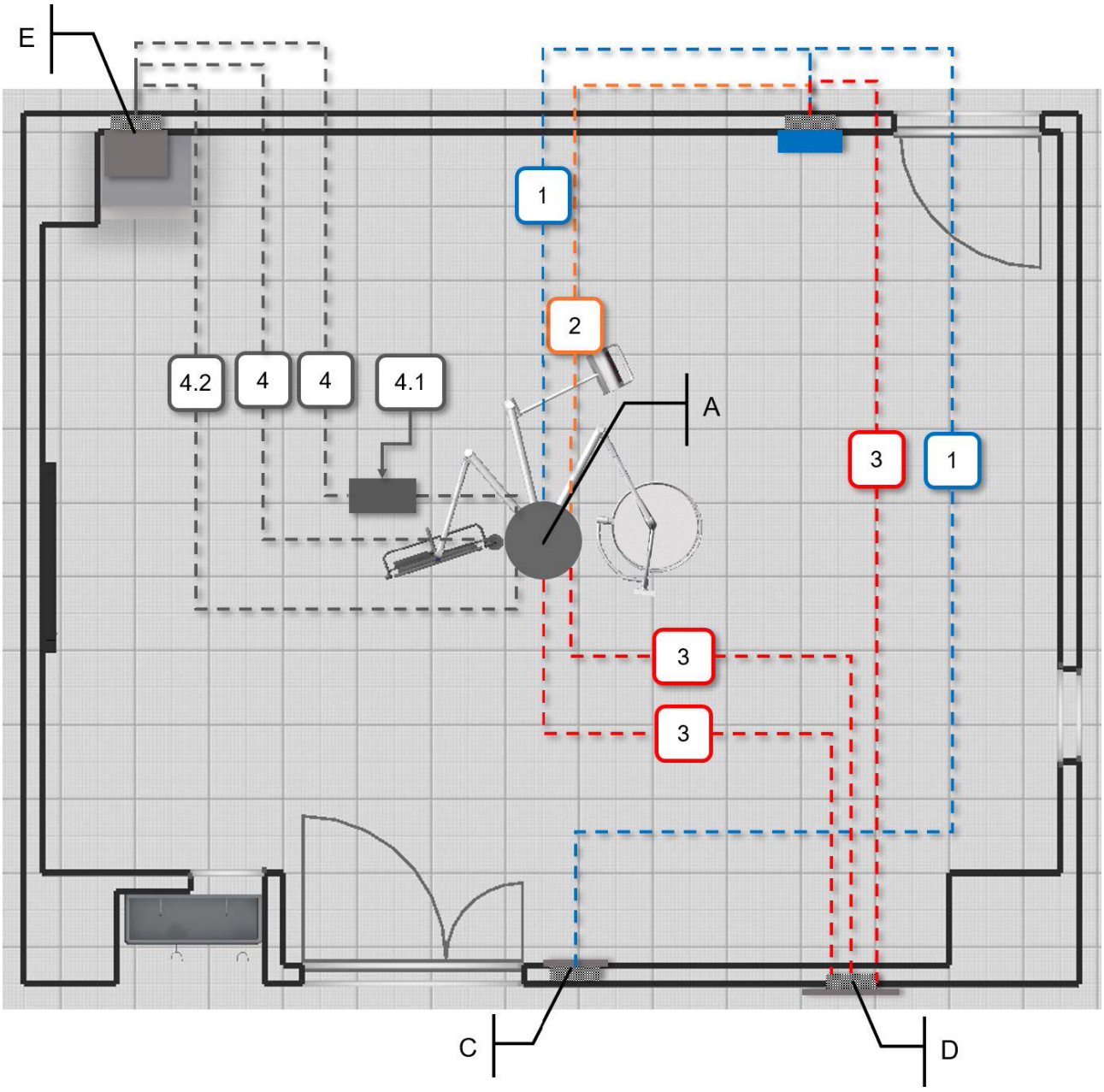
1. 1” conduit, empty for Stryker use
2. 1” conduit with DC supply wires
3. Conduit with AC circuit
   - For lights: B to D
   - For AC power to monitor: A to D
4. Conduit for video/low voltage for monitor (empty for integration company use):
   - Minimum 1.25” conduit for Stryker integration for a single monitor mount, 2” for a dual monitor mount
   - For ChromoView: use conduit from A to E
   - For UDM: use conduit from 4.1 (Stryker-supplied UDM junction box) to E

4.2 For UDM or ChromoView: Use one 1.25" conduit from suspension mounting plate to E for DC power cable to the monitor

*Only required for StrykeCam HD.
** Only required when device control of lights is used. Maximum distance from end to end is 30 ft (9.14 m), cable is provided by Stryker Endoscopy for connection to the SDC.

Lights plus Flat Panel (UDM or ChromoView) plus VPA with SK Enclosure

Note: StrykeCam HD is not included on the suspension shown here.



Lights plus Flat Panel (UDM or ChromoView) plus VPA with SK Enclosure (continued)

