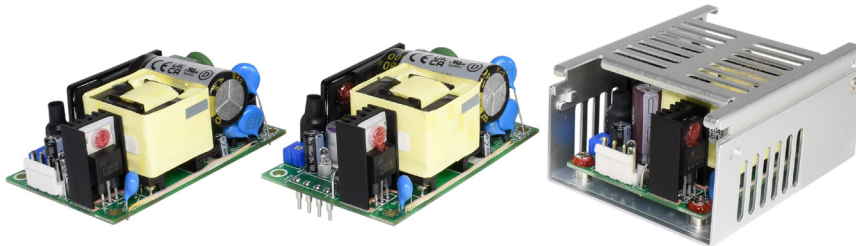


**SERIES:** VOF-80B | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY

**FEATURES**

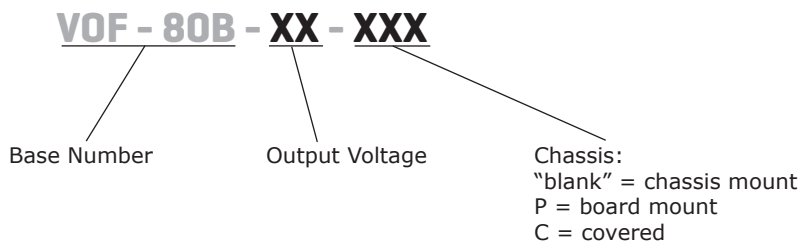
- universal input range 90~264 Vac
- high efficiency up to 91%
- 2"x3" open frame compact size
- Class I and Class II
- operating altitude 5,000 m
- continuous short circuit protection
- certified to EN/BS EN/UL 62368-1
- designed to meet IEC/EN 60335-1, EN 55032



MODEL	output voltage		output current	output power	ripple and noise <sup>1</sup>	efficiency <sup>2</sup>
	nom (Vdc)	range (Vdc)	max (A)	max (W)	max (mVp-p)	typ (%)
VOF-80B-12	12	11.4~12.6	6.7	80	120	89
VOF-80B-15	15	14.25~15.75	5.36	80	150	89
VOF-80B-24	24	22.8~25.2	3.35	80	240	90
VOF-80B-48	48	45.6~50.4	1.67	80	480	91

Notes: 1. At full load, nominal input, 20 MHz bandwidth oscilloscope, with 10 µF electrolytic and 0.1 µF ceramic capacitors on the output.  
2. At 230 Vac input and 100% full load at 25°C.

**PART NUMBER KEY**



## INPUT

parameter	conditions/description	min	typ	max	units
voltage <sup>3</sup>	ac input	90		264	Vac
	dc input	120		370	Vdc
frequency		50		60	Hz
current	at 100 Vac, full load			1.7	A
inrush current	at 240 Vac, cold start at 25°C			100	A
leakage current				0.25	mA
no load power consumption	48 Vdc output		0.35		W
	all other output models		0.3		W

Note: 3. Safety approvals only apply to the ac input.

## OUTPUT

parameter	conditions/description	min	typ	max	units
capacitive load	12 Vdc			13,400	μF
	15 Vdc			11,000	μF
	24 Vdc			6,700	μF
	48 Vdc			3,340	μF
output voltage set point	90 Vac ~ 264 Vac, full load, 25°C	11.88	12	12.12	Vdc
		14.85	15	15.15	Vdc
		23.76	24	24.24	Vdc
		47.52	48	48.48	Vdc
line regulation	90 Vac ~ 264 Vac, full load			±0.5	%
load regulation	10~100% load			±1	%
hold-up time	115 Vac		12		ms
switching frequency	output power = max. rated power		65		kHz

## PROTECTIONS

parameter	conditions/description	min	typ	max	units
over voltage protection	built-in TVS component to clamp output voltage				
	12 Vdc			16.2	Vdc
	15 Vdc			18.9	Vdc
	24 Vdc			31.5	Vdc
	48 Vdc			58.8	Vdc
short circuit protection	continuous, auto recovery				

