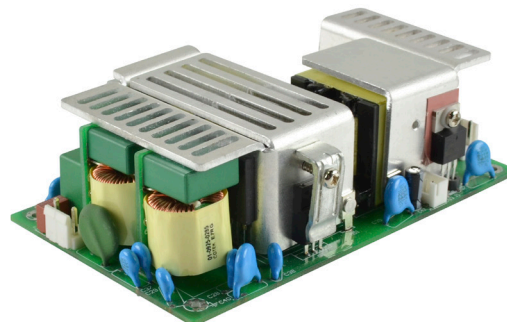



**SERIES:** VOF-185 | **DESCRIPTION:** AC-DC POWER SUPPLY

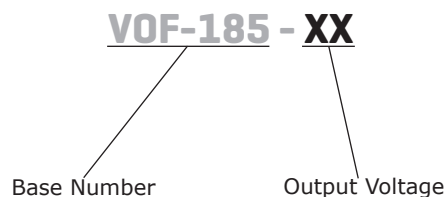
**FEATURES**

- up to 185 W continuous power
- universal input voltage range
- industry standard 3" x 5" footprint
- power factor correction
- low no load power consumption
- over voltage, over current, and short circuit protections
- output trim
- UL/cUL and TUV safety approvals
- efficiency up to 85%



MODEL	output voltage	output current	output power <sup>1</sup>	ripple and noise <sup>2</sup>	efficiency <sup>3</sup>
	(Vdc)	max (A)	max (W)	max (mVp-p)	typ (%)
VOF-185-12	12	15.42	185	120	85
VOF-185-15	15	12.33	185	150	85
VOF-185-24	24	7.71	185	240	85
VOF-185-36	36	5.14	185	360	85
VOF-185-48	48	3.85	185	480	85

- Notes:
1. Maximum output power of 185 W with forced air cooling (8.48 CFM), 111 W with convection cooling.
  2. At full load, nominal input, 20 MHz bandwidth oscilloscope, using a 12" twisted pair wire terminated together with a 0.1  $\mu$ F and 47  $\mu$ F capacitor.
  3. At full load, 230 Vac input, without external fan.
  4. All specifications are measured at  $T_a=25^\circ\text{C}$ , 230 Vac input voltage, and rated output load unless otherwise specified.

**PART NUMBER KEY**


## INPUT

parameter	conditions/description	min	typ	max	units
voltage		90		277	Vac
frequency		47		63	Hz
current	at 115 Vac, full load at 230 Vac, full load		2.3 1.2		A A
inrush current	at 230 Vac, cold start			80	A
leakage current	at 264 Vac			3.5	mA
power factor correction	at 230 Vac, full load	0.9			
no load power consumption	at 230 Vac			0.5	W
input fuse	6.3 A / 250 V time delay fuse (included)				

## OUTPUT

parameter	conditions/description	min	typ	max	units
initial set point accuracy			±3		%
line regulation			±0.5		%
load regulation	from 100%~10% load		±2		%
transient response	1 kHz, 100%~10% load				
	VOF-185-12		1,200		mVp-p
	VOF-185-15		1,500		mVp-p
	VOF-185-24		2,400		mVp-p
	VOF-185-36		3,600		mVp-p
	VOF-185-48		4,800		mVp-p
start-up delay time	at 115 Vac		3		s
	at 230 Vac		2.5		s
start-up rise time	at 115 Vac, full load		50		ms
hold-up time	at 115 Vac, full load	10			ms
adjustability	built in trim pot		±5		%
switching frequency		30		300	kHz
temperature coefficient	at 0~50°C		±0.03		%/°C
fan output	12 Vdc / 100 mA				

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	clamped by TVS				
over current protection	hiccup, auto recovery	105			%
short circuit protection	hiccup, auto recovery	105			%

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output		3,000		Vac
	input to ground		1,500		Vac
	output to ground		500		Vac
safety approvals	UL 60950-1, EN 60950-1, IEC 60950-1				
EMI/EMC <sup>1</sup>	EN 55022: 2010 Class B, EN 61204-3:2000, EN 61000-6-3: 2007 +A1: 2011, EN 61000-3-2: 2006 +A2: 2009, EN 61000-3-3: 2008, EN 55024: 2010, EN 61000-6-1: 2007, ENV 50204: 1995, CE, FCC				

Notes: 1. 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)

