



SPECIFICATIONS

Front Terminal Batteries

From the World Leader in VRLA Battery Technology

Designed for durability in Telecommunications and Electric Utility applications, the GNB® Industrial Power **Front Terminal MARATHON®** series provides high performance and reliability in long duration discharge applications. The location of the terminals on the front (vs. the top) of the battery greatly facilitates the installation and maintenance of the product when placed in a cabinet enclosure or on a standard relay rack tray. The **MARATHON®** Front Terminal battery series highlights another example of GNB's extensive experience and worldwide leadership in VRLA technology.

"Designed-in" Quality Manufacturing

Quality manufacturing processes for the **MARATHON®** series batteries incorporate the industry's most advanced technologies including: an automated helium leak detection system, a computer controlled "fill by weight" acid filler, and a temperature controlled water bath formation process. Each and every unit is capacity tested.

High Performance MARATHON® Features

- Patented "Diamond Side-Wall" Design maintains structural integrity in higher operating temperatures
- Durable Flame Retardant Polypropylene Container and Cover complies with UL94 V-0; 28% L.O.I.
- Carry Handles facilitate ease of installation
- High-Compression Absorbent Glass Mat (AGM) Technology ensures greater than 99% recombination efficiency
- Integrated Flash Arrestor ultrasonically welded into cover for secure and safe protection
- 10 Year Design Life in float applications @ 25°C (77°F); 12 year @ 20°C (68°F)
- Superior Lead-Tin-Calcium Positive Alloy helps to resist corrosion
- Higher Vent Opening Pressure minimizes unnecessary gassing; one-way self resealing device
- Front Accessible Copper Alloy, 6 mm, Female Terminals ensures low resistance, high integrity connections
- "Easy On\Easy Off" Terminal Post Protector provides added safety
- Post Design accomodates voltage/ diagnostic probes
- Footprint Ready fits in all standard 23" Relay Rack Applications
- Compliance: Designed in accordance with IEC 60896-21/-22
- No Transport Restrictions: Complies with IATA/ICAO Special Provision A67; DOT-CFR Title 49; IMDG Amendment 34-08

Applications

MARATHON® Batteries incorporate GNB's advanced VRLA technology designed for long life and high performance in:

