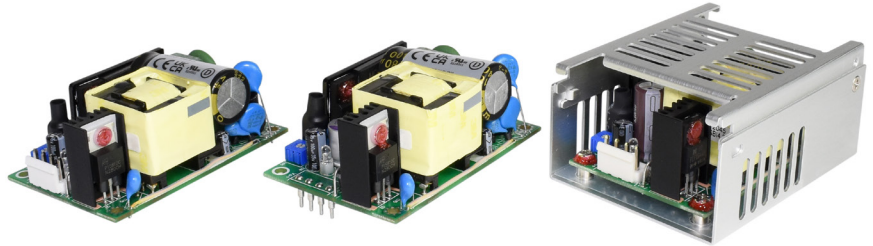


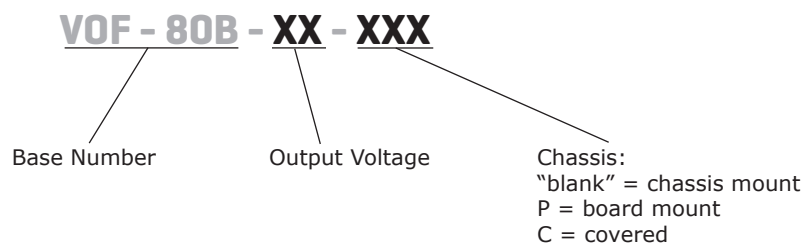
**SERIES:** VOF-80B | **DESCRIPTION:** INTERNAL AC-DC POWER SUPPLY
**FEATURES**

- 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  $\mu$ F electrolytic and 0.1  $\mu$ F 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<br>designed to meet 60335-1: IEC, EN<br>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<br>FCC Part 15 Subpart B  |     |     |       |       |
| radiated emissions  | EN55032, EN61204-3:2000, EN61000-6-3:2012, EN61000-6-4:2011, Class B, 47 CFR<br>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<br>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,<br>1 hour (each axis). total 3 hrs                                          |         | 4   |     | g     |
| shock                          | meet MIL-STD-810F table 516.5, table<br>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                                                                                                                                    |         |     |     |       |

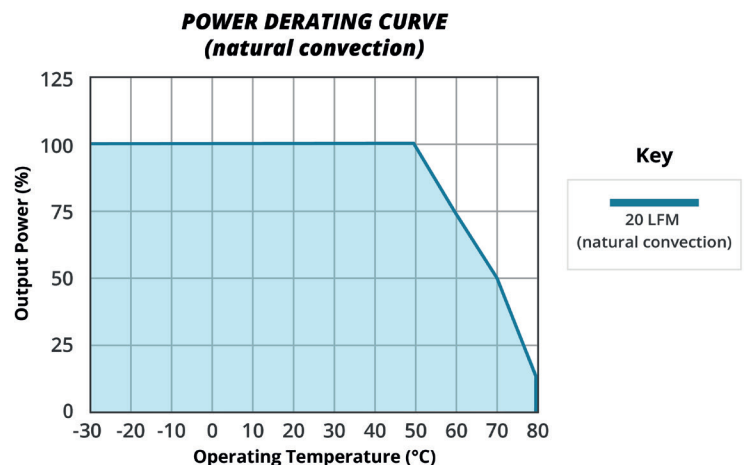
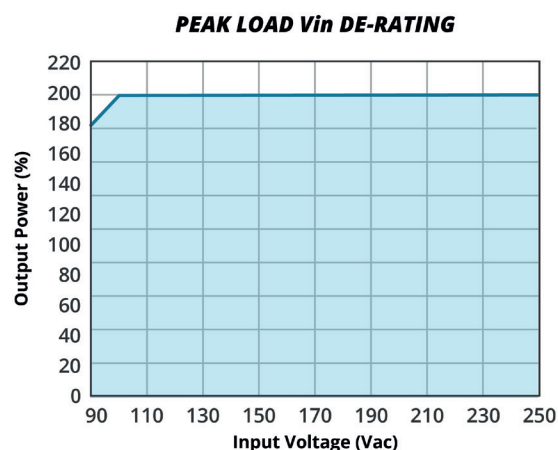
## ENVIRONMENTAL

