

Sola 4K Industrial On-Line Uninterruptible Power Systems (UPS)

The true on-line (double conversion) protection offered by the S4K Industrial UPS series eliminates a wider range of potential power problems (spikes, surges and extended overvoltage, noise and other transients, sags and extended brownouts), even difficult-to-track harmonics and dangerous frequency variations that are common with stand-by generator operation. The S4K Industrial UPS modules are a true on-line design with a sinewave output in a slim 2U (3.5") package.

Features

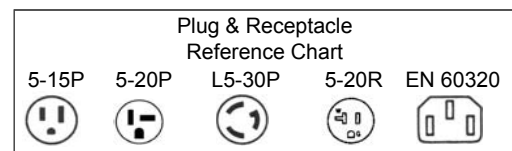
- Hardwire capability for permanent installation
- Small 2U height maximizes available space
- Two step battery recharge extends battery life
- PWM inverter reduces output voltage distortion
- Add on batteries for extended runtimes
- Integral sealed, non-spillable batteries for safe ground or air transportation.
- Hot swappable, user replaceable battery
- Automatic restart
- Automatic and manual battery test
- RS232 communication port easily interfaces with the PC.
- Rack-mount or Stand-alone tower mounting for 700 - 3000 VA units
- 700 - 3000 VA units are field configurable with a PC as a frequency converter (bypass will be disabled).
- Integral dynamic bypass reduces shutdowns
- Compatible with most standby generators
- Input and output noise suppression
- Two year limited warranty
- Factory start-up included for 10 KVA models. See the Extended Warranty section for details.
- \$25,000 UPS Power Protection Promise



The LED display indicates battery capacity, percentage of UPS load, battery operation, bypass operation and UPS fault condition. The rack-tower models are also supplied with securing flanges and rack slide mounting hardware.


Units can be easily hardwired by removing the attached line cord and receptacle plate. All S4K Industrial models include a conduit knockout cover in the box.

Note: The securing flanges do not support the weight of the UPS. Rack slides or shelves are required (sold separately).






Selection Tables

Rack-mount Units

Capacity (VA/W)	Catalog Number	Typical Runtime (minutes)*	Input Plug/Output Receptacle	Approx. Ship Weight lbs (kg)
120 VAC, 50/60 Hz Models 				
700/490	S4K2U700	17/44	5-15P / (4) 5-15R	50 (22.7)
1000/700	S4K2U1000	11/25	5-15P / (4) 5-15R	51 (23.1)
1500/1050	S4K2U1500	7/20	5-15P / (4) 5-15R	52 (23.6)
2000/1400	S4K2U2000	6/14	5-20P / (4) 5-20R (15/20 amp type)	56 (25.4)
3000/2100	S4K2U3000	5/16	L5-30P / (4) 5-20R (15/20 amp type)	76 (34.5)

* Full/Half Load (in minutes).

6 and 10 KVA, 50/60 Hz, Hardwired Tower Models

Capacity (VA/W)	Catalog Number	Typical Runtime (minutes) ¹	Input	Output	Approx. Ship Weight lbs (kg)
UL / cUL Units - with internal isolation transformer 					
5400/3780	S46000-208	7/15	208	(L-N-L 1ph) 2 208/120 ±7%	381 (183)
9000/6300	S410000-208	10/22	208	(L-N-L 1ph) ² 208/120 ±7%	633 (287)
6000/4200	S46000-240	7/15	208, 220, 230, 240	(L-L w/ CT Neutral) 3 208 ⁴ /104, 220/110, 230/115, 240/120 ±7%	374 (170)
10000/7000	S410000-240	10/22	208, 220, 230, 240	(L-L w/ CT Neutral) ³ 208 ⁴ /104, 220/110, 230/115, 240/120 ±7%	626 (284)
CE Units 					
10000/7000	S410000-5	10/22	208, 220, 230, 240	(L-N output) 208 ⁴ /220/230/240 ±3%	500 (277)
CE Units - with internal isolation transformer 					
10000/7000	S410000-5-ISO	10/22	208, 220, 230, 240	(L-N output) 208 ³ /220/230/240 ±7%	626 (284)

Notes:

1. Full/Half Load (in minutes).
2. Units have a 5 pole output terminal block labeled L1, L2, L2A, N, G; for 208/120V applications.
3. Units have a 4 pole output terminal block labeled L1, L2, N, G; for 220/110, 230/115, 240/120 or 120-0-120V applications.
4. Derate 10% for 208V output setting.