A. Surgical Light Mount

B. SK Enclosure

C. Wall Control Panel

D. Electrical Panel

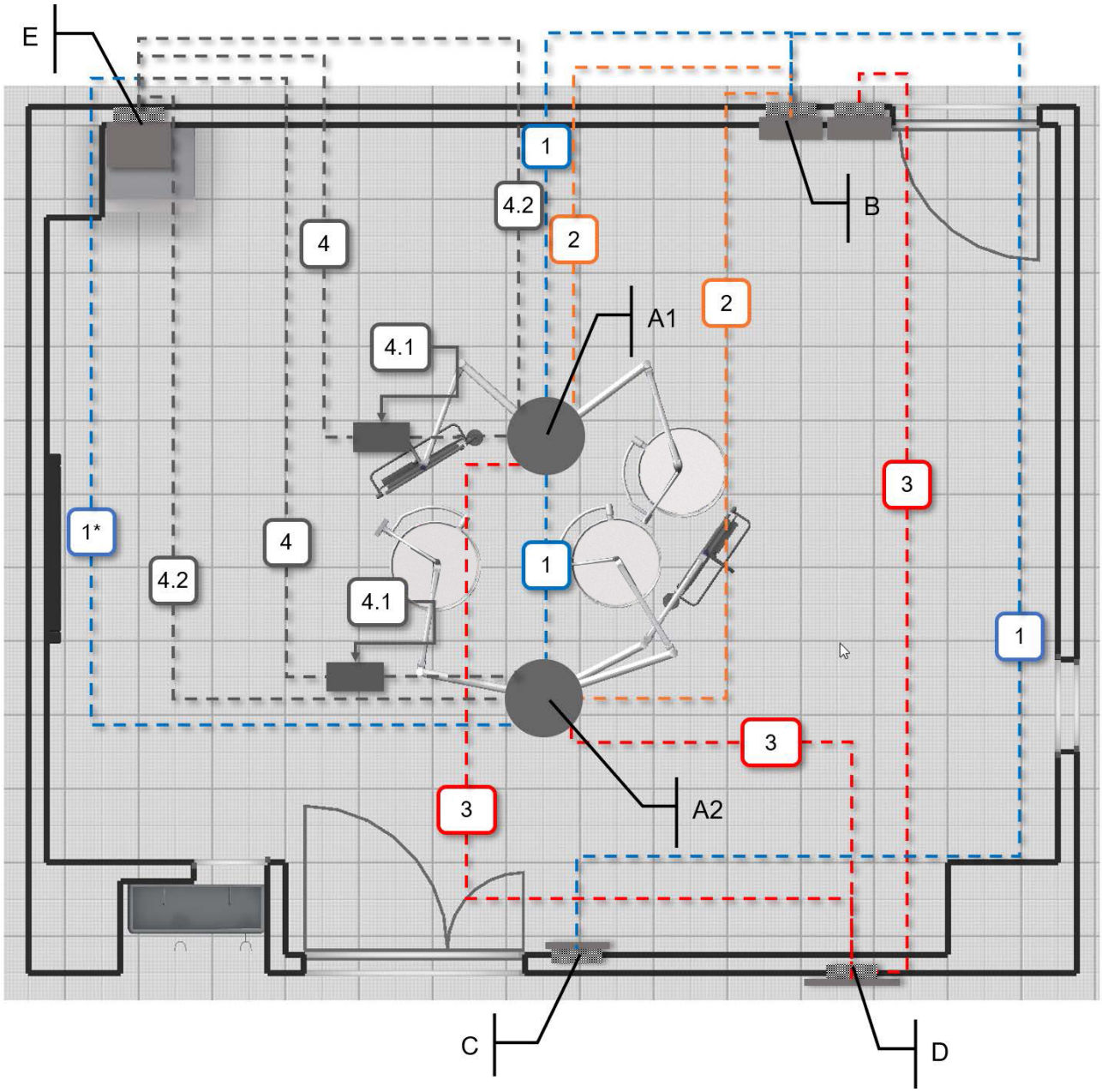
E. Documentation Station (Router, Casework)

1. 1” conduit, empty for Stryker use
2. 1” conduit with DC supply wires
3. Conduit with AC circuit
   - For lights: B to D
   - For AC power to monitor: A to D
   - For VPA power: A to D
4. Conduit for video/low voltage for monitor (empty for integration company use):
   - Minimum 1.25” conduit for Stryker integration for a single monitor mount, 2” for a dual monitor mount
   - For ChromoView: conduit from A to E; for UDM: start conduit at 4.1 (Stryker-supplied UDM junction box) instead of A

4.2 For UDM or ChromoView: Use one 1.25" conduit from suspension mounting plate to E for DC power cable to the monitor

Multiple Suspensions in One Room with SK Enclosure

Note: Device control is not included on the suspension shown here.



Multiple Suspensions in One Room with SK Enclosure (continued)

A1. CHROMOPHARE Mount with Light, Flat Panel

A2. CHROMOPHARE Mount with Light, Light, Flat Panel, StrykeCam HD

B. SK Enclosure (quantity 2)**

C. Wall Control Panel

D. Electrical Panel

E. Documentation Station (Router, Casework)

1. 1” conduit, empty for Stryker use
2. 1” conduit with DC supply wires
3. Conduit with AC circuit
   - For lights: B to D
   - For AC power to monitor: A1 to D, A2 to D
4. Conduit for video/low voltage for monitor (empty for integration company use):
   - Minimum 1.25” conduit for Stryker integration for a single monitor mount, 2” for a dual monitor mount
   - For ChromoView: conduit from A to E; for UDM: start conduit at 4.1 (Stryker-supplied UDM junction box) instead of A

