

Sorensen SFA Series

5–150 kW

High Slew Rate Current Source

40–250 V

The SFA family builds on the industry leading Sorensen SGA series to provide a high-power current source for laser diode applications. State of the art high power laser diodes require well-regulated current control to avoid catastrophic damage. Under anomalous operating conditions, excessive stored energy in the output circuit of the power supply can result in peak stresses that can permanently damage the device. Providing a constant current regulation mode only, the SFA's low stored energy output minimizes damage potential for sensitive devices as well as enabling a current slew rate of up to 400 A/msec.



20–2500 A

208 400 480

ETHERNET GPIB LXI RS232

Power	3U			6U		
	5 kW	10 kW	15 kW	20 kW	25 kW	30 kW
Voltage	Maximum Current (<i>parallel for higher current</i>)					
40	125	250	375			
60	83	167	250	333	417	500
100	50	100	150	200	250	300
160	31	63	94	125	156	188
250	20	40	60	80	100	120
Specifications (at nominal AC line and 25°C)						
Control Mode	Current Control Only.					
Front Panel Meter Accuracy	Voltage $\pm 0.5\%$ of full-scale + 1 digit, Current $\pm 0.5\%$ of full-scale + 1 digit.					
Load Regulation	(no load to full load, nominal AC input) Current 0.1% of rated output current.					
Line Regulation	($\pm 10\%$ of nominal AC input) Current 0.05% of rated output current.					
Current Ripple	1% p-p of full-scale current.					
Transient Response	Output current recovers to within 1% of current setpoint within 1ms for a 10 to 100% or 100% to 10% step load change.					
Current Overshoot	Maximum 8% of full-scale for 0 to 100% change into a resistive load.					
Output Capacitance	40V Models $< 20 \mu\text{F} / 5 \text{ kW}$, 60V Models $< 10 \mu\text{F} / 5 \text{ kW}$, 100/160/250V Models $3 \mu\text{F} / 5 \text{ kW}$.					
Stability	$\pm 0.05\%$ of setpoint after 8-hr. warm-up at fixed line, load, and temperature using remote sense.					
Power Factor	> 0.9 typical for 208/220VAC input, > 0.78 typical for 380/400VAC input, > 0.7 typical for 440/480VAC input.					
Remote Analog Control	Current Setpoint Accuracy, $\pm 0.8\%$ of full-scale output; Overcurrent Protection, $\pm 1\%$ of full-scale output; Resistive Control, 0–5k Ω = 0–100% Current; Voltage Control, 0–5 or 0–10 VDC = 0–100% Current; Overcurrent Protection, 0–5.5 VDC = 0–110%					
Efficiency	87% typical at full load, nominal line.					
Remote Control/Monitor	On/Off control via contact closure, 6–120 VDC or 12–240VAC, and TTL or CMOS switch, current monitor, OCP limit set, summary fault status.					
Overvoltage Protection	Fixed at approximately 110% of the rating compliance voltage. Reset requires cycling the front panel standby power switch off/on.					
Ethernet Control (optional)	LXI compliant 10/100 Base T Ethernet remote control with web server for direct control of power supply via web browser.					
Isolated Analog Control (optional)	Input to Output Isolation: 500 V Compliant with max. terminal float voltage. Recommended operation under SELV normal conditions.					
Regulatory	Certified to UL/CSA 61010 and IEC/EN 61010-1, CE Compliant (LVD and EMC Directives), Input power options.					
Input Power Configuration	3-phase, 3-wire plus ground. Not phase, rotation sensitive. Neutral not used.					
Input Power Voltage Selection	208/220 VAC $\pm 10\%$, 47 to 63 Hz, 380/400 VAC $\pm 10\%$, 47 to 63 Hz, 440/480 VAC $\pm 10\%$, 47 to 63 Hz.					
Environmental						
Ambient Operating Temperature	0 to 50°C					
Storage Temperature	-25 to 65°C					
Temperature Coefficient	Current Setpoint 0.03%/°C of rated current.					
Cooling	Internal Fans. Zero clearance stacking.					
Humidity	0 to 90% at 40°C; 0 to 50% at 25°C, non-condensing.					
Altitude	Full power at 5,000 feet, 10% derating of full power for every 1,000 feet above 5,000 feet.					
Physical						
5 to 15 kW in 3U	19.00in W x 25.12in D x 5.25inH; 80 lbs., (48.3cm W x 63.8cm D x 13.3cm H; 36 kg)					
20 - 30 kW in 6U	19.00in W x 25.12in D x 10.5in x H; 160 lbs., (48.3cm W x 63.8cm D x 36.7cm H; 73 kg)					
Accessories						
Modifications	AJ: Front panel dust filter - factory installed - 3U unit only.					
K550212-01 / 5550568-01	3U Rack Slides (for 5kW, 10kW and 15kW models) / Front panel dust filter - field installation kit - 3U unit only K550213.					
K550213-01 / 9550589-01	6U Rack Slides (for 20kW, 25kW and 30kW models) / AC input cover - 3U unit only.					

