



5. Specifications

Table 35 lists the specifications of the AC source. Specifications are warranted over the ambient temperature range of 0 to 40 °C. Unless otherwise noted, specifications are per phase for a sinewave with a resistive load at an output frequency range of 45 Hz to 1000 Hz and apply after a 30-minute warm-up period.

5.1 Performance Specifications

Parameter	CI 3000iL		CI 4500iL		CI 4801iL
Phases mode:	1	3	1	3	1
Output Ratings					
Power per phase:	3000 VA	1000 VA	4500 VA	1500 VA	4800 VA
Voltage Ranges (rms):	0-150 V 0-300 V	0-150 V 0-300 V	0-150 V 0-300 V	0-150 V 0-300 V	0-150 V 0-300 V
Maximum rms Current per phase:					
low range	20 A	6.7 A	30 A	10 A	32 A
high range	10 A	3.3 A	15 A	5 A	16 A
Maximum Repetitive Current per phase:					
low range	120 A	40 A	120 A	40 A	96 A
high range	60 A	20 A	60 A	20 A	48 A
Crest Factor (Current):	6.0		4.0		3.0
Output Frequency Range:	45 Hz - 5 kHz				45 Hz - 1 kHz
Constant Voltage Ripple and Noise:	-60 dB (20 kHz-10 MHz)				
Load Regulation:	0.5 %				
Line Regulation:	0.1 %				0.3 %
Maximum Total Harmonic Distortion:	1 % (45 Hz - 1 kHz) 1% + 1%/kHz (>1 kHz - 5 kHz)				1 % (45Hz - 1kHz)
Programming Accuracy (@ 25°C ±5°C)					
Voltage (rms)	0.15% + 0.3 V (45-100 Hz) 0.5% + 0.3 V (>100-500 Hz) 1% + 0.3 V (>500-5 kHz)				
Frequency:	0.01% + 0.01 Hz				
Phase:	0.1° (45-100 Hz) 1° (>100-1000 Hz) 1° + 1°/kHz (>1 kHz - 5 kHz)				
Measurement Accuracy (@ 25°C ±5°C)					
Phases:	1	3		1	
rms Voltage:	0.05% + 250 mV	0.05% + 250 mV		0.05% + 250 mV	
rms Current:	0.1% + 50 mA	0.1% + 25 mA		0.1% + 150mA	
Frequency:	0.01% + 0.01 Hz	0.01% + 0.01 Hz		0.01% + 0.01 Hz	
Power (VA):	0.15% + 5 VA	0.15% + 3 VA		0.15% + 9 VA	
Power (Watts):	0.15% + 5 W	0.15% + 3 W		0.15% + 9 W	
Power Factor:	0.01	0.01		0.01	
AC Input Voltage Range (Vac):	180-254 Vac (3Ø) 360-440 Vac (3Ø)	180-254 Vac (3Ø) 360-440 Vac (3Ø)		180-254 Vac (3Ø) 360-440 Vac (3Ø)	
AC Input Frequency:	47 - 63 Hz				

Table 35 : iL Series performance specifications

5.2 IEC Measurement Specifications

(4801iL only)*

Parameter	Range	Accuracy (\pm)	
Frequency	50 / 60 Hz		
Current (Low range)			
Fundamental	0 - 3.2 A	0.03 % + 3 mA	
Harmonics 2 - 49		0.03 % + 2 mA + 0.2%/KHz	
Current (High range)			
Fundamental	0 - 32 A	0.05 % + 6 mA	
Harmonics 2 - 49		0.05 % + 3 mA + 0.2%/KHz	
Flicker	Compliant with IEC 868		
Flicker perceptibility	Compliant with IEC 868		
Reference Impedance		3 % (at 0.4 Ω and 796 μ H)	
Synchronization		< 1 ppm	
Current shunt burden		0 Volts	
Current harmonic smoothing filter		1.5 sec	
Pst Integration time		1, 5, 10 or 15 min	
	Sample rate	Window width	Acq. overlap
50 Hz Operation			
Rectangular measurement window	12.8 KHz	16 cycles	None
Hanning measurement window	8.533 KHz	24 cycles	50 %
60 Hz Operation			
Rectangular measurement window	15.360 KHz	16 cycles	None
Hanning measurement window	7.680 KHz	32 cycles	50 %

* Specifications are in % of reading for 4801iL sinewave output with resistive load at output frequency of 50 or 60 Hz in IEC mode of operation.