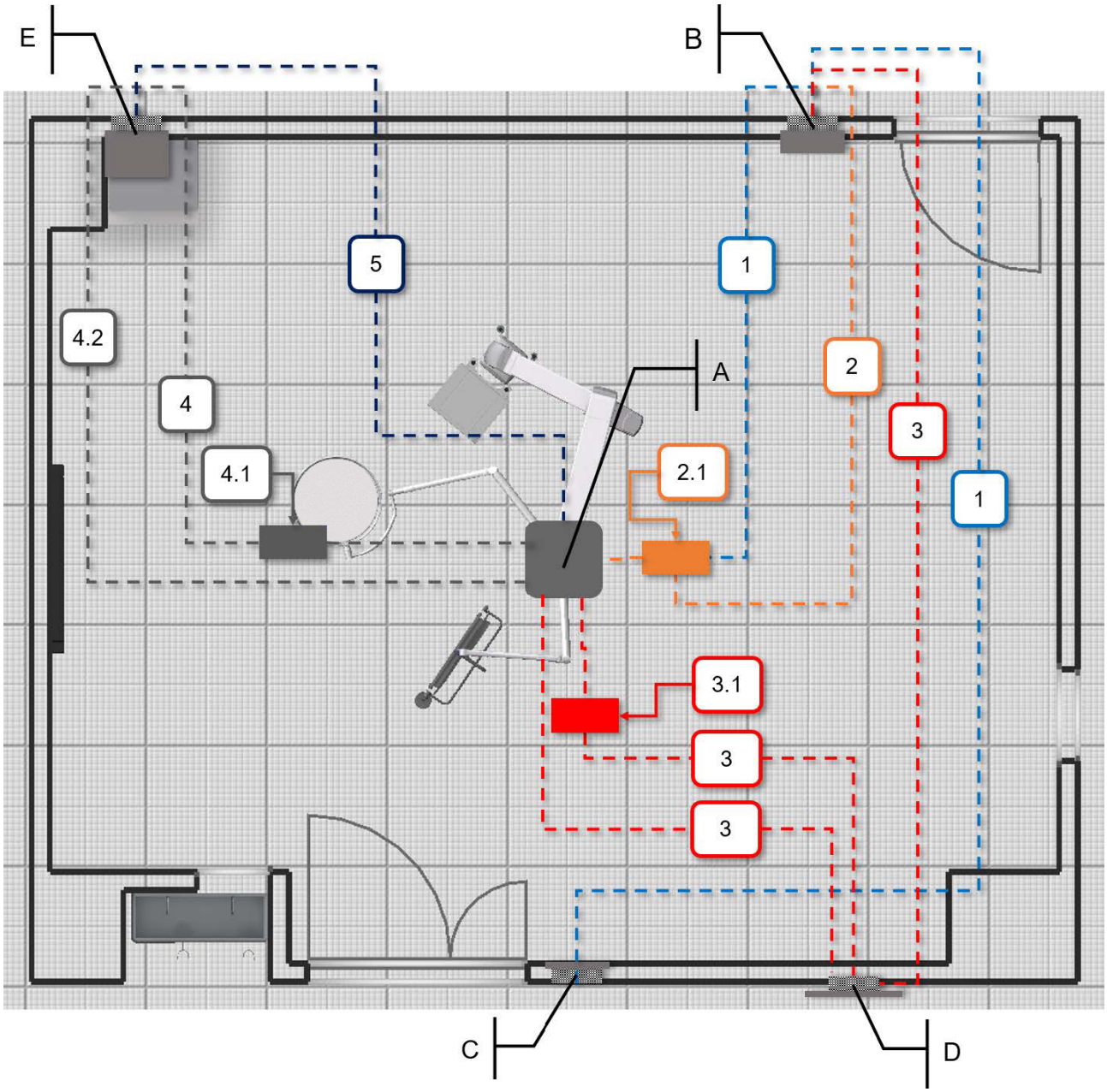
4.2 For UDM or ChromoView: Use one 1.25" conduit from suspension mounting plate to E for DC power cable to the monitor

*Only required for StrykeCam HD. Device control requirements for StrykeCam HD are not shown.

**In seismic regions such as California, only one SK Electronics plate is allowed per box. Here, 3 lights are shown in one room. The room would require 3 SK Enclosures, 1 for each light.

TC Mounted CHROMOPHARE System (US/Canada Only)/TC Mounted Lights plus Flat Panel (UDM or ChromoView)

Note: StrykeCam HD is not included on the suspension shown here.



TC Mounted CHROMOPHARE System (US/Canada Only)/TC Mounted Lights plus Flat Panel (UDM or ChromoView) (continued)

A. Surgical Light Mount

B. SK Enclosure

C. Wall Control Panel

D. Electrical Panel

E. Documentation Station (Router, Casework)

1. 1” conduit, empty for Stryker use
   - For TC mounted lights: 2.1 (TC Junction Box) to B
2. 1” conduit with DC supply wires
   - For TC mounted lights: 2.1 (TC Junction Box) to B
3. Conduit with AC circuit
   - For TC mounted lights: B to D
   - For AC power to TC mounted monitor: A to D
   - For boom: 3.1 (Boom Outlet Box) to D
4. Conduit for video/low voltage for monitor (empty for integration company use):
   - Minimum 1.25” conduit for Stryker integration for a single monitor mount
   - For ChromoView: conduit from A to E; for UDM: start conduit at 4.1 (Stryker-supplied UDM junction box) instead of A

4.2 For UDM or ChromoView: Use one 1.25" conduit from suspension mounting plate to E for DC power cable to the monitor

5. Conduit for video/low voltage for boom (empty for integration company use):
   - Quantity 2 of 2” conduits for Stryker integration for equipment boom

13.2 Connecting the electricity (outside of US/Canada only)

After the installation of the CHROMOPHARE Surgical Light is complete, the hospital/ contractor or certified electrician must make all final AC and DC connections (live, neutral, protective earth) to the equipment.

Please see section *Electrical Requirements [▸ 47]* for more information about the responsibilities and all the electrical requirements.

In the US/Canada, the terminal blocks may look slightly different from the photos in this section. **Please reach out to your Stryker project team with any specific questions on how to make final electrical connections.**

Warning:

Risk of death or injury from electrical current

Contact with uninsulated, live components can be life-threatening. Active electrical components can make uncontrolled movements and cause severe injuries.

✓ Therefore:

- Before beginning work, switch off the electrical power and secure it against accidental switch-on.
- Electrical work is to be performed by skilled electricians only.

Caution:

To prevent damage, do not pull the fiber optic cable too tight or over sharp edges.

Note:

- Electrical installation must be performed in accordance with IEC 60364-7-710 as well as the currently valid national standards.
- Power switches and fuses must be installed by the customer (outside of US/ Canada only), see section *Fuses [▸ 108]*.
- The supplied fuses and fuse holders (US/Canada only) must be used.
- Pay attention to the fuse values on the fuse holders.
- The fuses must be UL and IEC 60127 approved.
- The cross section of the connection lines between fuses and transformers must be at least 1.5 mm².
- Do not change or modify any cables delivered by Stryker.
- Detailed circuit diagrams are available from Stryker or your Stryker representative on request.
- The emergency power switching relay applies for outside of US/Canada only.

See also

Fuses [▶ 108]

13.2.1 Electrical connection to the ceiling tube

DC supply

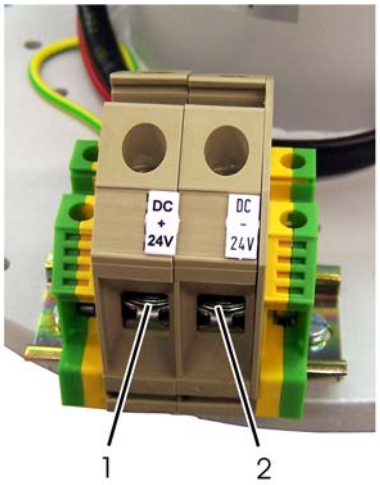


Figure 23. DC terminals

- DC connection terminals (up to 36 mm^2 cable cross-section)
- Potential equalization terminals (up to 10 mm^2 cable cross-section)

The combination lights are installed with additional terminal pairs. Connect these as well.