S3K2U and S4K2U Accessories

Hardware for Rack-mount (order part number separately)

Catalog Number	Description	Approx. Ship Weight lbs (kg)
Rack Slide Kits		
SRS1826	Rack slide kit for racks with 18-32" deep support rails.	8 (3.6)
Telecom/Relay Rack Shelves		
SRS500	Flush-mount shelf for 19" wide telecom/relay rack	17 (7.7)
SRS600	Center-mount shelf for 19" wide telecom/relay rack	19 (8.6)
SRS700	Flush-mount shelf for 23" wide telecom/relay rack	21 (9.5)
SRS800	Center-mount shelf for 23" wide telecom/relay rack	22 (10.0)

Note: Mounting equipment can be used for both the UPS and battery.

Optional Equipment

Catalog Number	Description
Communications Options	
SNMPWEBCARD	Ethernet communications kit, (Supports SNMP, HTTP and OCP) includes SNMP hardware, MIB, configuration cable and installation manual.
RELAYCARD-INT	Relay contact board, relay contact signals for "On Battery", "Low Battery", "On Bypass", "Summary Alarm" and "UPS Fault".

Power A/C Distribution (PAD)

PADs provide output distribution, input connection and a rotary maintenance bypass switch. The PAD is field installed by the customer and allows the UPS to be removed without interrupting power to the load.

Catalog Number	Description	Series
A2D115HW	120 Volt, Hardwired for use with 15 Amp Input	S3K2U (1000 - 1440 VA Models) S4K2U (700 - 1500 VA Models)
A2D120HW	120 Volt, Hardwired for use with 20 amp Input	S4K2U (2000 VA Model)

Note: PADs can only be used with units having matching receptacles for the line cords provided.



External Battery Cabinets – For Tower/Rack-mount UPS Models Only

External battery cabinets are designed to provide the 1000 VA, 1500 VA, 2000 VA and 3000 VA tower/rack-mount models with extended run time. Battery cabinets contain the interconnecting cable for attachment to the UPS. Refer to page 70 for Extended Warranty information.

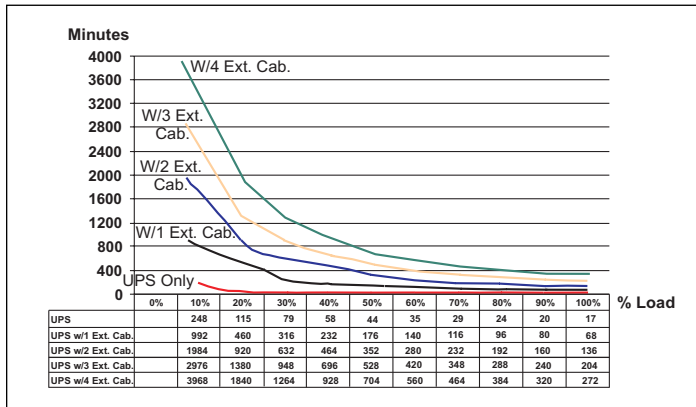
Catalog Number	Typical Runtime (minutes)*	Battery Cabinet (Quantity)	Battery Cabinet Catalog Number	Approx. Ship Weight lbs (kg)
S4K2U700	17/44	Internal	N/A	- (-)
	68/176	One	S4K2U48BAT	71 (32.3)
	136/352	Two	S4K2U48BAT	142 (64.6)
S4K2U1000	11/25	Internal	N/A	- (-)
	44/100	One	S4K2U48BAT	71 (32.3)
	88/200	Two	S4K2U48BAT	142 (64.6)
S4K2U1500	7/20	Internal	N/A	- (-)
	28/80	One	S4K2U48BAT	71 (32.3)
	56/160	Two	S4K2U48BAT	142 (64.6)
S4K2U2000	6/14	Internal	N/A	- (-)
	18/42	One	S4K2U48BAT	71 (32.3)
	49/98	Two	S4K2U48BAT	142 (64.6)
S4K2U3000	5/16	Internal	N/A	- (-)
	20/64	One	S4K2U96BAT	103 (46.5)
	40/128	Two	S4K2U96BAT	205 (93)
S46000-208 or S46000-240	7/15	Internal	N/A	- (-)
	37/88	One	14240BAC	353 (160)
	60/140	Two	14240BAC	706 (320)
S410000-208 or S410000-240 or S410000-5 or S410000-5-ISO	10/22	Internal	N/A	- (-)
	60/164	One	24240BAC	871 (395)
	125/335	Two	24240BAC	1742 (790)

* Full/Half Load (in minutes).

