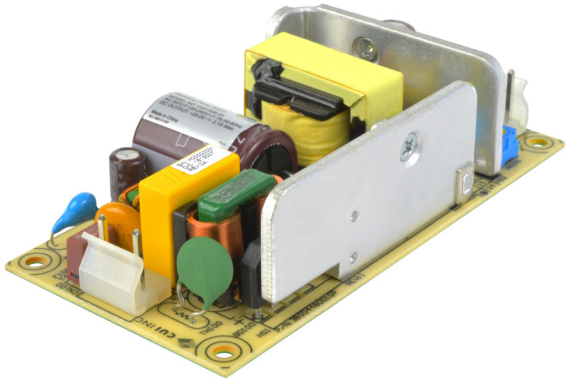
CUI INC
a bel group

SERIES: VOF-50B | DESCRIPTION: AC-DC POWER SUPPLY

FEATURES

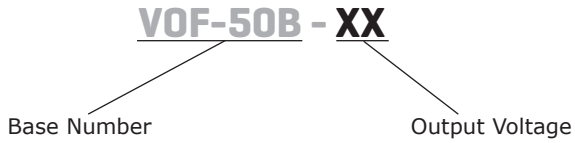
- safety Class II design
- industry standard 2" x 4" footprint
- no-load power consumption < 0.3 W
- EN 55032 Class B radiated emissions
- 5k meters high altitude operation



MODEL	output voltage (Vdc)	output current max (A)	output power max (W)	ripple and noise[1] max (mVp-p)	efficiency[2] typ (%)
VOF-50B-12	12	4.2	50.4	120	87
VOF-50B-15	15	3.4	51.0	150	88
VOF-50B-24	24	2.1	50.4	240	89

Notes: 1. Measured at output within 20 MHz BW, at rated line voltage and output load, with a 10 µF tantalum and a 0.1 µF ceramic capacitor across the output.
2. At 230 Vac.

PART NUMBER KEY



INPUT

parameter	conditions/description	min	typ	max	units
voltage		90		264	Vac
frequency		47		63	Hz
current	at 115 Vac at 230 Vac		1.7 0.8		A A
inrush current	at 230 Vac, cold start, 25 °C		90		A
leakage current	at 264 Vac, 63 Hz			0.25	mA
no load power consumption	at 110 Vac at 230 Vac			0.19 0.3	W W

OUTPUT

parameter	conditions/description	min	typ	max	units
initial set point accuracy			±3		%
line regulation	at full load			±0.5	%
load regulation	at 10% to full load		±1		%
adjustability	built in trim pot		±5		%
start-up time	at 100 Vac, full load			1	s
rise time	at 100 Vac, full load		50		ms
hold-up time	at 115 Vac, full load	10			ms
switching frequency	at full load	62		87	kHz
temperature coefficient				±0.04	%/°C

PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	latch off	110		130	%
over current protection	auto recovery				
short circuit protection	auto recovery				
over temperature protection	auto recovery				

SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output		3,000		Vac
safety approvals	UL 62368-1, EN 62368-1, IEC 62368-1				
safety class	Class II				
conducted emissions	EN 55032 Class B, FCC Class B				
radiated emissions	EN 55032 Class B, FCC Class B				
input current harmonics	EN 61000-3-2 Class A				
voltage fluctuation and flicker	EN 61000-3-3				
ESD immunity	EN 61000-4-2, air: ±8 kV; contact: ±4 kV contact				
radiated field immunity	EN 61000-4-3, 3 V/m				
electrical fast transient immunity	EN 61000-4-4, ±2 kV				

Notes: 3. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

SAFETY & COMPLIANCE (CONTINUED)

parameter	conditions/description	min	typ	max	units
surge immunity	EN 61000-4-5, ±2 kV diff, ±4 kV com				
conducted immunity	EN 61000-4-6, 3 Vrms				
magnetic field immunity	EN 61000-4-8, 50 Hz, 1 A/m (rms), Class A				
voltage dips, interruptions	EN 61000-4-11: voltage dips 30% reduction for 500 ms, Class A voltage dips >95% reduction for 10 ms, Class A voltage dips >95% reduction for 5000 ms, Class B				
MTBF	as per MIL-HDBK-217F, 25°C, full load	350,000			hours
RoHS	yes				