| 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

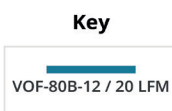
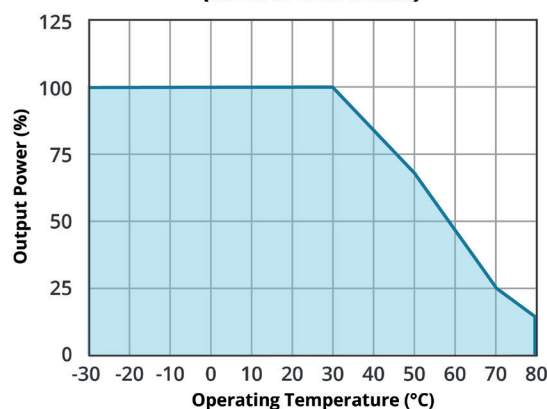
| parameter  | conditions/description                                            | min | typ | max | units |
|------------|-------------------------------------------------------------------|-----|-----|-----|-------|
| dimensions | chassis mount: 76.20 x 50.80 x 34.00 [3.000 x 2.000 x 1.339 inch] |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

## DERATING CURVE

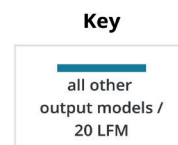
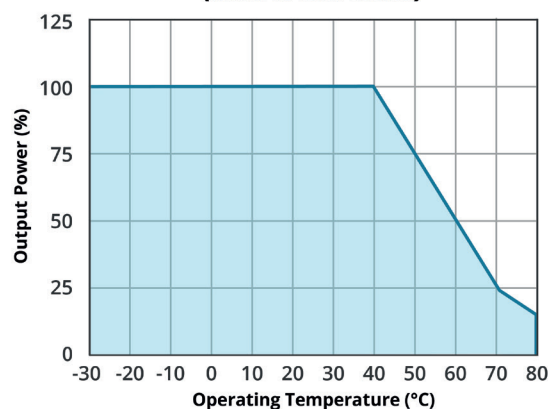


## DERATING CURVE (CONTINUED)

**POWER DERATING CURVE**  
(natural convection)

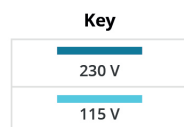
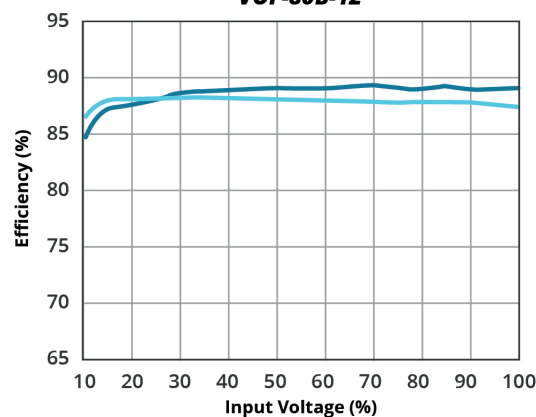


**POWER DERATING CURVE**  
(natural convection)

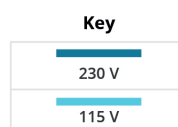
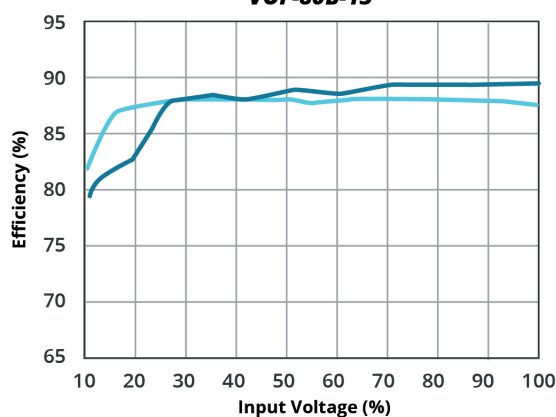