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
isolation voltage	input to output for 1 minute			3,000	Vac
safety approvals	certified to 62368-1: EN, BS EN, UL designed to meet 60335-1: IEC, EN designed to meet 55032: EN				
safety class	Class I or Class II				
conducted emissions	EN55032, EN61204-3:2000, EN61000-6-3:2012, EN61000-6-4:2011, Class B, 47 CFR FCC Part 15 Subpart B				
radiated emissions	EN55032, EN61204-3:2000, EN61000-6-3:2012, EN61000-6-4:2011, Class B, 47 CFR FCC Part 15 Subpart B				
ESD	IEC 61000-4-2:2008, air discharge: ±8kV, contact discharge: ±4kV, perf. Criteria A				
radiated immunity	IEC 61000-4-3:2010, perf. Criteria A				
EFT/burst	IEC61000-4-4:2012, ±1kV, ±2kV, perf. Criteria A				
surge	IEC61000-4-5:2014, L-N: ±0.5kV, ±1kV, L-E (Ground): ±0.5kV, ±1kV, ±2kV, perf. Criteria A				

## SAFETY & COMPLIANCE

parameter	conditions/description	min	typ	max	units
conducted immunity	IEC 61000-4-6:2013, perf. Criteria A				
voltage dips and interruption	IEC 61000-4-11:2004, Dip: 30% reduction, dip >95% reduction, perf. Criteria A IEC 61000-4-11:2004, >95% reduction, perf. Criteria B				
power frequency magnetic field	IEC 61000-4-8:2009, perf. Criteria A				
vibration	meet MIL-STD-810F table 514.5CVIII,15~2000Hz, X,Y,Z axis, 1 hour (each axis). total 3 hrs		4		g
shock	meet MIL-STD-810F table 516.5, table 516.5-I 10ms, each axis 3 times ( $\pm X, \pm Y, \pm Z$ axis)		75		g
MTBF	MIL-HDBK-217F at 25°C	300,000			hours
RoHS	yes				

## ENVIRONMENTAL

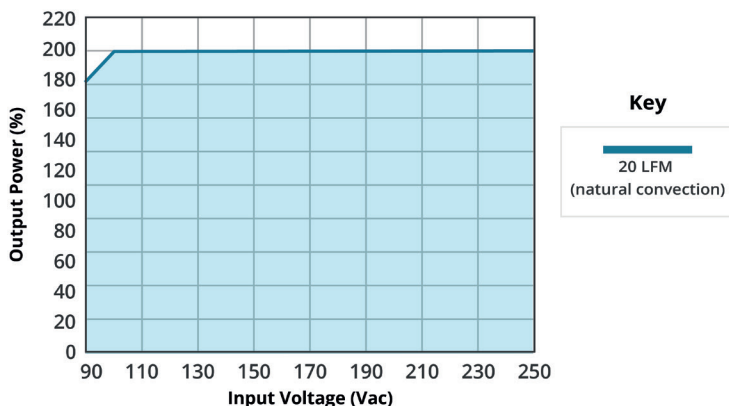
parameter	conditions/description	min	typ	max	units
operating temperature	see derating curve	-30		80	°C
storage temperature		-30		85	°C
storage humidity	non-condensing			93	%
altitude				5,000	m

## MECHANICAL

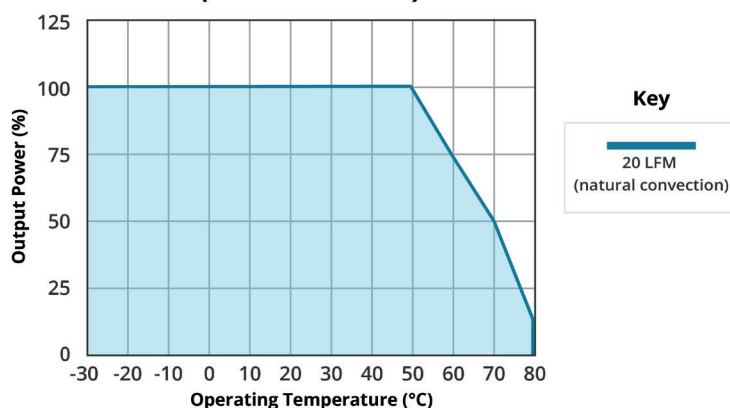
parameter	conditions/description	min	typ	max	units
dimensions	chassis mount: 76.20 x 50.80 x 34.00 [3.000 x 2.000 x 1.339 inch] board mount: 76.20 x 50.80 x 35.90 [3.000 x 2.000 x 1.413 inch] covered: 81.28 x 62.00 x 40.00 [3.200 x 2.441 x 1.575 inch]				mm mm mm
weight	chassis mount board mount covered		135 133 174		g g g