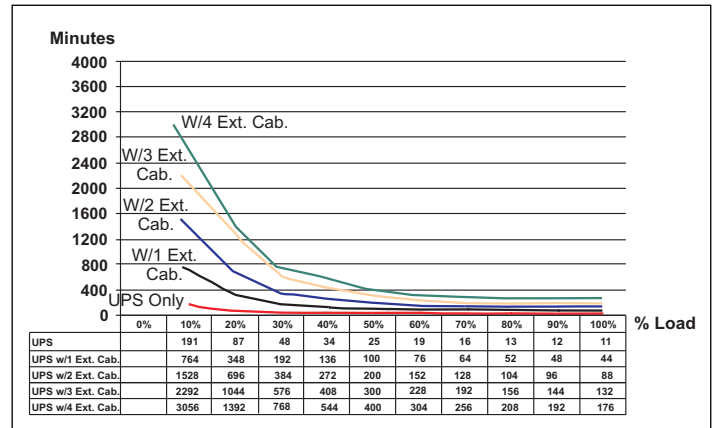
Note: Contact **Technical Services** for longer runtimes.

S4K Battery Run Time¹ Charts - continued

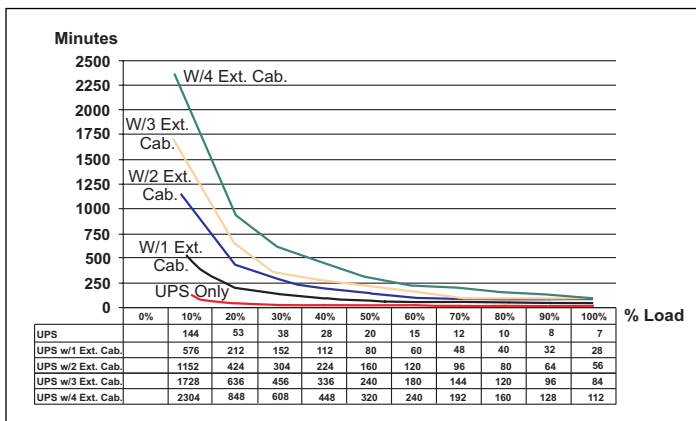
S4K2U700 Model



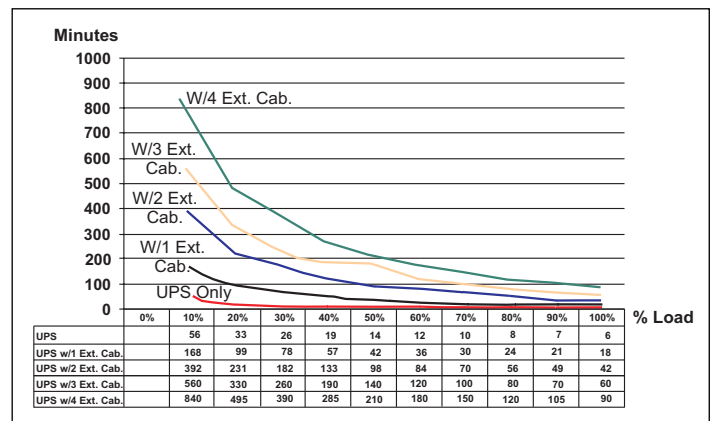
S4K2U1000



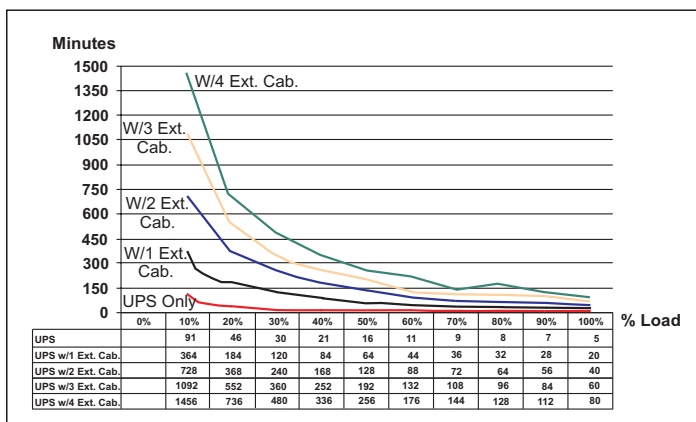
S4K2U1500 Model



S4K2U2000



S4K2U3000



Note:

- Run times are at 25°C, 77°F, with 100% capacity batteries and resistive loads.

