



VR SOLAR® TRUE FRONT ACCESS

For Renewable Energy Storage
Up to 178 Ampere-Hour Capacity



VRS 12-175F & VRS 12-155F

The VR Solar® TFA, with its grid alloy and high paste density, provides superior performance in both high cycling and float applications. This VRLA/AGM battery is designed to be easy to install and maintain, and offers long life and exceptional performance.

FEATURES AND BENEFITS

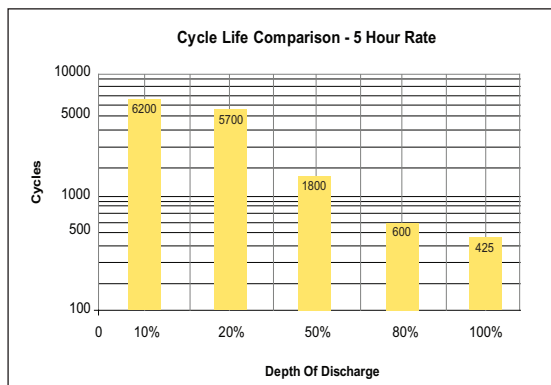
- High density pasted plates for high cycle life
- Low calcium Lead/Tin alloy plates for efficient gas recombination for long life in both cycling and float applications
- Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance.
- Multicell design for economy of installation and maintenance.
- True Front Access threaded copper alloy inserts for reduced maintenance and increased safety.
- Terminal versatility - ease of diagnostic readings with C&D Ohmic Ring®
- Reduced headspace driving higher energy density, in cabinet or rack applications.
- Can be used in any orientation. Upright, side, or end mounting recommended.
- Thermally welded case-to-cover bond to eliminate leakage.
- High-strength, leak-free polymer container allows for non-restricted shipping;
Water: non-hazardous per IMDG Amendment 27
Surface: non-hazardous per DOT-CFR title 49, 171-189 Air: IATA/ICAO, provision A67
- UL-recognized component
- Battery hardware and removable carrying handles included
- Excellent choice for both stand alone PV systems and hybrid systems

AVAILABLE RACK OPTIONS

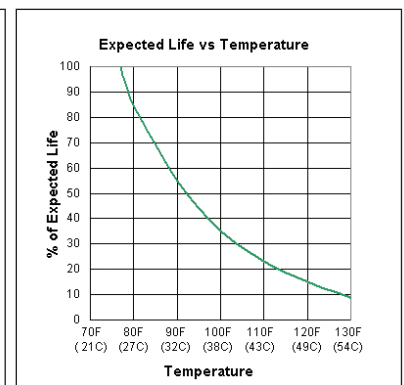
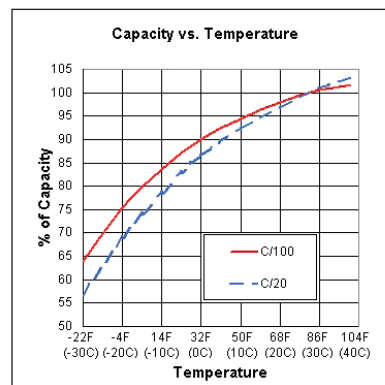
(SEE BROCHURE 12-1064 FOR RACKS AND TRAYS)

- Standard and EP racks with multiple tiers

INDUSTRY LEADING CYCLE LIFE



BATTERY CHARACTERISTICS



Model	Discharge Amperes per Unit @ 77°F (25°C)										
	End Voltage	1 H	3 H	4 H	5 H	8 H	12 H	20 H	24 H	48 H	100 H
VRS 12-155F	1.90	60.6	31.8	26.2	22.0	15.2	10.8	6.89	5.82	3.02	1.49
	1.85	70.9	34.3	27.7	23.2	16.1	11.4	7.34	6.22	3.25	1.61
	1.80	82.2	36.4	29.3	24.5	16.8	11.8	7.54	6.42	3.36	1.67
	1.75	89.1	38.1	30.1	25.2	17.1	12.1	7.69	6.54	3.41	1.69