## DERATING CURVE

**PEAK LOAD  $V_{in}$  DE-RATING**

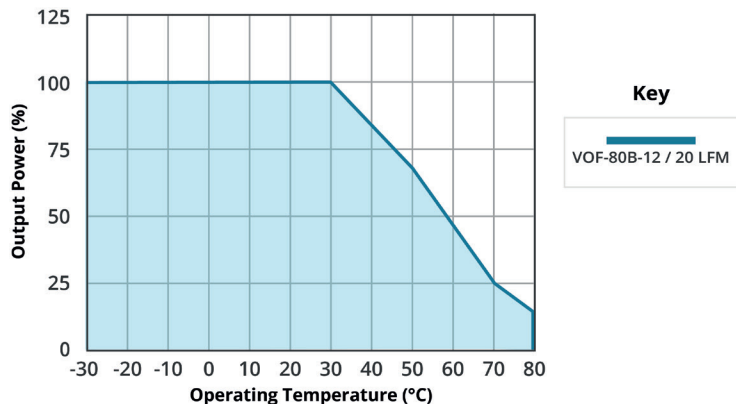


**POWER DERATING CURVE (natural convection)**

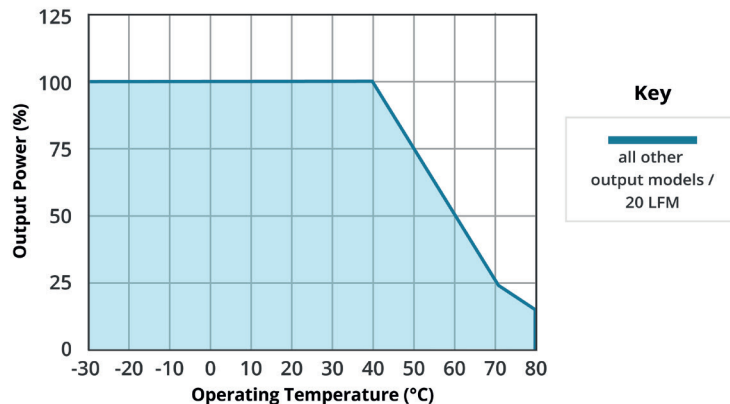


## DERATING CURVE (CONTINUED)

**POWER DERATING CURVE**  
(natural convection)

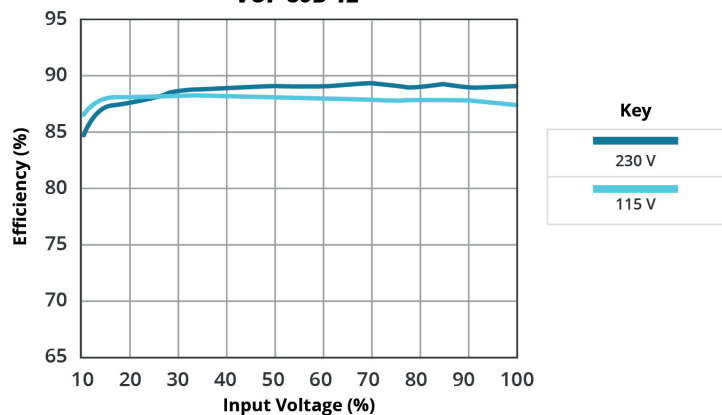


**POWER DERATING CURVE**  
(natural convection)

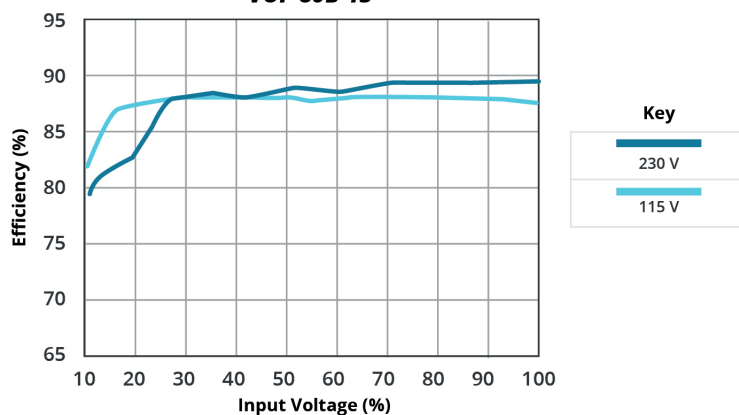


## EFFICIENCY CURVES

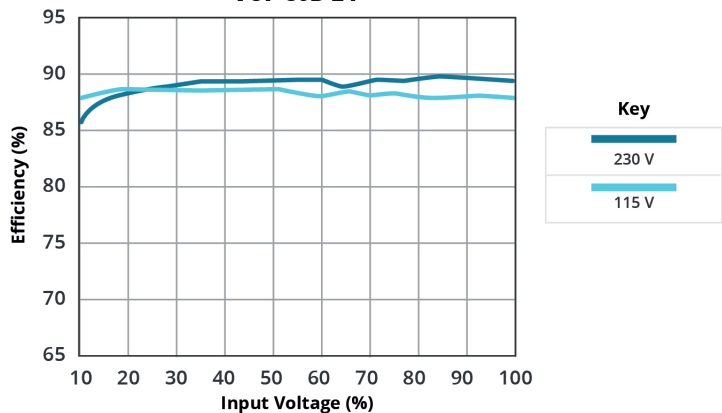
**EFFICIENCY VS INPUT LOAD**  
**VOF-80B-12**



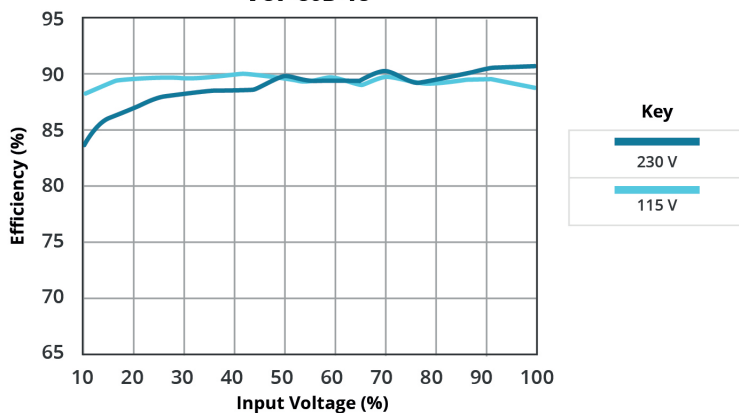