Sola S4K, 120 VAC, 50/60 Hz Tower/Rack-mount Models Specifications

Catalog Number	S4K2U700	S4K2U1000	S4K2U1500	S4K2U2000	S4K2U3000
Capacity (VA/Watts)	700/490	1000/700	1500/1050	2000/1400	3000/2100
Dimensions - inches (mm)					
Unit (H x W x D)	17 in x 3.5 in x 21.5 in (432 mm x 89 mm x 546 mm)			17 in x 3.5 in x 24.2 in (432 mm x 89 mm x 618 mm)	
Shipping (H x W x D)	23 in x 10 in x 27 in (584 mm x 254 mm x 685 mm)				
Approx. Shipping Weight - lbs (kg)	58 (26)	58 (26)	60 (27)	63 (28)	78 (35)
Input AC Parameters					
Voltage Range (typical)	120 VAC nominal; variable based upon output load				
100% - 90% Loading	80-83 VAC to 134-138 VAC		90-93 VAC to 134-138 VAC		
90% - 70% Loading			80-83 VAC to 134-138VAC		
70% - 30% Loading	70-73 VAC to 134-138 VAC				
30% - 0% Loading	60-63 VAC to 134-138 VAC				
Frequency	48.1-51.9 Hz or 57.6-62.4; auto sensing				
Input Connector	6 ft. Attached, w/ NEMA 5-15 Plug		10 ft. Attached, w/ NEMA 5-20 Plug	10 ft. Attached, w/ NEMA L5-30 Plug	
Output AC Parameters					
Voltage	100/110/120/127 VAC; $\pm 3\%$ switch selectable				
Receptacles	(4) NEMA 5-15R		(4) NEMA 5-20R		
Frequency	50 Hz or 60 Hz				
Waveform	Sinewave				
Utility Mode Overload	200% for 8 cycles; 130% for 10 seconds with transfer to bypass				
Battery Parameters					
Battery Type	Valve-Regulated, non-spillable, lead acid				
Battery Qty x Voltage x Rating	4 x 12 V x 7 or 7.2 AH		4 x 12 V x 9AH	6 x 12 V x 9AH	
Back-up Time	See Battery Runtime Charts				
Environmental					
Operating Temperature	+32°F to +104°F (0°C to +40°C)				
Storage Temperature	+5°F to +122°F (-15°C to +50°C)				
Relative Humidity	0% to 95%, non-condensing				
Operating Elevation	Up to 10,000 ft. (3000 m) at 104°C (40°C) without derating				
Storage Elevation	15.000m (50,000 ft.) maximum				
Audible Noise	Less than 45 dBA @ 1 meter				
Agency					
Safety	UL 1778, c-UL Listed				
RFI/EMI	FCC Part 15, Subpart B, Class A				
Immunity	IEEE 587 Category A				