Terminal	Connection
1	Input +24 VDC
2	Ground for: Input +24 VDC

Mains voltage supply

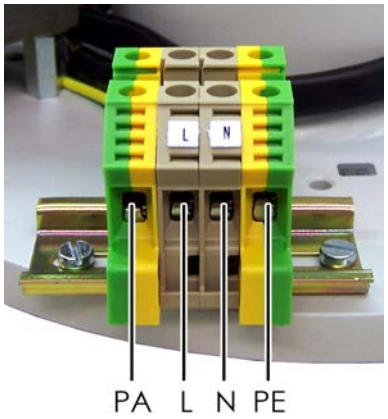


Figure 24. Mains connectors

- Mains connection terminals

Transformer and rectifier boards mounted on the ceiling tube.

Connect the supply voltage to terminal pair L and N, in accordance with the regional voltage (see also the transformer model plate). Also connect PE and PA (protective earth and potential equalization). Further terminal pairs are mounted by combining them with several lights, ChromoView monitor support arms or external camera support arms. Connect these as well.

Mains voltage supply for Universal Display Mount

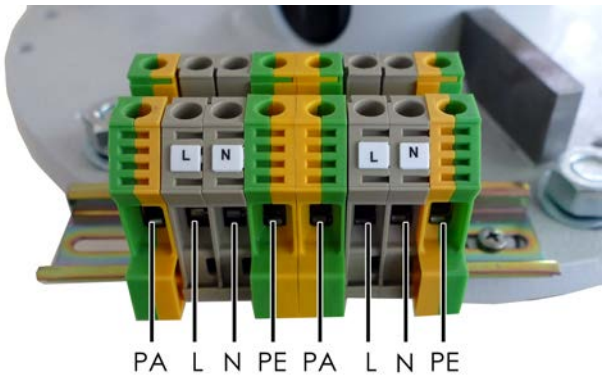


Figure 25. Mains connectors

- Mains connection terminals
- Connect the supply voltage to terminal pair L and N, in accordance with the regional voltage (see also the transformer model plate). Also connect PE and PA (protective earth and potential equalization). Two terminal pairs (as shown in above figure) are used when two Universal Display Mounts are installed. When only one UDM is installed, only one terminal pair is used.

Mains voltage supply with emergency power switching relay

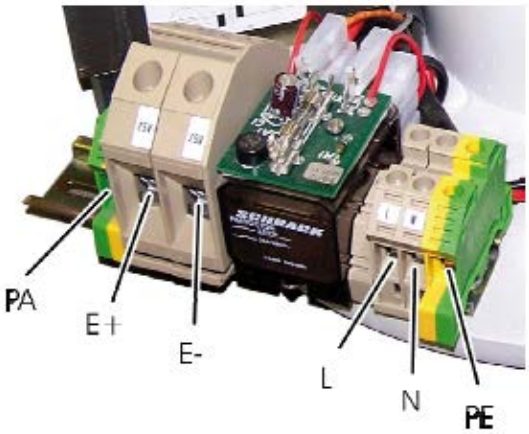


Figure 26. Mains terminals, backup power

Input voltages:

- Supply voltage (L/N)
- Emergency power supply 24 VDC (E+/E-)

Output voltage at the plug connection in the ceiling tube:

- 24 VDC under load (to the surgical lights)

Terminal	Connection
E+	Emergency power supply +24 VDC
E–	Earth: Emergency power supply +24 VDC
L	Mains AC
N	Mains AC
PA/PE	Potential equalization/Earth connection

Ceiling tube of the CHROMOPHARE® surgical lights, with transformer, rectifier board and emergency power switching relay mounted on the ceiling tube. The combination lights are installed with additional terminal pairs. Connect these as well.

Note:

The emergency power switching relay must be ordered separately.

13.2.2 Electrical connections on the mounting plate

Mounting plate

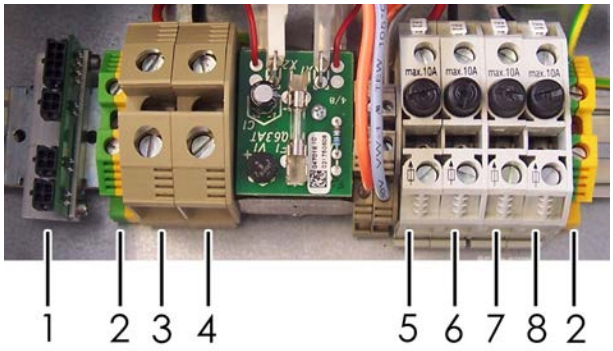


Figure 27. Mounting plate terminals with rectifier board

Only if emergency power supply supplied by customer.

Input voltages:

- Max. 30 VDC or max. 28 VAC

Output voltage:

- +24 to 29 VDC to the surgical light

The voltage drop in the supply to the surgical light can only be compensated by a corresponding increase in the DC input voltage.

Terminal	Connection
1	CAN distribution board
2	PA/PE (Potential equalization/Earth connection)

Terminal	Connection
3	Output +24 to 29 VDC to the surgical light
4	Ground for: Output +24 to 29 VDC DC to the surgical light
5	Emergency power supply input max. +30 VDC
6	Ground for: Emergency power supply input max. +30 VDC
7	AC input max. 28 VAC
8	AC input max. 28 VAC

With combination lights an additional mounting plate is required with terminals installed in this way. Connect these as well.

Note:

The emergency power switching relay must be ordered separately.

Note:

DC fuses must be installed by the customer.

DC or AC low-voltage power supply

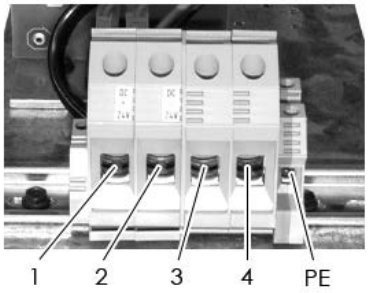


Figure 28. Mounting plate terminals with rectifier board

Input voltages:

- 24 to 28 VDC or 16 to 20 VAC

Output voltage:

- 24 to 28 VDC to the surgical light

The voltage drop in the supply to the surgical light can only be compensated by a corresponding increase in the input voltage.

Terminal	Connection
1	Output +24 to 28 VDC
2	Ground for: Output +24 to 28 VDC

Terminal	Connection
3	Input +24 to 28 VDC Input 16 to 20 VAC
4	Ground for: Input +24 to 28 VDC Input 16 to 20 VAC
PE	Earth connection

With combination lights an additional mounting plate is required with terminals installed in this way. Connect these as well.