Telecommunications

- Wireless
- Broadband
- Signaling
- Distributed Power
- Customer Premise

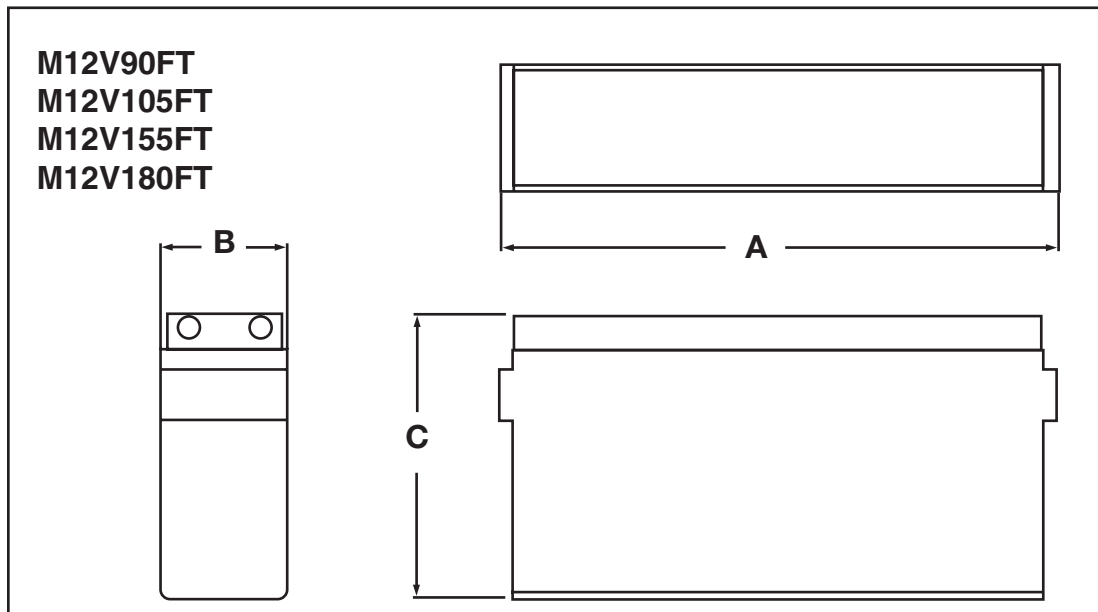
Electric Utility

- Switchgear Control Power
- SCADA
- Industrial UPS



MARATHON® Front Terminal Specifications

Model Number	Voltage	Capacity (AH)		Nominal Dimensions						Nominal Weight	
		8hr To 1.75 VPC @ 25°C	10hr To 1.80 VPC @ 20°C	Inches			Millimeters			lbs.	kg
				A	B	C	A	B	C		
M12V90FT	12	86	86	15.55	4.13	10.63	395	105	270	70	31.5
M12V105FT	12	104	100	20.12	4.33	9.38	511	110	238	79	35.8
M12V155FT	12	155	150	22.00	4.90	11.15	559	124	283	119	53.8
M12V180FT	12	180	175	22.00	4.90	12.50	559	124	318	133	60.0



MARATHON® Front Terminal Electrical Data

Model Number	Short Circuit Current Amps	Internal Resistance (mOhms)
M12V90FT	2358	4.5
M12V105FT	3125	4.0
M12V155FT	3883	3.0
M12V180FT	4147	3.0

Float Voltage & Charging

Constant Voltage charging is recommended

Recommended float voltage: 2.27 VPC @ 25°C (77°F)

Float Voltage Range: 2.25 to 2.30 VPC @ 25°C (77°F)

Equalize voltage: 2.35 VPC for 24 Hours or
2.40 VPC for 12 Hours

NOTE: Design and/or specifications subject to change without notice. If questions arise, contact your local GNB sales representative for clarification



MARATHON® Performance Specifications
Amperes @ 25°C (77°F)

1.75 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	4.1	7.6	8.9	9.7	10.8	12.1	13.9	16.2	19.8	25.4	29.8	36.2	46.3	65.3	110.2
	M12V105FT	4.7	8.9	10.6	11.7	13.0	14.5	16.5	19.2	23.1	29.2	33.9	40.8	51.6	71.8	118.4
	M12V155FT	7.0	13.3	15.7	17.4	19.4	21.7	24.7	28.8	34.8	44.4	51.7	62.4	77.7	105.8	179.4
	M12V180FT	8.1	15.4	18.3	20.2	22.5	25.5	28.4	33.0	39.5	49.9	57.9	69.4	87.6	121.7	194.5

1.78 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	4.1	7.5	8.8	9.6	10.7	12.0	13.7	16.1	19.6	25.2	29.6	35.9	45.9	64.9	108.9
	M12V105FT	4.6	8.8	10.4	11.5	12.8	14.4	16.4	19.0	22.8	28.9	33.6	40.3	51.0	71.1	115.1
	M12V155FT	6.9	13.1	15.5	17.1	19.1	21.5	24.4	28.5	34.4	43.9	51.2	61.9	76.9	104.4	176.4
	M12V180FT	8.0	15.3	18.1	20.0	22.3	25.2	28.2	32.7	39.2	49.5	57.4	68.7	86.7	120.3	191.9

1.80 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	4.1	7.5	8.8	9.6	10.6	12.0	13.7	16.0	19.5	25.1	29.4	35.7	45.6	64.3	107.3
	M12V105FT	4.6	8.7	10.3	11.4	12.7	14.3	16.2	18.9	22.7	28.7	33.3	40.0	50.6	70.5	112.9
	M12V155FT	6.9	13.0	15.4	17.0	19.0	21.3	24.2	28.3	34.2	43.6	50.9	61.5	76.1	102.9	172.4
	M12V180FT	8.0	15.2	18.0	19.8	22.1	25.0	28.0	32.5	38.9	49.1	56.8	68.0	85.8	119.1	188.5