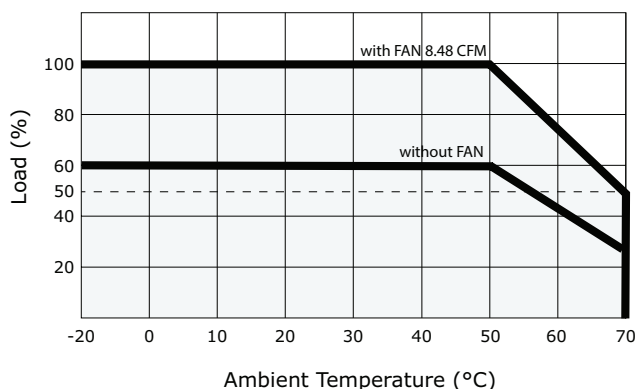
parameter	conditions/description	min	typ	max	units
class	class I				
MTBF	as per MIL-HDBK-217F	250,000			hours
RoHS	2011/65/EU				

## ENVIRONMENTAL

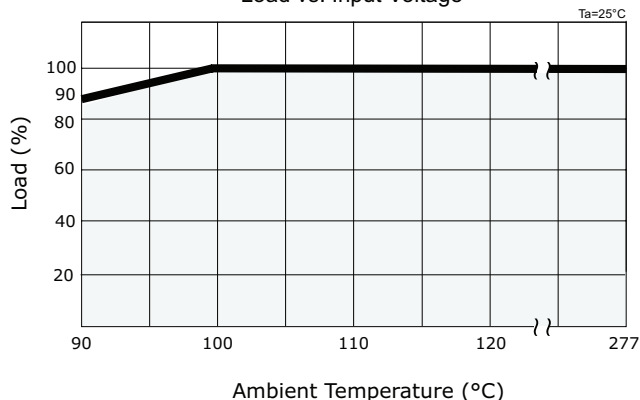
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curves	-20		70	°C
storage temperature		-40		85	°C
operating humidity	non-condensing	20		90	%
storage humidity	non-condensing	20		90	%
operating altitude			5000		m
vibration & shock	10~3000Hz, 10 minutes per cycle, for 1 hour along each of the X, Y, and Z axes		2		G

## DERATING CURVES

Temperature Derating Curve  
Load vs. Temperature

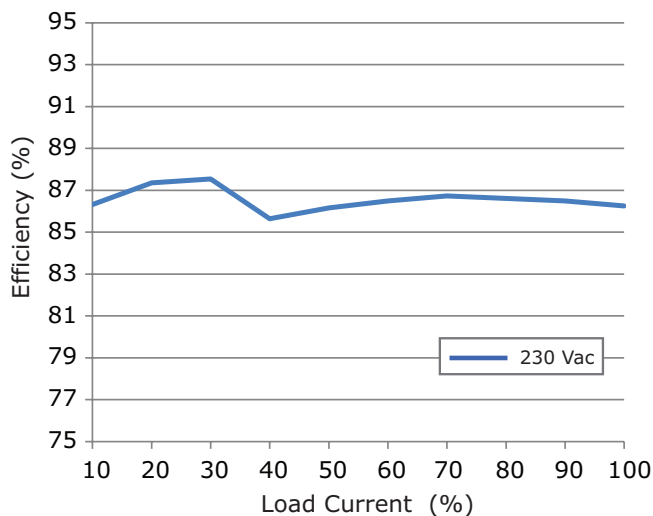


Temperature Derating Curve  
Load vs. Input Voltage

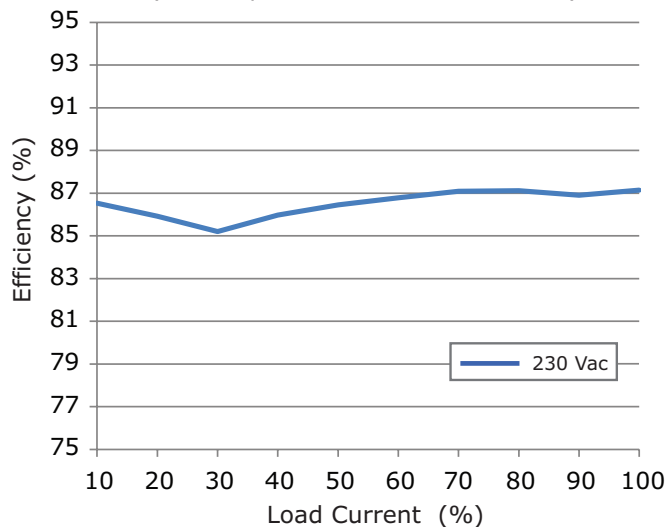


## EFFICIENCY CURVES

VOF-185-12 Efficiency Curve  
(Efficiency vs. Load Current at 230 Vac)