Table 36 : IEC Measurement Specifications

5.3 Typical Specifications

Typical specifications as listed in Table 37 are not warranted but are descriptions of typical performance determined either by design or type testing.

Parameter	CI 3000iL	CI 4500iL	CI 4801iL
Input Ratings			
Maximum Input Current (rms):			
180 -254 Vac (3Ø) 360-440 Vac (3Ø)	18 A 10 A	25 A 15 A	
Maximum Input Power:	5800 VA/4100 W	8900 VA/5900 W	
Output Isolation Voltage:	300 V rms		
Average Programming Accuracy:			
rms current	0.2% + 40 mA 3Ø 0.2% + 80 mA 1Ø	0.2% + 80 mA	
Average Programming Resolution			
rms Voltage:	80 mV		
Overvoltage Programming (OVP):	2 V		
rms Current:	2.5 mA 3Ø 7.5 mA 1Ø	2.5 mA 3Ø 7.5 mA 1Ø	7.5 mA
Output Frequency:	0.001 Hz		
Phase:	0.001°		
Average Measurement Resolution			
rms Voltage:	10 mV		
rms Current:	6 mA 3Ø 5 mA 1Ø	1.2 mA	
Time values			
List Dwell Time:	0 - 1.08 X 10 ⁶ s	0 - 4.30 X 10 ⁶ s	
Triggering Accuracy With Respect to Phase Synchronization:	250 µs	100 µs	
Trigger In Response Time:	400 µs	200 µs	
Minimum Resolution for Dropout:	500 µs		
Output Response Time: (output change from 10% to 90% or 90% to 10% of its total excursion with full resistive load)	50 µs		
Remote Inhibit Response Time:	<1 ms		
Harmonic Measurement Time:	1 harmonic ≤ 100 ms; all 50 harmonics ≤ 2 s		
Miscellaneous			
Recommended Calibration Interval:	1 year		
Remote Sense Capability:	Up to 10 Vrms can be dropped across each load lead.		
Waveform Table Horizontal Resolution:	1024 points		
Trigger In / Out characteristics			
Trig Out (HC TTL output):	V _{ol} 0.8 V max. @ 1.25 mA V _{oh} 3.3 V max. @ 1.25 mA		
Trig In (10 kΩ pullup):	V _{il} 0.8 V max. V _{ih} 2 V min.		
INH/FLT Characteristics			
Maximum ratings:	16.5 VDC between INH terminals; FLT terminals; and from INH terminals to chassis ground		
INH terminals:	I _{ol} 1.25 mA max. V _{ol} 0.5 V max.		
FLT terminals	V _{il} 0.8 V max. V _{ih} 2 V min. tw 100 µs min. td 4 ms typical		
Saveable Data (nonvolatile)			
Instrument States:	16 (0 to 15)		

Parameter	CI 3000iL	CI 4500iL	CI 4801iL
User-defined waveforms:	12 (with 1024 data points in each)		
List Data:	1 to 100 points (for each list function)		
IEEE-488 Interface Capabilities			
Language:	SCPI (Standard Commands for Programmable Instruments); Elgar 9012 PIP		
Interface:	AH1, C0, DC1, DT1, E1, LE4, PP0, RL1, SH1, SR1, TE6		
RS-232C Interface Capabilities			
Baud rates:	300, 600, 1200, 2400, 4800, 9600		
Data formats:	7 bits even or odd parity; 8 bits without parity		
Language:	SCPI (Standard Commands for Programmable Instruments)		
Regulatory Compliance			
Listing Pending:	UL 1244		
Certified to:	CSA 22.2 No. 231		
Conforms to:	IEC 1010		
RFI Suppression			
Complies with:	CISPR 11, Group 1, Class A		
Dimensions			
Height:	262.6 mm (10.3 in.) add 12.7 mm (0.5 in.) for feet		
Width:	425.5 mm (16.75 in.)		
Depth:	602 mm (23.7 in.)		
Net weight:	87.7 kg (193 lbs.)		
Shipping weight:	104 kg (230 lbs.)		

Table 37 : iL Series typical specifications