1.81 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	4.0	7.4	8.7	9.5	10.6	11.9	13.6	15.9	19.3	24.9	29.2	35.4	45.1	63.5	105.9
	M12V105FT	4.6	8.7	10.2	11.3	12.6	14.2	16.1	18.7	22.5	28.5	33.0	39.6	50.1	69.8	111.2
	M12V155FT	6.8	12.9	15.3	16.9	18.9	21.1	24.0	28.0	33.9	43.2	50.5	61	75.4	101.5	169
	M12V180FT	7.9	15.1	17.9	19.7	22.0	24.9	27.9	32.3	38.7	48.8	56.5	67.6	85.3	118.2	186.4

1.83 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	4.0	7.4	8.6	9.4	10.5	11.8	13.4	15.7	19.1	24.6	28.7	34.9	44.4	62.5	103.3
	M12V105FT	4.5	8.5	10.1	11.1	12.4	14.0	15.9	18.5	22.2	28.0	32.5	38.9	49.2	68.4	107.9
	M12V155FT	6.7	12.7	15.0	16.6	18.6	20.7	23.7	27.6	33.3	42.5	49.6	59.9	73.7	98.8	162.3
	M12V180FT	7.9	14.9	17.6	19.5	21.7	24.5	27.6	31.9	38.2	48.0	55.6	66.5	83.8	115.9	181.5

MARATHON® Performance Specifications Amperes @ 25°C (77°F)

1.85
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	4.0	7.3	8.5	9.3	10.3	11.6	13.2	15.5	18.8	24.2	28.2	34.0	43.4	61.0	100.3
M12V105FT	4.5	8.4	9.9	10.9	12.2	13.8	15.7	18.2	21.8	27.5	31.9	38.2	48.3	67.1	105.7
M12V155FT	6.6	12.5	14.9	16.4	18.3	20.4	23.3	27.1	32.8	41.8	48.8	58.9	72.2	96.2	155.9
M12V180FT	7.7	14.6	17.3	19.1	21.3	24.1	27.1	31.3	37.4	47.1	54.4	65.0	81.7	112.7	175.2

1.87
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	3.8	7.0	8.2	9.0	10.0	11.3	12.9	15.2	18.5	23.8	27.5	32.9	41.8	58.9	95.6
M12V105FT	4.3	8.2	9.7	10.7	11.9	13.4	15.3	17.7	21.2	26.7	31.0	37.1	46.8	64.9	101.5
M12V155FT	6.4	12.2	14.4	15.9	17.7	19.8	22.6	26.3	31.7	40.4	47.1	56.9	69.7	92.8	141.6
M12V180FT	7.5	14.3	16.9	18.6	20.8	23.5	26.5	30.6	36.5	45.8	52.8	63.0	79.0	108.7	167.9

1.90
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	3.6	6.7	7.9	8.7	9.6	10.8	12.4	14.6	17.8	22.3	26.0	31.3	39.7	55.6	89.3
M12V105FT	4.1	7.8	9.2	10.2	11.3	12.8	14.7	17.0	20.3	25.6	29.6	35.4	44.6	61.6	95.0
M12V155FT	6.1	11.7	13.8	15.2	17.0	18.9	21.5	25.0	30.2	38.4	44.7	53.9	65.7	87.0	126.4
M12V180FT	7.1	13.6	16.1	17.8	19.9	22.0	24.9	28.9	34.8	44.0	51.2	61.5	76.6	101.7	154.6

1.92
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	3.4	6.4	7.5	8.2	9.1	10.3	11.8	13.9	16.6	21.1	24.5	29.4	37.3	52.0	83.6
M12V105FT	3.9	7.4	8.7	9.6	10.7	12.1	13.9	16.4	19.5	24.4	28.2	33.6	42.1	57.9	89.1
M12V155FT	5.8	11.0	13.0	14.3	15.9	18.0	20.5	23.9	28.7	36.4	42.3	50.8	61.9	81.7	112.6
M12V180FT	6.8	12.9	15.3	16.9	18.9	21.1	23.8	27.6	33.1	41.9	48.6	58.3	73.1	96.1	144.5