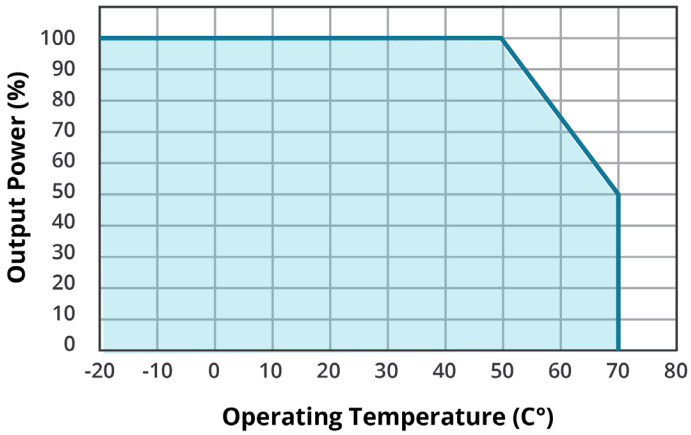
Notes: 4. The power supply is considered a component which will be installed into final equipment. The final equipment still must be tested to meet the necessary EMC directives.

ENVIRONMENTAL

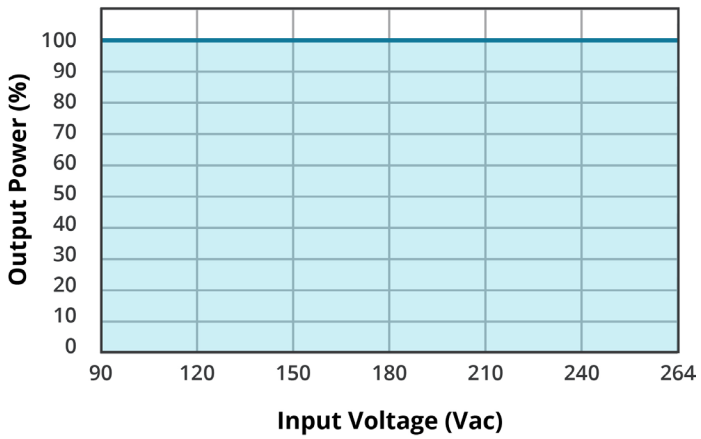
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-20		70	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	5		95	%
altitude				5,000	m

DERATING CURVES

TEMPERATURE DERATING CURVE

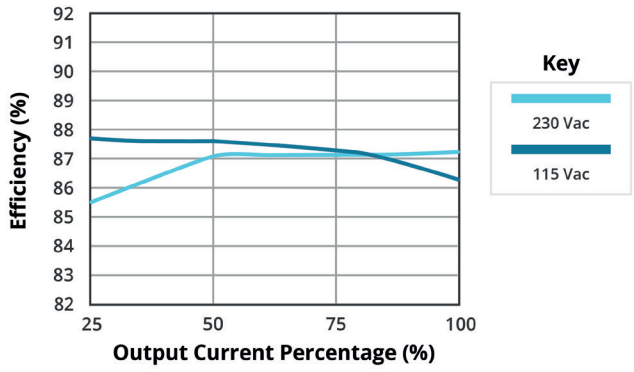


INPUT VOLTAGE DERATING CURVE (at 25°C)

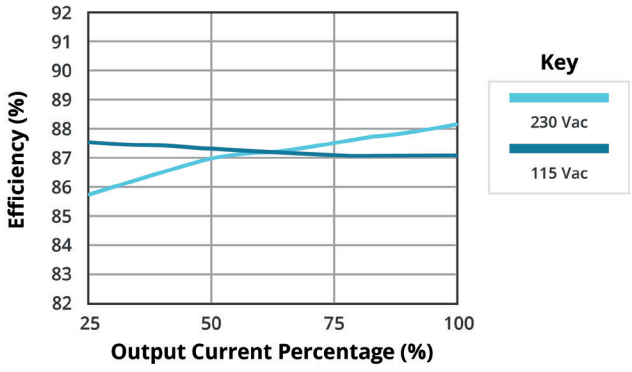


EFFICIENCY CURVES

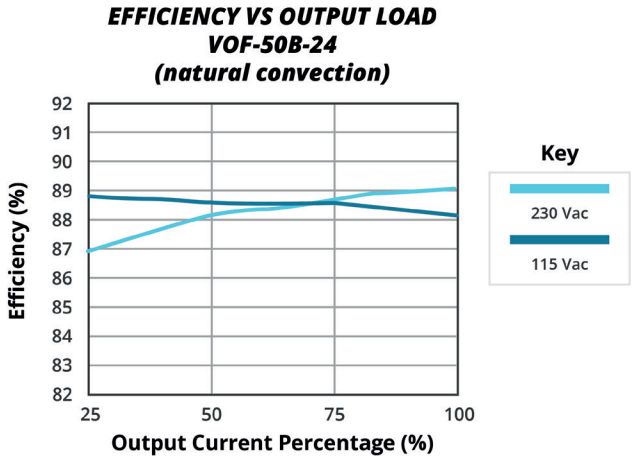
EFFICIENCY VS OUTPUT LOAD VOF-50B-12 (natural convection)