Sola S4K 6 KVA, 50/60 Hz, Tower Models Specifications

Catalog Number	S46000-240	S46000-208
Capacity (VA/Watts)	6000/4200	5400/3780
Dimensions- inches (mm)		
Unit (H x W x D)	31.5 in x 10.3 in x 22.0 in (800 mm x 260 mm x 588 mm)	31.5 in x 10.3 in x 22.0 in (800 mm x 260 mm x 588 mm)
Shipping (H x W x D)	40.9 in x 16.3 in x 33.1 in (1040 mm x 415 mm x 840 mm)	40.9 in x 16.3 in x 33.1 in (1040 mm x 415 mm x 840 mm)
Approx. Shipping Weight - lbs (kg)	374 (170)	381 (173)
Input AC Parameters		
Voltage Range (typical)	240 VAC nominal (208 VAC switch selectable); variable based upon output load	208 VAC nominal; variable based upon output load
100% - 90% Loading	186 VAC to 280 VAC; ±5.0 VAC	
90% - 70% Loading	159 VAC to 280 VAC; ±5.0 VAC	
70% - 30% Loading	139 VAC to 280 VAC; ±5.0 VAC	
30% - 0% Loading	119 VAC to 280 VAC; ±5.0 VAC	
Frequency	46.6-52.4 Hz or 57.1-62.9; auto sensing	
Input Connector	Hardwired terminal block	
Output AC Parameters		
Voltage	208/1041, 220/110, 230/115, 240/120 VAC; ±7% switch selectable	208/120 VAC; ±7%
Receptacles	Hardwired terminal block	
Frequency	50 Hz or 60 Hz; auto sensing	
Waveform	Sine wave	
Utility Mode Overload	200% for 8 cycles; 130% for 10 seconds with transfer to bypass	
Battery Parameters		
Battery Type	Valve-Regulated, non-spillable, lead acid	
Battery Qty x Voltage x Rating	20 x 12 V x 7.0 AH	20 x 12 V x 7.0 AH
Back-up Time	7 min. minimum	7 min. minimum
Environmental		
Operating Temperature	+32°F to +104°F (0°C to +40°C)	
Storage Temperature	+5°F to +122°F (-15°C to +50°C)	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3000 m) at 104°C (40°C) without derating	
Storage Elevation	15.000m (50,000 ft.) maximum	
Audible Noise	< 55 dBA @ 1 meter	< 55 dBA @ 1 meter
Agency		
Safety	UL 1778; Listed	
RFI/EMI	FCC Part 15 Class A	
Immunity	IEEE C62.41:199	

Sola S4K 10 KVA, 50/60 Hz, Tower Models Specifications

Catalog Number	S410000-5	S410000-5-ISO
Capacity (VA/Watts)	10000/7000	10000/7000
Dimensions- inches (mm)		
Unit (H x W x D)	38.0 in x 13.4 in x 25.3 in (965 mm x 340 mm x 640 mm)	
Shipping (H x W x D)	47.2 in x 20.5 in x 32.7 in (1200 mm x 520 mm x 830 mm)	
Approx. Shipping Weight - lbs (kg)	500 (227)	626 (284)
Input AC Parameters		
Voltage Range (typical)	240 VAC nominal; switch selectable	230 VAC nominal; variable based upon output load
100% - 90% Loading	186 VAC to 280 VAC; ± 5.0 VAC	
90% - 70% Loading	159 VAC to 280 VAC; ± 5.0 VAC	
70% - 30% Loading	139 VAC to 280 VAC; ± 5.0 VAC	
30% - 0% Loading	119 VAC to 280 VAC; ± 5.0 VAC	
Frequency	46.6-52.4 Hz or 57.1-62.9; auto sensing	
Input Connector	Hardwired terminal block	
Output AC Parameters		
Voltage	L-N-G Output 208 ¹ /220/230/240 VAC; $\pm 3\%$ switch selectable	L-N-G Output 208 ¹ /220/230/240 VAC; $\pm 7\%$ switch selectable
Receptacles	Hardwired terminal block	
Frequency	50 Hz or 60 Hz; auto sensing	
Waveform	Sine wave	
Utility Mode Overload	200% for 8 cycles; 130% for 10 seconds with transfer to bypass	
Battery Parameters		
Battery Type	Valve-Regulated, non-spillable, lead acid	
Battery Qty x Voltage x Rating	40 x 12 V x 7.0 AH	
Back-up Time	10 min. minimum	
Environmental		
Operating Temperature	+32°F to +104°F (0°C to +40°C)	
Storage Temperature	+5°F to +122°F (-15°C to +50°C)	
Relative Humidity	+5°F to +122°F (-15°C to +50°C)	
Operating Elevation	Up to 10,000 ft. (3000 m) at 104°C (40°C) without derating	
Storage Elevation	15.000m (50,000 ft.) maximum	
Audible Noise	< 65 dBA @ 1 meter	
Agency		
Safety	EN50091-1, TUV/GS listed, CE Low Voltage Directive compliant	
RFI/EMI	EN50091-2, Class A; CE EMC Directive	
Immunity	IEC 801-2, Level 4 / IEC 801-3, Level 3 / IEC 801-4, Level 4 / IEC801-5, Level 3	

1. Derate 10% for 208V output setting.

Sola S4K 10 KVA, 50/60 Hz, Tower Models with Output Isolation Transformer Specifications