1.94
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	3.3	6.0	7.1	7.8	8.6	9.7	11.1	13.1	15.9	20.1	23.2	27.6	34.9	48.5	78.3
M12V105FT	3.7	7.0	8.3	9.1	10.1	11.4	13.1	15.5	18.6	23.2	26.7	31.8	39.7	54.3	82.8
M12V155FT	5.5	10.3	12.2	13.4	14.9	16.9	19.4	22.7	27.3	34.7	40.2	48.0	58.3	76.7	98.6
M12V180FT	6.4	12.2	14.4	15.9	17.7	20.0	22.5	26.1	31.2	39.4	45.6	54.6	69.1	89.8	134.0



MARATHON® Performance Specifications
Watts per Cell @ 25°C (77°F)

1.75 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	8.0	15.1	17.9	19.7	22.0	24.9	27.9	32.4	39.1	49.4	57.3	68.9	87.8	123.9	204.0
	M12V105FT	8.9	16.9	20.0	22.0	24.6	27.8	31.2	36.2	43.5	55.2	64.1	77.0	97.6	136.2	221.0
	M12V155FT	13.7	26.1	30.9	34.0	38.0	42.3	47.8	55.2	66.1	82.9	96.1	115.2	144.9	200.3	326.6
	M12V180FT	15.7	28.4	33.2	36.3	40.1	45.0	51.3	60.0	72.6	92.9	108.6	131.5	165.0	225.8	355.8

1.78 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	7.9	15.0	17.7	19.5	21.8	24.6	27.7	32.3	38.8	49.3	57.2	68.7	87.4	122.7	201.2
	M12V105FT	8.8	16.8	19.8	21.8	24.3	27.5	30.9	35.9	43.1	54.7	63.5	76.3	96.7	135.0	217.6
	M12V155FT	13.6	25.9	30.6	33.8	37.7	41.8	47.3	54.7	65.5	82.5	95.5	114.2	143.9	199.3	323.6
	M12V180FT	15.6	28.2	33.0	36.1	39.9	44.7	51.0	59.6	72.1	92.1	107.6	130.2	163.8	222.2	349.0

1.80 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	7.8	14.8	17.6	19.4	21.6	24.4	27.6	32.1	38.6	49.0	57.0	68.6	87.1	122.0	198.5
	M12V105FT	8.8	16.7	19.7	21.7	24.2	27.4	30.7	35.7	42.9	54.3	63.1	75.8	96.0	134.0	214.6
	M12V155FT	13.5	25.7	30.5	33.6	37.5	41.5	46.9	54.3	64.9	81.8	94.7	113.2	142.6	197.3	318.5
	M12V180FT	15.6	28.1	32.8	35.9	39.7	44.4	50.7	59.1	71.5	91.3	106.6	128.9	162.6	219.6	342.7

1.81 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	7.8	14.8	17.5	19.3	21.5	24.3	27.4	31.9	38.4	48.7	56.6	68.1	86.5	121.0	196.1
	M12V105FT	8.8	16.5	19.6	21.6	24.0	27.2	30.5	35.5	42.6	53.9	62.6	75.2	95.2	132.9	211.9
	M12V155FT	13.5	25.6	30.3	33.4	37.2	41.2	46.6	53.9	64.5	81.1	93.8	112.2	141.2	195.2	314.0
	M12V180FT	15.6	28.0	32.7	35.8	39.5	44.2	50.4	58.9	71.1	90.8	105.9	128.0	161.8	218.0	339.2