13.2.3 Electrical connections for the StrykeCam HD for F-Gen

Connections on the ceiling flange

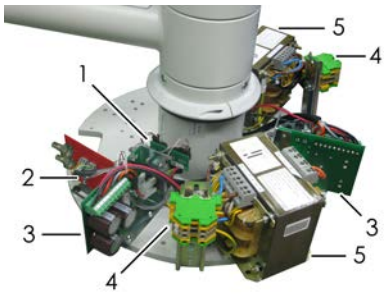


Figure 29. Connections - ceiling flange

Terminal/Position	Connection
1	CAN distribution board
2	Adapter board
3	Rectifier board
4	Input voltages, potential equalization/earth connector
5	Transformer

13.2.4 Electrical connections with wall-mounted control unit

Connections on the ceiling tube

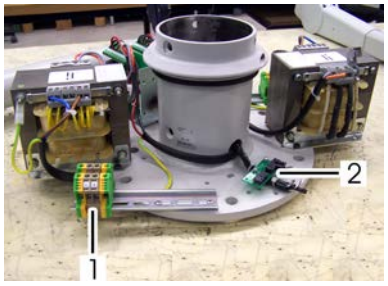


Figure 30. Connections – ceiling flange

Ceiling tube of the CHROMOPHARE® surgical lights

Position	Connection
1	Electrical supply
2	CAN distribution board: connection to wall-mounted control unit (Wall Box)

The combination lights are installed and connected with additional terminal pairs.

13.2.5 Connect the adapter board (StrykeCam HD for F-Gen)

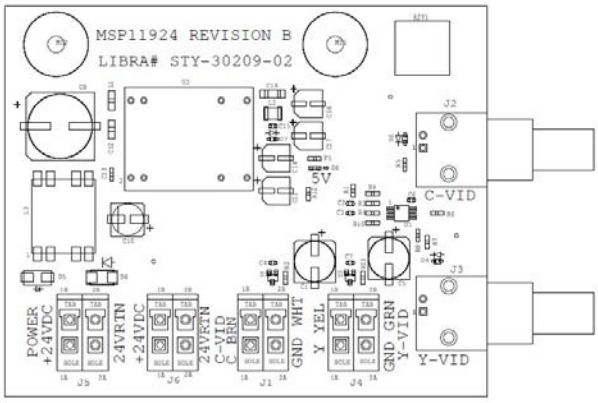
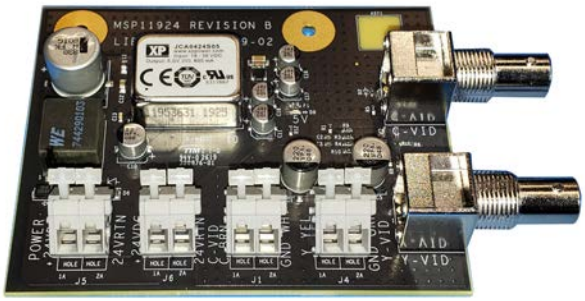


Figure 31. Adapter board

J5.1A	Red
J5.2A	Black
J1.1A	Brown
J1.2A	White
J4.1A	Yellow
J4.2A	Green

Note: J6 connections are used for additional connections (i.e. second camera board).



Cables	Function
Video Chrominance	Green – ground, Yellow – signal
Video Luminance	White – ground, Brown – signal
24V DC power input	Black – ground, Rot – power
Other: PINK and GRAY Molex connector	CAN (Communication) connected to CAN distribution board

13.2.6 Electrical connections wall mounted SK Enclosure

Figure 32. Cable feed from below

The connection cable is generally fed into the wall-mounted SK enclosure from below. To do so dispense of the selected pre-cut opening of the blank panel (1) and use a screw joint as cable bushing (not included within the scope of delivery).

For system components and connections in the wall-mounted SK enclosure, see circuit diagram (available on request from Stryker or your Stryker representative).

Note:

The CAN-bus cable must be no more than 15 m from the ceiling tube.

13.3 Installing the ceiling anchor plate

Note:

Use a calibrated torque wrench that can achieve the required torque value.

13.3.1 Ceiling anchor plate with reinforcement plate

Basic information

Install the ceiling anchor plate on the existing ceiling using a reinforcement plate as described below.

Note:

A prerequisite to this is a ceiling thickness of at least 150 mm with a concrete strength class of at least B 25.

Special tool

- Drilling tools (masonry drill, core drilling equipment)

Installation steps

⚠ Danger:

Risk of severe injury due to improper drilling

Incorrect drilling (e.g., drilling into a reinforcement bar) may compromise the load capacity and load distribution in buildings. This can lead to the collapse of building parts and cause severe personal injury.

✓ Therefore:

- In case of incorrect drilling, immediately consult the structural engineer responsible.

1. Measure the precise position of the monitor carrier arm in accordance with the plan specifications.
2. Mark up four drilling holes. In so doing, use a template (Item No. CB 5103704) if necessary.
3. Drill four holes, Ø 17 mm, using a suitable drilling tool.
4. Place the reinforcement plate (3) on the concrete ceiling (6).
5. Insert the threaded rods (4), together with the hex nuts (1) and lock washers (2) through the reinforcement plate and bore-holes.

6. Attach the ceiling anchor plate (5) to the threaded rods coming down from the ceiling. Secure using lock washers (2) and hex nuts (1). Next, tighten nuts to 180 Nm.
7. Then apply screed (8), if necessary with additional footfall sound insulation (7).

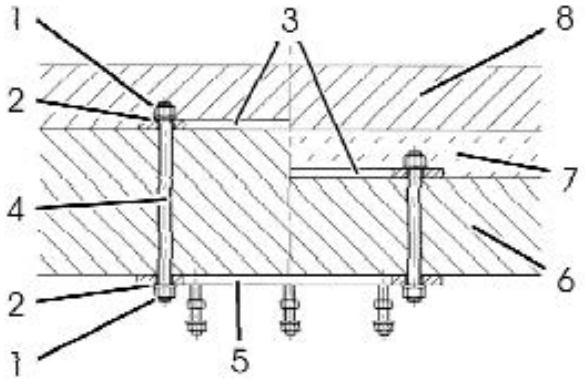


Figure 33. Cross-sectional view of ceiling, left half without and right half with footfall sound insulation

Note:

Reinforcement plate, threaded rods, washers, and hexagonal nuts are not included in the scope of delivery and must be supplied by the customer. The threaded rods must be of a screw strength class of at least 8.8, pursuant to DIN ISO 898 P1. The reinforcement plate can be purchased from Stryker or your Stryker representative.