Catalog Number	S410000-240	S410000-208
Capacity (VA/Watts)	10000/7000	9000/6300
Dimensions- inches (mm)		
Unit (H x W x D)	38.0 in x 13.4 in x 25.3 in (965 mm x 340 mm x 640 mm)	
Shipping (H x W x D)	47.2 in x 20.5 in x 32.7 in (1200 mm x 520 mm x 830 mm)	
Approx. Shipping Weight - lbs (kg)	626 (284)	633 (287)
Input AC Parameters		
Voltage Range (typical)	240 VAC nominal (208 VAC switch selectable); variable based upon output load	208 VAC nominal; variable based upon output load
100% - 90% Loading	186 VAC to 280 VAC; ±5.0 VAC	
90% - 70% Loading	159 VAC to 280 VAC; ±5.0 VAC	
70% - 30% Loading	139 VAC to 280 VAC; ±5.0 VAC	
30% - 0% Loading	119 VAC to 280 VAC; ±5.0 VAC	
Frequency	46.6-52.4 Hz or 57.1-62.9; auto sensing	
Input Connector	Hardwired terminal block	
Output AC Parameters		
Voltage	L-L-G w/CT N 208 ¹ /1041, 220/110, 230/115, 240/120 VAC; ±7% switch selectable	L-N-L-G 1ph 208/120 VAC; ±7%
Receptacles	Hardwired terminal block	
Frequency	50 Hz or 60 Hz; auto sensing	
Waveform	Sine wave	
Utility Mode Overload	200% for 8 cycles; 130% for 10 seconds with transfer to bypass	
Battery Parameters		
Battery Type	Valve-Regulated, non-spillable, lead acid	
Battery Qty x Voltage x Rating	40 x 12 V x 7.0 AH	
Back-up Time	10 min. minimum	
Environmental		
Operating Temperature	+32°F to +104°F (0°C to +40°C)	
Storage Temperature	+5°F to +122°F (-15°C to +50°C)	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3000 m) at 104°C (40°C) without derating	
Storage Elevation	15,000m (50,000 ft.) maximum	
Audible Noise	< 65 dBA @ 1 meter	
Agency		
Safety	UL 1778; Listed	
RFI/EMI	FCC Part 15 Class A	
Immunity	IEEE C62.41:199	

1. Derate 10% for 208V output setting.

External Battery Cabinets Specifications

Catalog Number	S4K2U48BAT	S4K2U96BAT	14240BAC	24240BAC
Used with UPS Model	S4K2U700 S4K2U1000 S4K2U1500 S4K2U2000	S4K2U3000	S46000-208 S46000-240 S46000-5 S46000-5-ISO	S410000-208 S410000-240 S410000-5 S410000-5-ISO
Dimensions - inches (mm)				
Unit (H x W x D)	17 in x 3.5 in x 21.5 in (432 x 89 x 546)	17 in x 3.5 in x 24.2 in (432 x 89 x 618)	31.6 in x 10.2 in x 24.1 in (803 x 260 x 612)	38.0 in x 15.0 in x 28.6 in (965 x 380 x 726)
Shipping (H x W x D)	23 in x 10 in x 27 in (584 x 254 x 685)	23 in x 10 in x 27 in (584 x 254 x 685)	42 in x 15.8 in x 33.5 in (106.3 x 400 x 850)	48.7 in x 22.1 in x 33.5 in (1235 x 560 x 850)
Approx. Shipping Weight - lbs (kg)	71.1 (32.3)	102.5 (46.5)	353 (160)	871 (395)
Battery Parameters				
Type	Valve-regulated, non-spillable, lead acid			
Battery Qty x Voltage x Rating	(2 x 4) 12 V x 7.0 or 7.2 AH	(2 x 6) 12 V x 7.0 or 9.0 AH	12 V x 20 (x2); 7.0 or 7.2 Ah	12 V x 20; 40 Ah
Back-up Time	See Battery Run Time Charts			
Recharge Time	5 Hours to 95% capacity after full discharge into 100% load		42 hours to 90% capacity after full discharge into 100% load	16 hours to 90% capacity after full discharge into 100% load
Environmental				
Operating Temperature	+32°F to +104°F (0°C to +40°C)			
Storage Temperature	+5°F to +122°F (-15°C to +50°C)			
Relative Humidity	0% to 95%, non-condensing			
Operating Elevation	Up to 10,000 ft. (3000 m) at 104°C (40°C) without derating			
Storage Elevation	15,000 m (50,000 ft.) maximum			
Agency				
Safety	UL 1778, c-UL listed (Suitable for computer room applications) EN50091-1-1, CE compliance mark, for both Low Voltage and EMC Directives		UL 1778, c-UL listed (Suitable for computer room applications)	