1.83 Final VPC	Model Number	Time														
		24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
	M12V90FT	7.7	14.7	17.4	19.1	21.3	24.1	27.2	31.7	38.1	48.3	56.2	67.5	85.6	119.7	192.2
	M12V105FT	8.6	16.3	19.3	21.3	23.7	26.8	30.3	35.0	42.0	53.2	61.7	74.1	93.8	130.7	209.1
	M12V155FT	13.3	25.2	29.8	32.9	36.7	40.7	46.0	53.2	63.5	79.8	92.3	110.2	138.5	191.1	305.2
	M12V180FT	15.5	27.8	32.4	35.4	39.1	43.8	49.8	58.1	70.1	89.4	104.3	125.9	159.1	214.2	330.7

MARATHON® Performance Specifications Watts per Cell @ 25°C (77°F)

1.85
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	7.6	14.5	17.2	18.9	21.1	23.9	27.0	31.3	37.6	47.7	55.5	66.6	84.4	117.8	187.6
M12V105FT	8.6	16.1	19.0	20.9	23.2	26.2	30.0	34.5	41.4	52.4	60.8	72.9	92.2	128.4	204.8
M12V155FT	13.1	24.9	29.4	32.4	36.2	40.2	45.4	52.5	62.6	78.6	90.7	108.2	135.8	187.1	296.7
M12V180FT	15.3	27.4	31.9	34.9	38.5	43.1	49.0	57.1	68.8	87.6	102.1	123.0	155.0	209.4	320.7

1.87
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	7.4	14.1	16.7	18.4	20.5	23.2	26.3	30.5	36.6	46.3	53.7	64.5	81.6	113.7	181.4
M12V105FT	8.4	15.6	18.4	20.3	22.6	25.5	29.3	33.7	40.4	51.0	59.2	71.0	89.7	124.7	197.6
M12V155FT	12.8	24.2	28.6	31.5	35.1	39.2	44.2	51.0	60.8	76.1	87.8	104.6	131.0	180.0	282.3
M12V180FT	15.1	26.9	31.3	34.1	37.7	42.1	47.9	55.7	67.1	85.2	99.2	119.4	151.7	203.8	309.0