13.3.2 Ceiling anchor plate with heavy-duty anchors

Basic information

Preferably attach the ceiling anchor plate to the reinforced concrete ceiling with a reinforcement plate. If this is not possible, under certain conditions to be checked in each individual case, heavy-duty anchors can be used for mounting on reinforced concrete ceilings. The following designs apply for the Federal Republic of Germany. In other countries, note the applicable national regulations.

⚠ Danger:

Danger from collapsing building parts if installation is not properly carried out!

Use of inappropriate heavy-duty anchors can result in them working loose from the ceiling or breaking. The entire ceiling anchor can become loose and fall out. This can cause life-threatening injuries for the patient and surgical staff/operator.

✓ Therefore:

- Only use heavy-duty anchors that have building-inspectorate approval from the Building Research Institute (Berlin) for installation in the tension zone! Precise details regarding the planning and installation of fixtures using heavy-duty anchors, the permissible loads and the technical structural conditions are stated in the general structural engineering conditions. The certifications and specific mounting instructions are provided by the manufacturer of the heavy-duty anchor that is used.

Note:

To install the ceiling anchor plate using heavy-duty anchors, you must obtain an individual approval from the appropriate regional construction authorities.

13.3.2.1 Instructions for installing heavy-duty anchors/stud anchors

If installation with heavy-duty anchors is intended, a set of suitable heavy-duty anchors will be included in the delivery. Depending on the type of anchor plate used, the following heavy-duty anchors will be supplied: HILTI HSL-3-G M12/25 or HILTI HSL-3-G M10/20.

The heavy-duty anchors must be installed as specified by the manufacturer.

Note:

Do not use heavy-duty anchors from other manufacturers or with different specifications.

General structural engineering conditions

The heavy-duty anchors listed above can be used subject to the following structural requirements:

- Concrete strength class ≥ B 25
- Ceiling thickness ≥ 150 mm
- Edge distance D from the next ceiling opening ≥ 150 mm

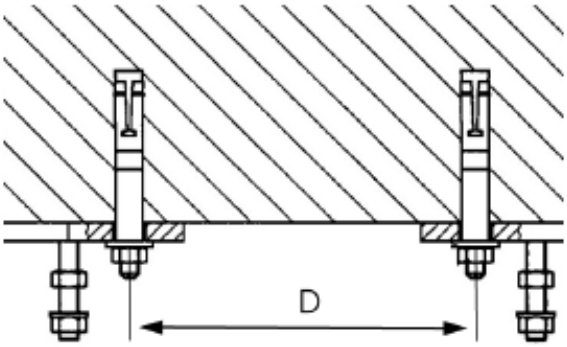


Figure 34. Edge distance

13.3.2.2 Steps for installing the ceiling anchor plate

Special tool

- Drilling tools (masonry drill, core drilling equipment)
- Bellows
- Torque wrench

Installation steps

⚠ Danger:

Risk of severe injury due to improper drilling

Incorrect drilling (e.g., drilling into a reinforcement bar) may compromise the load capacity and load distribution in buildings. This can lead to the collapse of building parts and cause severe personal injury.

✓ Therefore:

- In case of incorrect drilling, immediately consult the structural engineer responsible.

1. Measure the precise position of the monitor carrier arm in accordance with the plan specifications and identify the position of one hole.
2. Drill the hole with a suitable drill and clean (*Instructions for installing heavy-duty anchors/stud anchors [▶ 98]*).
3. Attach ceiling anchor plate (1) to the concrete ceiling (2). Affix the ceiling anchor plate to a heavy-duty anchor (3) using a retaining washer (4) and hexagonal nut (5).

4. Drill the remaining three boreholes. To do so, use the ceiling anchor plate as a drilling template.
5. Apply the remaining three heavy-duty anchors and affix as in step 3.
6. Screw all 4 hexagonal nuts tight with the prescribed tightening torque (*Instructions for installing heavy-duty anchors/stud anchors [▸ 98]*).

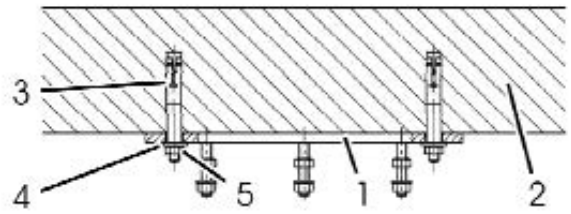


Figure 35. Cross-sectional view of ceiling

Note:

Reinforcement plate, washers, and hexagonal nuts are not included in the scope of delivery and must be supplied by the customer. The reinforcement plate can be purchased from Stryker or your Stryker representative.

13.4 Installing Instructions for Spacer

Note:

Use a calibrated torque wrench that can achieve the required torque value.

13.4.1 Spacer

Note: The spacer is available in three different lengths: up to 700 mm, up to 1,400 mm and from 1,400 mm to 2,000 mm (with bracing).

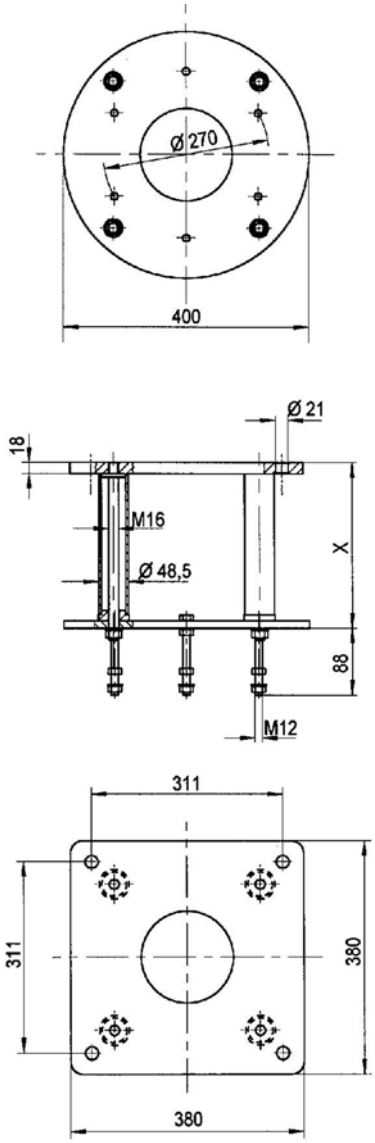
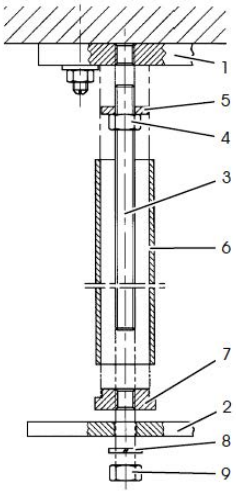