EFFICIENCY VS OUTPUT LOAD VOF-50B-15 (natural convection)



EFFICIENCY CURVES (CONTINUED)



MECHANICAL

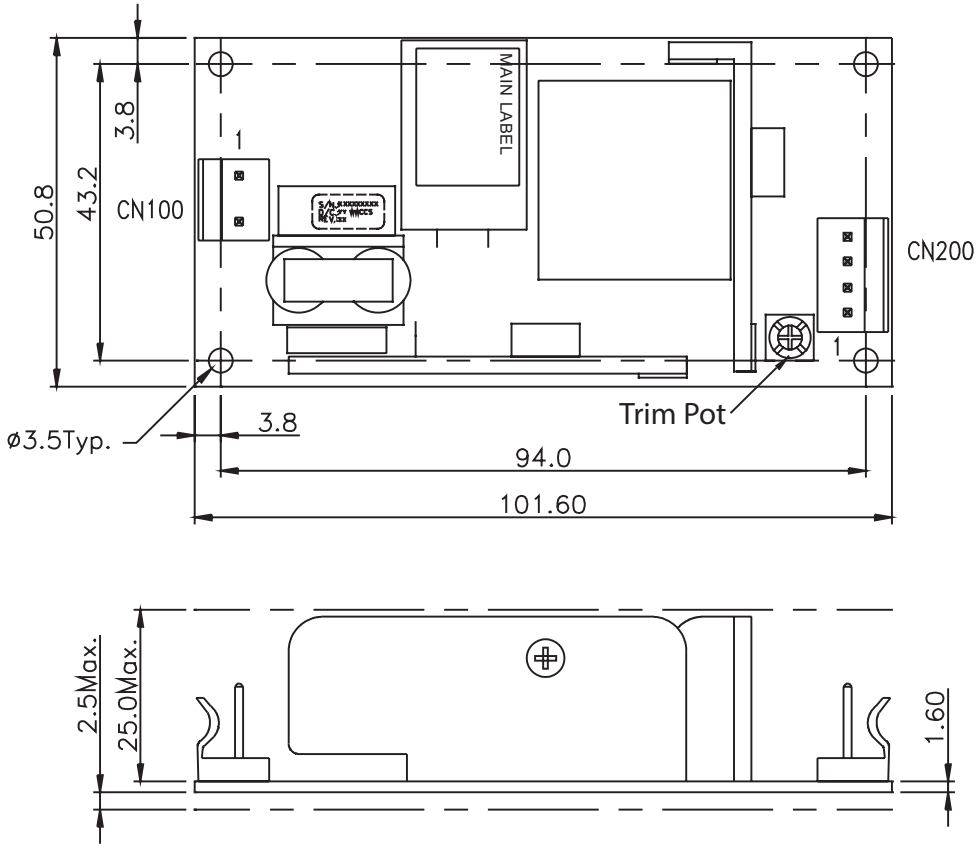
parameter	conditions/description	min	typ	max	units
dimensions	101.6 x 50.8 x 26.6 (4.0 x 2.0 x 1.17 inch)				mm
weight			112		g
cooling	natural convection				
CN100 input connector	CN100 mates with Jowle A3961H02-3P, crimp pin A3961T2P-2C, or Molex 09-50-3031, crimp pin 2478 series				
CN200 output connector	CN200 mates with Jowle A3961H02-4P, crimp pin A3961T2P-2C, or Molex 09-50-3041, crimp pin 2478 series				

MECHANICAL DRAWING

units: mm
tolerance:
X≤30: ±0.25 mm
30<X≤100: ±0.35 mm
100<X≤300: ±0.50 mm
holes: ±0.20 mm

CN100 Connector	
PIN	Function
1	AC(L)
2	NP
3	AC(N)

CN200 Connector	
PIN	Function
1	+V
2	+V
3	RTN
4	RTN



REVISION HISTORY

rev.	description	date
1.0	initial release	10/16/2018
1.01	company logo updated	11/30/2020
1.02	over temperature protection updated	04/06/2021
1.03	derating and efficiency curves updated	05/13/2021

The revision history provided is for informational purposes only and is believed to be accurate.

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CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.