1.90
Final
VPC

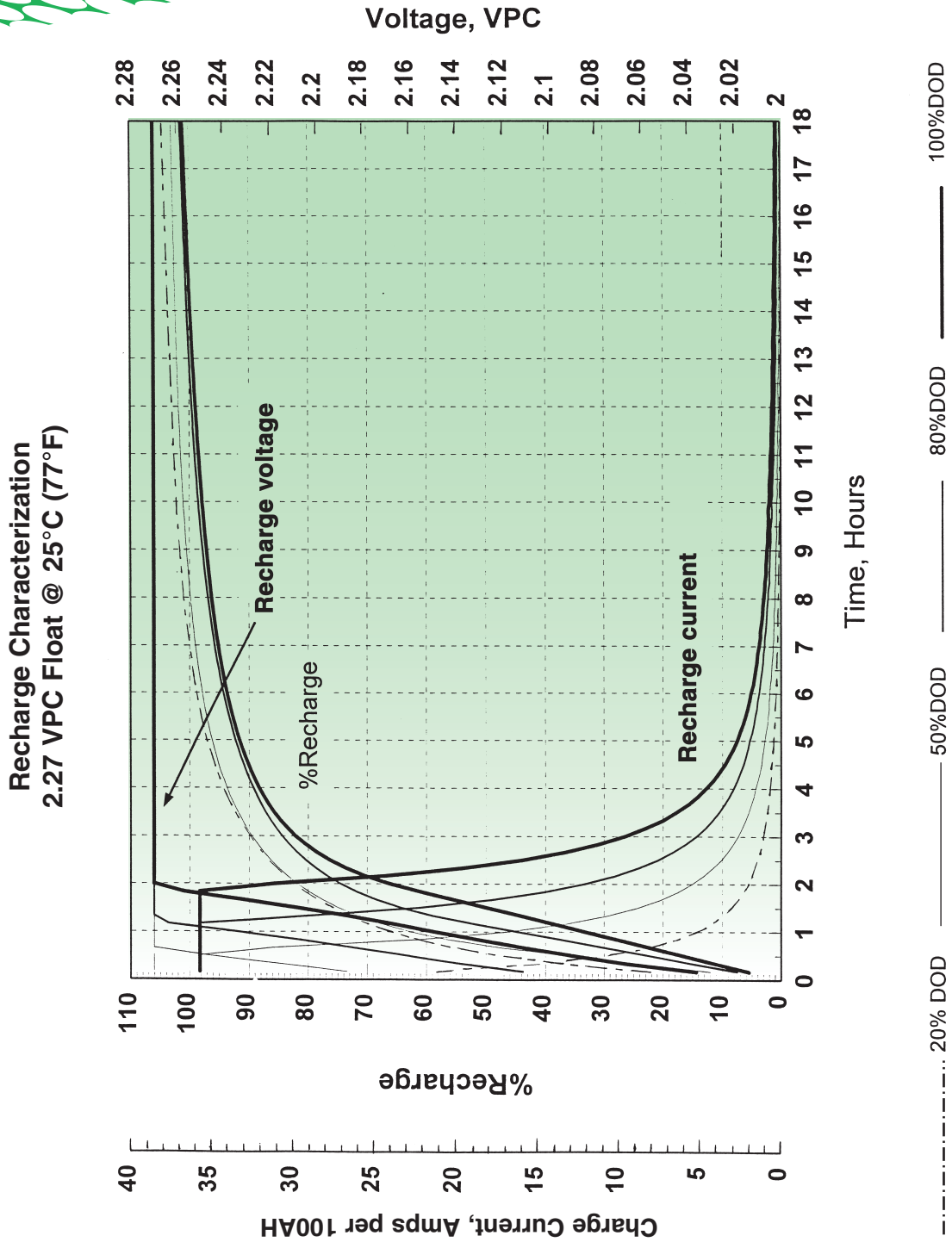
Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	7.2	13.6	16.0	17.7	19.7	22.3	25.4	29.4	35.2	44.5	51.5	61.8	78.0	108.2	172.1
M12V105FT	8.0	15.0	17.7	19.4	21.6	24.4	28.0	32.3	38.7	48.9	56.7	68.0	85.8	119.2	187.4
M12V155FT	12.3	23.2	27.5	30.3	33.7	37.6	42.3	48.8	58.0	72.4	83.7	100.0	124.2	168.5	262.1
M12V180FT	14.6	25.8	30.0	32.7	36.0	40.1	45.5	52.9	63.5	80.4	93.4	112.1	142.0	192.9	288.4

1.92
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	6.8	12.9	15.3	16.8	18.7	21.2	24.4	28.2	33.7	42.4	49.1	58.7	74.0	102.3	162.2
M12V105FT	7.6	14.2	16.8	18.4	20.5	23.1	26.5	31.2	36.9	46.5	53.8	64.4	81.2	112.5	177.1
M12V155FT	11.7	22.1	26.1	28.7	31.9	35.7	40.4	46.6	55.6	69.8	80.6	96.1	118.2	158.3	243.1
M12V180FT	14.1	24.8	28.7	31.3	34.4	38.4	43.5	50.4	60.4	76.3	88.4	105.9	133.8	184.2	272.0

1.94
Final
VPC

Model Number	Time														
	24 hr	12 hr	10 hr	9 hr	8 hr	7 hr	6 hr	5 hr	4 hr	3 hr	2.5 hr	2 hr	1.5 hr	1 hr	0.5 hr
M12V90FT	6.5	12.3	14.5	16.0	17.8	20.1	23.1	26.9	32.1	40.4	46.7	55.7	69.9	96.5	152.7
M12V105FT	7.2	13.5	15.9	17.4	19.4	21.8	25.1	29.5	35.1	44.1	51.0	60.9	76.6	105.8	167.2
M12V155FT	11.2	20.9	24.7	27.1	30.2	34.1	38.5	44.5	53.0	66.5	76.8	91.6	112.1	149.0	226.2
M12V180FT	13.6	23.7	27.4	29.8	32.7	36.4	41.1	47.6	56.9	71.6	82.7	98.9	124.5	174.5	254.6



GNB Industrial Power
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 Canada – Tel: 800.268.2698
www.gnb.com