Figure 36. Dimension sheet for spacer (in mm)

13.4.2 Installing the spacer

1. Install the ceiling anchor plate (1), see section *Installing the ceiling anchor plate [▸ 96]*
2. Screw the hex nuts (4) onto the threaded rod (3).
3. Place the washers (5) on the hex nuts. Screw the threaded rods prepared in step 2 into the ceiling anchor plate (1) and secure with the hex nuts (4). Tighten nuts to 180 Nm.
4. Push spacer tubes (6) over the threaded rods and screw tight with clamping nuts (7).
5. Push the mounting plate (2) onto the four protruding threaded rods. Screw on using retaining rings (8) and hex nuts (9).
6. Tighten clamping nuts and hex nuts to 180 Nm.



Installing the brace (with oversized spacer)

If the spacer is longer than 1500 mm, it may deflect excessively in a lateral direction. Therefore, an oversized spacer must be stabilised with four lateral braces made from steel cable.

1. Screw four ring nuts (2) to the upper side of the mounting plate (1).
2. Attach four ring nuts (6) to the concrete ceiling with M8 heavy-duty anchors. The angle alpha between the steel cable and the perpendicular to the concrete ceiling should not exceed 30°.
3. Pass the steel cable (4) through the ring nuts and secure each with three cable clamps (5).
4. Clip the tension lock (3) onto the ring nut (2).
5. Tighten the steel cable with the tension lock.
6. Repeat for the remaining three lateral braces. In so doing, ensure that all four steel cables are similarly tightened.

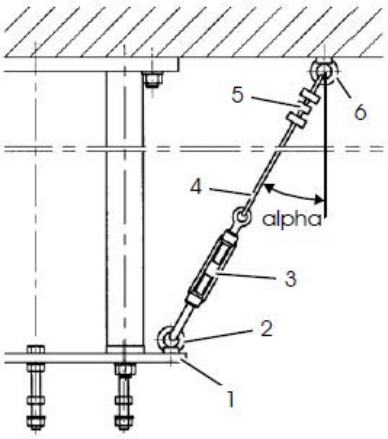


Figure 37. Overview of bracing

13.5 Installing Wall Mounted SK Enclosure

Note: The hospital/contractor is responsible for the installation of the SK enclosure.

Caution:

Damage due to unsafe installation!

Inadequate installation of the wall-mounted control cabinet can result in substantial material damage, since the wall-mounted control cabinet can fall out, thereby damaging the subfloor and the mounting surface.

✓ Therefore:

- The strength and stability of the mounting surface must be sufficient in terms of the total weight of the wall-mounted control cabinet (Wall-mounted control cabinet Section).
- Securely mount the wall-mounted control cabinet using appropriate fixing materials for the nature of the mounting surface.

The connection plate (1) and the pre-cut dummy plate (2) can optionally be mounted onto the upper or underside of the wall-mounted control cabinet using the round-headed screws included within the scope of delivery.

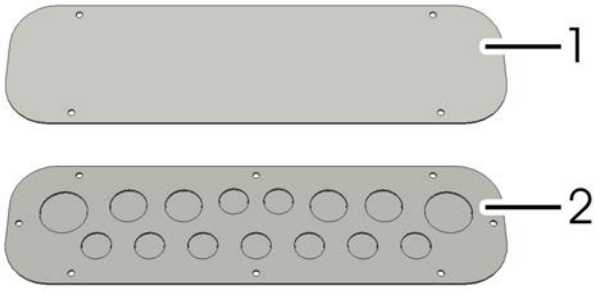


Figure 38. Wall-mounted control cabinet

With the double-version, the individual boxes must be integrated according to the installation sites, using the screws included within the scope of delivery.

Note:

If the wall-mounted control cabinet is delivered with an installation frame, this must be mounted onto the wall-mounted control cabinet before it is installed, using the screws included within the scope of delivery. To do so, use the pre-drilled installation frame as a template.

Figure 39. Installation sites

Changing the door stop

Note:

If only one door hinge is removed, it facilitates the installation of the door on the other side.