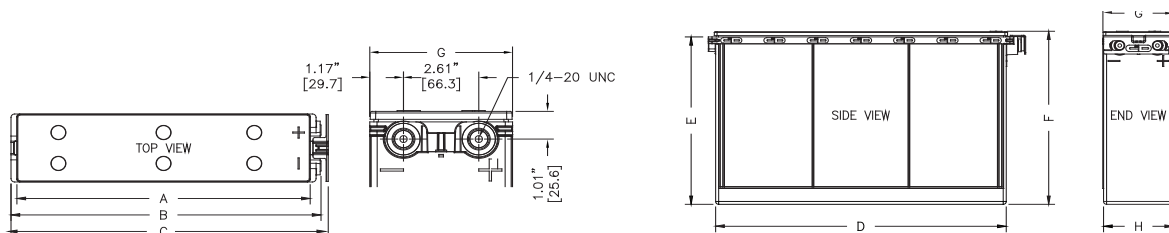
Model	Discharge Watts per Cell @ 77°F (25°C)										
	End Voltage	1 H	3 H	4 H	5 H	8 H	12 H	20 H	24 H	48 H	100 H
VRS 12-155F	1.90	118.6	63.2	52.2	44.0	30.5	21.6	13.8	11.6	6.04	3.00
	1.85	137.5	67.5	54.9	46.3	32.0	22.8	14.7	12.4	6.50	3.24
	1.80	157.7	71.1	57.6	48.5	33.4	23.6	15.1	12.8	6.72	3.36
	1.75	170.5	74.2	59.1	49.6	33.9	24.1	15.4	13.1	6.82	3.39

Model	Discharge Amperes per Unit @ 77°F (25°C)										
	End Voltage	1 H	3 H	4 H	5 H	8 H	12 H	20 H	24 H	48 H	100 H
VRS 12-175F	1.90	70.0	36.8	30.3	25.4	17.6	12.5	8.0	6.73	3.49	1.77
	1.85	82.0	39.7	32.1	26.9	18.6	13.2	8.5	7.20	3.76	1.91
	1.80	95.0	42.0	33.9	28.3	19.4	13.7	8.7	7.42	3.89	1.98
	1.75	103.0	44.0	34.9	29.1	19.8	14.0	8.9	7.56	3.95	2.00

Model	Discharge Watts per Cell @ 77°F (25°C)										
	End Voltage	1 H	3 H	4 H	5 H	8 H	12 H	20 H	24 H	48 H	100 H
VRS 12-175F	1.90	137.1	73.1	60.4	50.9	35.3	25.0	15.9	13.5	6.99	3.53
	1.85	159.0	78.1	63.5	53.5	37.0	26.4	17.0	14.4	7.52	3.81
	1.80	182.3	82.2	66.6	56.0	38.6	27.3	17.4	14.8	7.77	3.95
	1.75	197.1	85.8	68.3	57.3	39.2	27.8	17.7	15.1	7.89	4.00

SPECIFICATIONS

Cells Per Unit	6
Nominal Voltage Per Unit	12
Weight	VRS12-155F 115lbs (53kg) VRS12-175F 131lbs (60kg)
Operating Temperature Range (with temperature compensation)	Discharge: -40°F (-40°C) to +160°F (71°C) Charge: -10°F (-23°C) to +140°F (60°C)
Optimal Operating Temperature Range	+74°F (23°C) to +80°F (27°C)
Recommended Maximum Charging Current Limit	30 amperes per 100Ah @ C ₂₀
Float Charging Voltage	13.62 to 13.8 VDC/unit Average at 77°F (25°C)
Equalization and Cycle Service Charging Voltage	14.4 to 14.8 VDC/unit Average at 77°F (25°C)
Maximum AC Ripple (Charger)	0.5% RMS or 1.5% P-P of float charge voltage recommended for best results Maximum voltage allowed = 4% P-P Maximum current allowed = C ₂₀ RMS (20 Amps)
Self Discharge	Up to 6 months at 77°F (25°C) and then a freshening charge is required. Batteries stored at temperatures at greater than +77°F (25°C) will require recharge sooner than batteries stored at temperatures less than 77°F (25°C). See C&D bulletin 41-7272, Self Discharge and Inventory Control for details.
Temperature Compensation Factor (Charging)	+3 mV/F per cell when operating, below 77°F (25°C) -3 mV/F per cell when operating, above 77°F (25°C)
Terminal	Threaded copper alloy insert terminal to accept ¼-20 UNC bolt
Terminal Hardware Torque	110 in.-lbs (12.4 N-m)



VRS12-155F & VRS12-175F

MODEL	A		B		C		D		E		F		G		H	
	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm	in	mm
VRS12-155F	20.35	516.86	21.51	546.25	22.01	559.05	20.16	512.17	10.73	272.47	11.14	282.96	4.95	125.73	4.86	123.39
VRS12-175F	20.35	516.86	21.51	546.25	22.01	559.05	20.16	512.17	12.19	309.55	12.60	320.04	4.95	125.73	4.86	123.39

* All dimensions in inches and (millimeters). All dimensions are for reference only. Contact a C&D Representative for complete dimensions information.
* Note: Batteries to be mounted with 0.5 IN (12.5MM) spacing minimum and free air ventilation.