**EFFICIENCY VS INPUT LOAD**  
**VOF-80B-15**



**EFFICIENCY VS INPUT LOAD**  
**VOF-80B-24**



**EFFICIENCY VS INPUT LOAD**  
**VOF-80B-48**



## MECHANICAL DRAWING

### Chassis mount

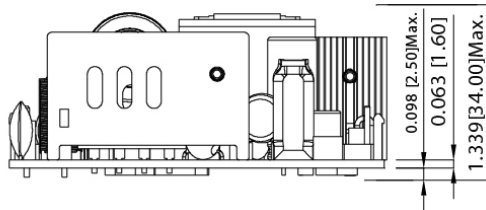
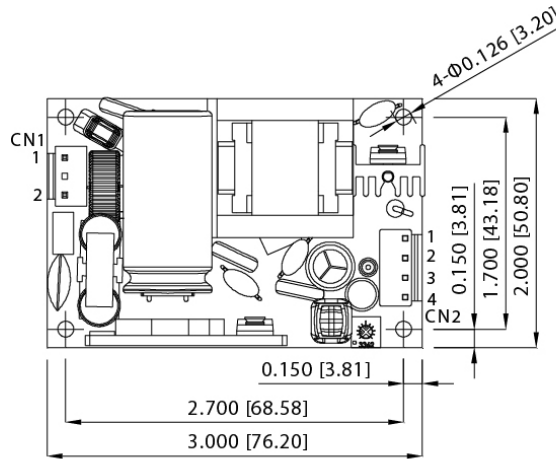
units: inches [mm]

tolerance inches: x.xxx = +0.039/-0

mm: x.xx = +1.0/-0

PIN CONNECTIONS	
PIN	Function
1	AC(N)
2	AC(L)

PIN CONNECTIONS	
PIN	Function
1	-Vout
2	-Vout
3	+Vout
4	+Vout



### Board mount:

units: mm [inch]

