

# 500-4000 Watts

## HELIOS<sup>TM</sup>

### MiniSystem 3500

3500W 48VDC Compact Power Solution



### Special Features

- 3500 W Constant Power Output System
- Available in 110VAC or 220VAC systems
- 110 VAC systems can be configured with two to eight, 250W Output Rectifiers providing up to 1750W with N+1 Redundancy
- 220 VAC systems can be configured with two to eight, 500 W Output Rectifiers providing up to 3500W with N+1 Redundancy
- Adjustable DC Output Voltage: (-48 to -55.5V)
- Adjustable Temperature Compensation slope
- Adjustable Low Voltage Disconnect threshold
- Adjustable Battery Charge Control (2A to 20A)
- Distribution: 10 Fuse Positions (0 to 10A each) - Up to five breakers
- Power Factor Correction
- Current Sharing
- Soft Switching Technology
- Full Output Power at Full Temperature Range
- Full Complement of LED and Output Alarms Available
- Connections for up to Two Battery Strings
- EMI Filter Included
- Compact Dimensions (21.5"W x 5.25"H x 14"D) (550 x 133 x 300mm)
- Fan shelf (220 V rectifier shelf) for increased temperature range, and installation in areas with low volume or no air flow

### Safety

UL 1950  
UL1801  
CSA C22.2 No. 950  
IEC-950

### Electrical Specs

#### Input

AC Input	
Voltage Range	110/120VAC (86 - 132 VAC) (250 watt rectifiers) 208/240VAC (176 - 264VAC) (500 watt rectifiers)
Frequency	50 - 60 Hz (45 - 65 Hz)
Efficiency	>86% @ full load
Power Factor	0.99 (50 - 100% output load)
Total Harmonic Distortion	<5% @ loads over 50% of rated current

#### Output

DC Output	
Voltage Range	-54.5 VDC (user selectable -48 to -55.5VDC)
Maximum Output Power	1750 watt/system @110VAC (250 watt rectifiers) with N+1 3500 watt/system @ 220VAC (500 watt rectifiers) with N+1
Voltage Regulation	+/- 0.5% load/line and +/- 1.0% load/line/temperature
Dynamic Response	from +/-5% for 10% to 90% or 90% to 10% load step changes
Protection and/or Disconnect	fuses/breakers
Parallel Operation	+/- 10% of rated current between rectifiers
Power/Current Limit	102.5% +/- 2.5% of rated power at output voltages >42VDC
Capacitor Precharge	Automatic upon insertion
Hold-up Time	Output voltage remains above -42V for 30 msec
Voice Frequency Noise	<55 dB rnC
High Frequency Noise	<250 mV rms

### Environmental

EMC/EMI: FCC Class B, CISPR Class A for digital devices,  
Bellcore GR-1089-CORE

ESD: Bellcore TR-NWT-001089

Temperature: -40° to +50°C with natural convection cooling (250 W  
rectifiers), -40°C to +65°C with forced air cooling (500 W rectifiers) @ 250  
cfm

Humidity: 0 to 95% RH (non-condensing)

Acoustic Noise: <65dB for full system including eight rectifiers, fan unit

Cooling: natural convection / forced air

Shock and Vibration: Bellcore TR-NWT-000063

Fire Resistance: UL94VO

Voltage Surge Protection: meets IEEE C62.41-1991

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**Ordering Information**

**BREAKER SELECTION FOR MS3500<sup>1</sup>**

Current *	Model Number
1 A	A0723076
5 A	A0723033
10 A	A0723035
15 A	A0723037
20 A	A0723007
30 A	A0723040
50 A	A0723008

\* All breakers rated @ 80VDC

**Notes:**

**Standard Controller**

The standard controller has control, monitoring and alarm features including temperature compensation and thermal control functions. Settings are selectable with dipswitches. Settings are programmed in the controller card and automatically configure any newly inserted rectifiers.

- 1 System includes Shelf, Controller, Low Voltage Battery Disconnect, and one Fuse Pack., 10 ft. alarm cable, and 10 ft temperature probe
2. 220 V standard controller system includes shelf, controller, fan shelf, low voltage battery disconnect, one fuse pack, 10 ft alarm cable and 10 ft temperature probe.

**Controller:**  
 1 = 110 V Standard Controller  
 3 = 220 V Standard Controller

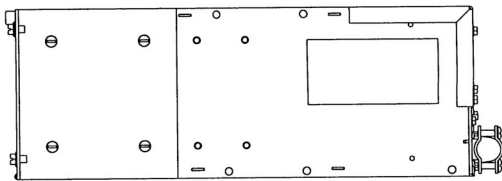
**Output Power (110 V):**

2 = 500 W      6 = 1500 W  
 3 = 750 W      7 = 1750 W  
 4 = 1000 W    8 = 1750 W (w/N+1)  
 5 = 1250 W

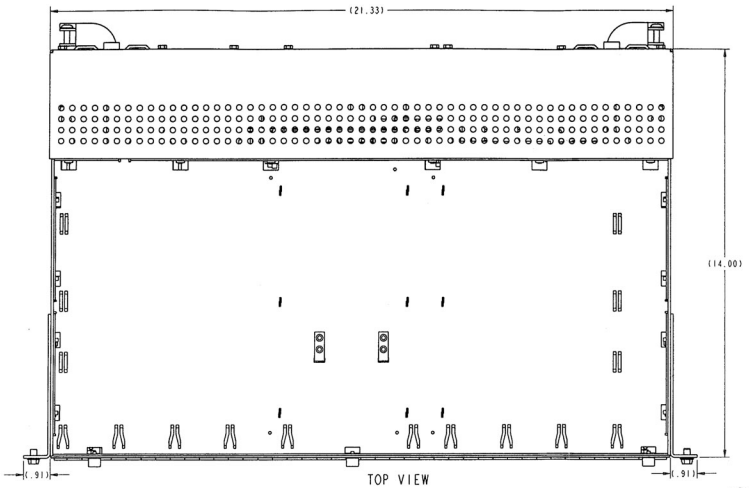
**Output Power (220 V):**

10 = 1000 W    13 = 2500 W  
 11 = 1500 W    14 = 3000 W  
 12 = 2000 W    15 = 3500 W  
 16 = 3500 W (w/N+1)

MS3500A- [ ] - [ ]



RIGHT SIDE VIEW



TOP VIEW