1. Loosen the screw (1) and remove the earthing cable (2).

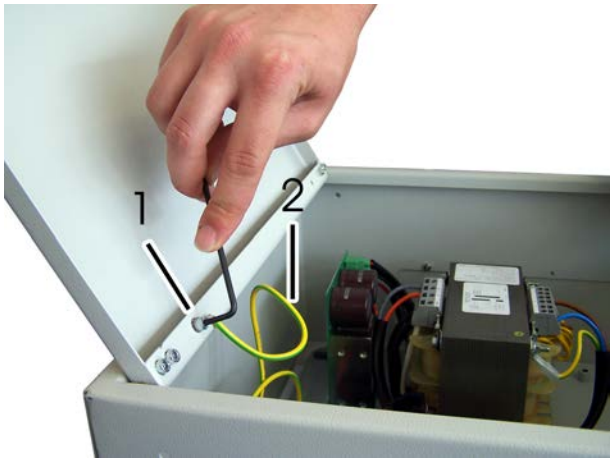


Figure 40. Overview

2. Loosen the nut and remove the earthing cable with the snap rings and washers (1).

Figure 41. Removing the earthing cable

3. Loosen the cylinder screws (1–4) and remove the door hinge (5).
4. Remove the door (6).

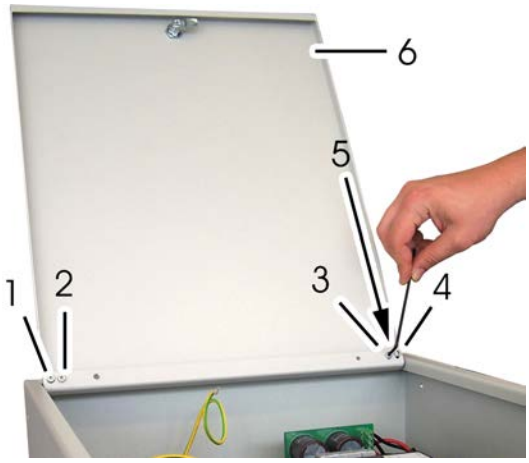


Figure 42. Overview of door and hinges

5. Loosen the countersunk screws (1–3) and remove the door stop plate (4).

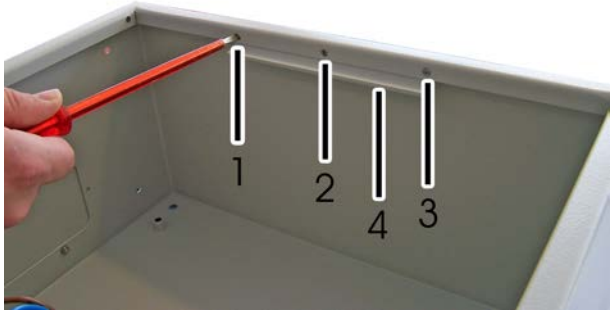


Figure 43. Disassembling the door stop plate

6. Install the door stop plate (1) on the other side using the boreholes provided (3) and the countersunk screws (2).

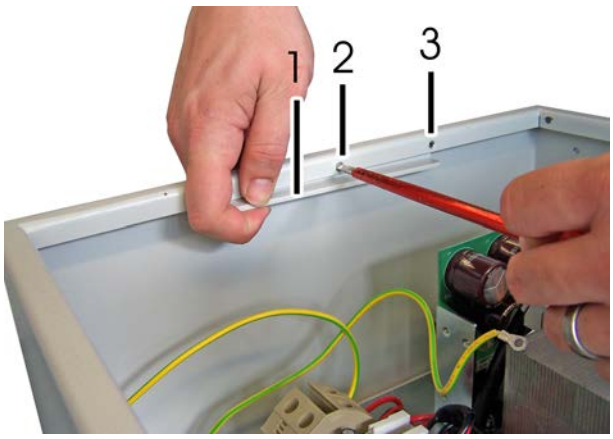


Figure 44. Installing the door stop plate

7. Place the washer (1) onto the hinge.
8. Insert the door hinge to be mounted into the hinge bore hole (2).

Figure 45. Washer

9. Place the washer onto the other hinge.
10. Insert the door hinge into the other hinge bore hole.
11. Install the door using the door hinges and the cylinder screws (1).

Figure 46. Installing the door

12. Position the cable shoe of the earthing cable onto the lower threaded bolt using snap rings, washers and nuts (1).

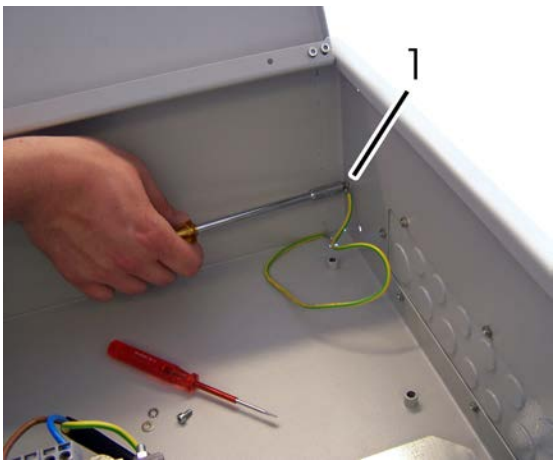


Figure 47. Earthing cable

13. Secure the earthing cable once again using the screw (1).

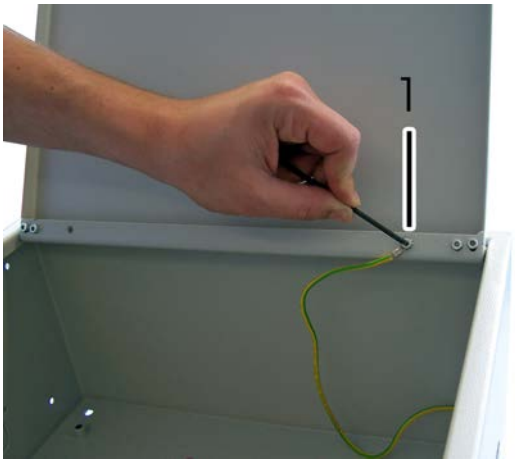


Figure 48. Securing the earthing cable

See also

SK Electronics Enclosure [▶ 58]

13.6 Installation plate for the supply unit

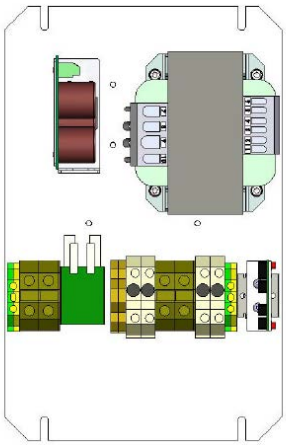


Figure 49. Installation plate for the supply unit

Dimension	Measurement	Unit
Width	230	mm
Height	360	mm
Installation depth with fittings	140	mm

Distance between the retaining holes:

Dimension	Measurement	Unit
Width	163.5	mm
Height	335	mm

13.7 Fuses

Note:

- The following fuses must be supplied by the customer (outside of US/Canada only).
- The fuses must be UL and IEC 60127 approved.
- All fuses: inactive.
- If the Universal Display Mount is supplied without a cable or if 3rd party cables are used for the ChromoView monitor support arm or external camera support arm, the fuses must be selected and installed by the customer in accordance with the cable cross-section.

Device	220 – 240 V L, F1	100 – 127 V L, F1
F 528, F 628	4 A	8 A
ChromoView Single and double monitor support arm	10 A	
Universal Display Mount	8 A	

13.7.1 Terminal voltages

The terminal voltages stated in the following table must be present at the ceiling tube of the CHROMOPHARE® surgical light(s).

AC	DC
21.5 V (upstream rectifier board)	24 (+1,5/–0,3) V

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2021/05 700000162 R

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