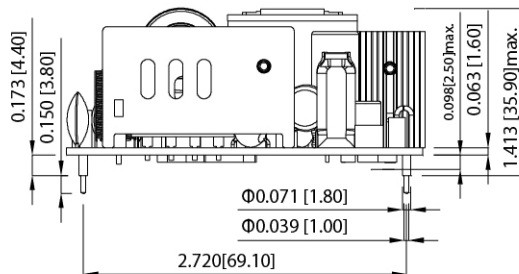
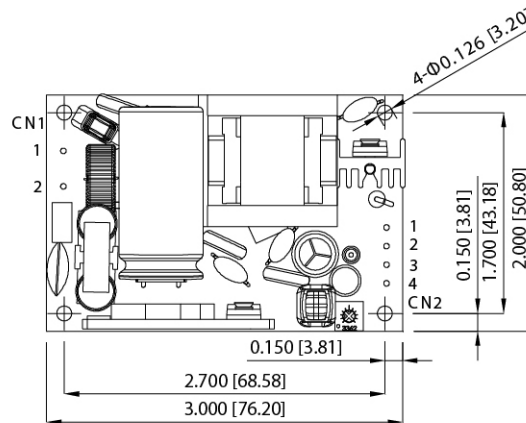
units: inches [mm]

tolerance inches: x.xxx = +0.039/-0

mm: x.xx = +1.0/-0

PIN CONNECTIONS	
PIN	Function
1	AC(N)
2	AC(L)

PIN CONNECTIONS	
PIN	Function
1	-Vout
2	-Vout
3	+Vout
4	+Vout

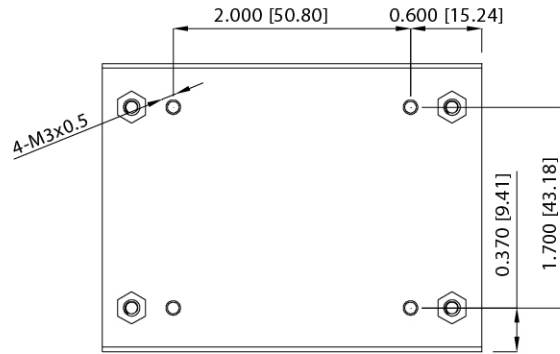
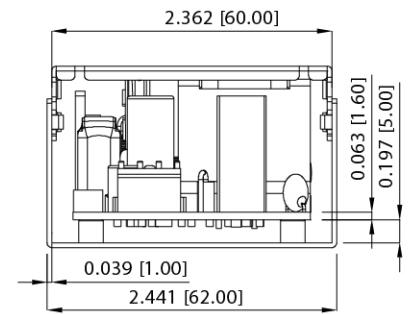
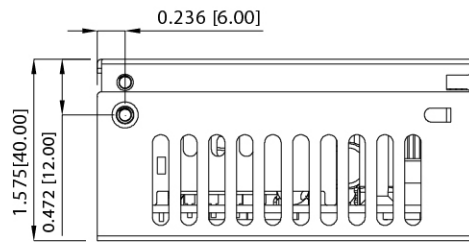
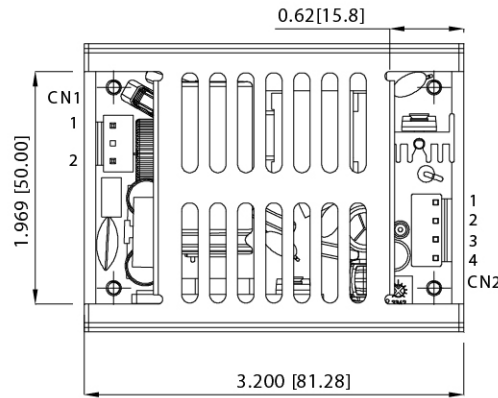


**Covered:**

units: mm [inch]  
 units: inches [mm]  
 tolerance inches: x.xxx = +0.039/-0  
 mm: x.xx = +1.0/-0

PIN CONNECTIONS	
PIN	Function
1	AC(N)
2	AC(L)

PIN CONNECTIONS	
PIN	Function
1	-Vout
2	-Vout
3	+Vout
4	+Vout



## REVISION HISTORY

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rev.	description	date
1.0	initial release	10/19/2023

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



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