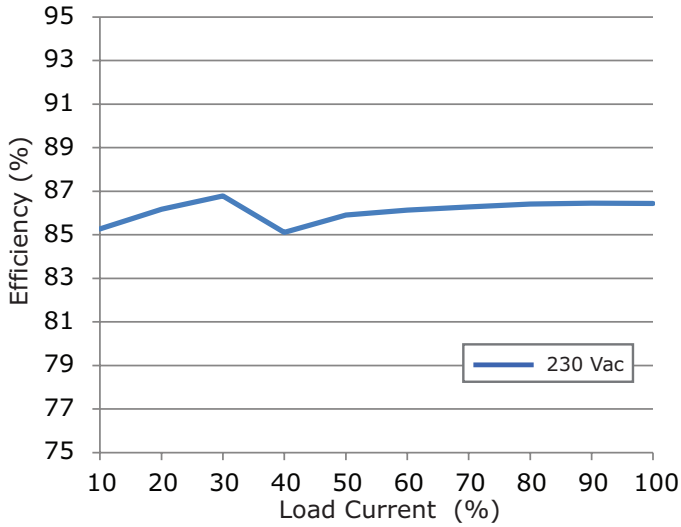


VOF-185-15 Efficiency Curve  
(Efficiency vs. Load Current at 230 Vac)

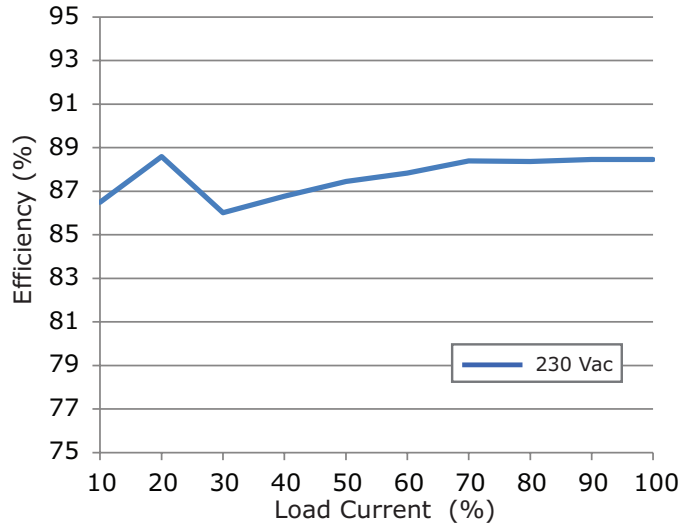


## EFFICIENCY CURVES (CONTINUED)

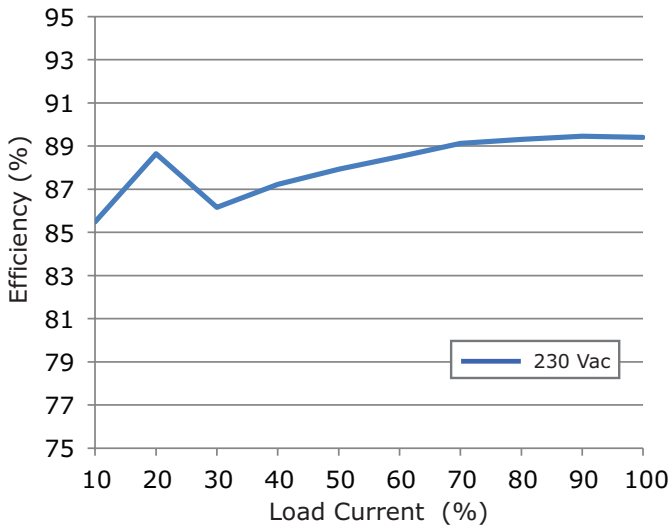
VOF-185-24 Efficiency Curve  
(Efficiency vs. Load Current at 230 Vac)



VOF-185-36 Efficiency Curve  
(Efficiency vs. Load Current at 230 Vac)



VOF-185-48 Efficiency Curve  
(Efficiency vs. Load Current at 230 Vac)



## MECHANICAL

parameter	conditions/description	min	typ	max	units
dimensions	127 x 76.2 x 39.6				mm
weight			0.36		kg
cooling	external fan				
AC input	CN1 mates with Molex 09-50-7031 housing with Molex 2478 series crimp contact or equivalent				
DC output	CN2 mates with Molex 09-50-7101 housing with Molex 2478 series crimp contact or equivalent				
Auxiliary (Fan) output	Fan mates with JST XHP-2 housing with JST SXH-001T-P0.6 contact or equivalent				

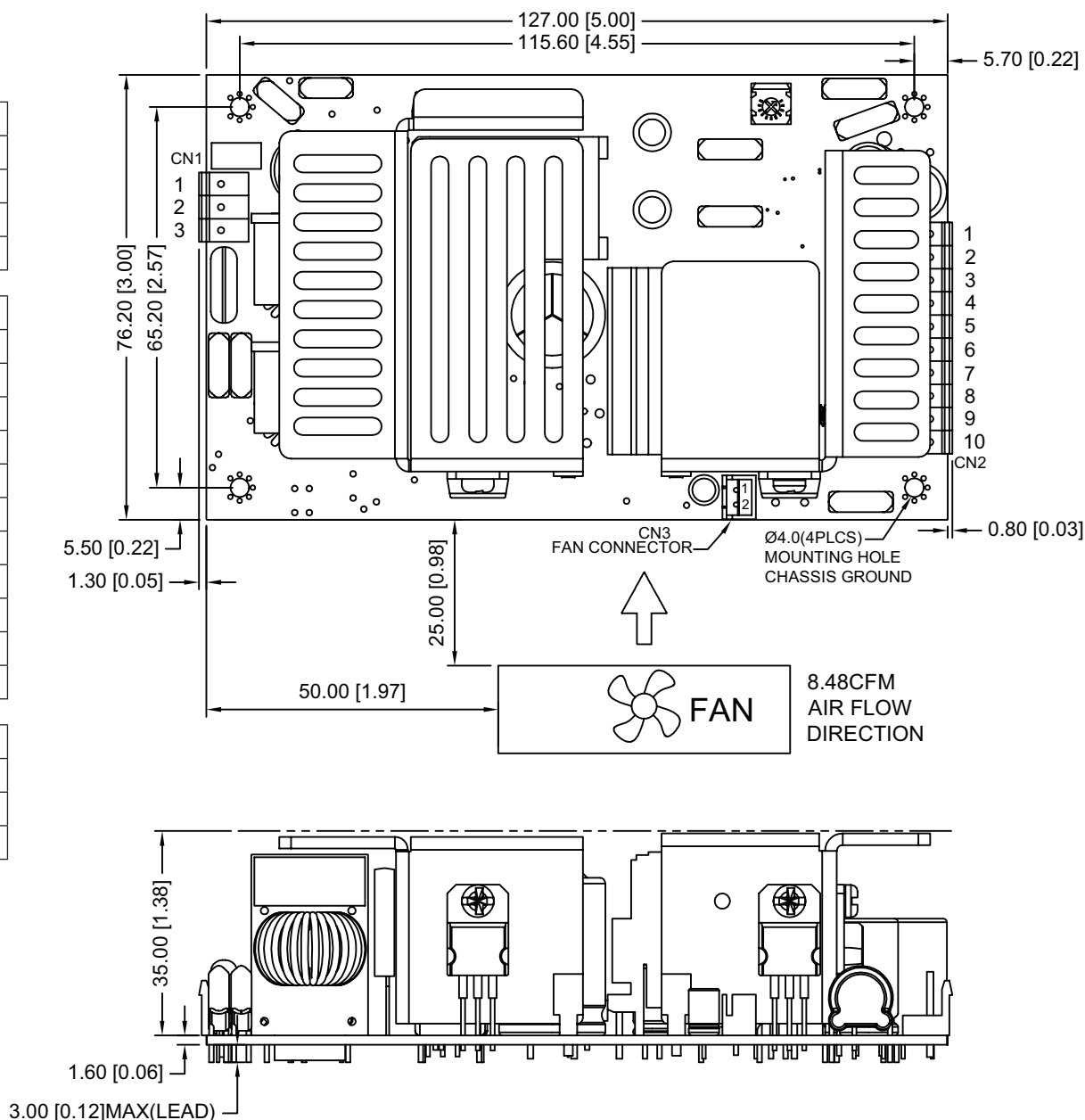
## MECHANICAL DRAWING

units: mm [inch]  
tolerance: ±0.3 mm

CN1	
PIN	Function
1	L
2	NP
3	N

CN2	
PIN	Function
1	+Vo
2	+Vo
3	+Vo
4	+Vo
5	+Vo
6	-Vo
7	-Vo
8	-Vo
9	-Vo
10	-Vo

CN3 (FAN)	
PIN	Function
1	+FAN
2	-FAN



## REVISION HISTORY

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rev.	description	date
1.0	initial release	06/27/2016
1.01	added efficiency curves	09/27/2016

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

**CUI INC<sup>®</sup>**

**Headquarters**  
20050 SW 112th Ave.  
Tualatin, OR 97062  
**800.275.4899**

Fax 503.612.2383  
**cui.com**  
techsupport@cui.com

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