## EFFICIENCY CURVES

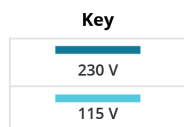
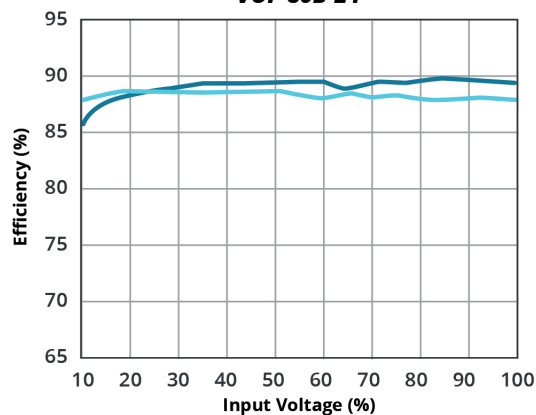
**EFFICIENCY VS INPUT LOAD**  
VOF-80B-12



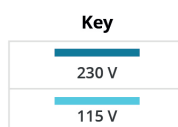
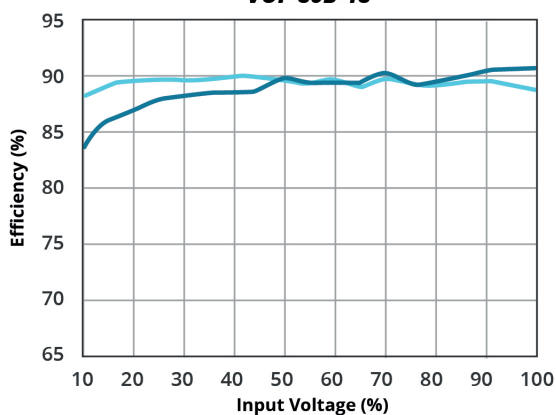
**EFFICIENCY VS INPUT LOAD**  
VOF-80B-15



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



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



## MECHANICAL DRAWING

### Chassis mount

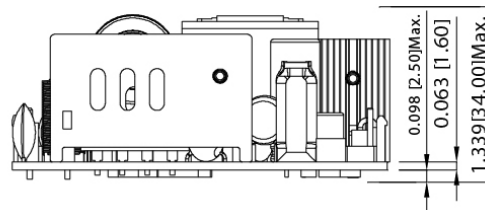
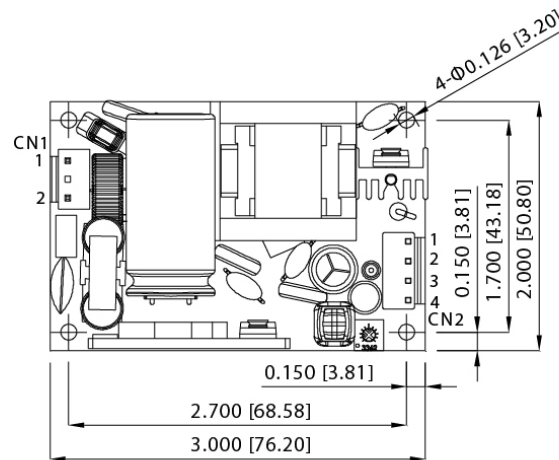
units: inches [mm]

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]

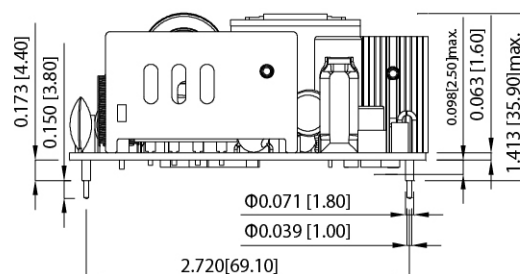
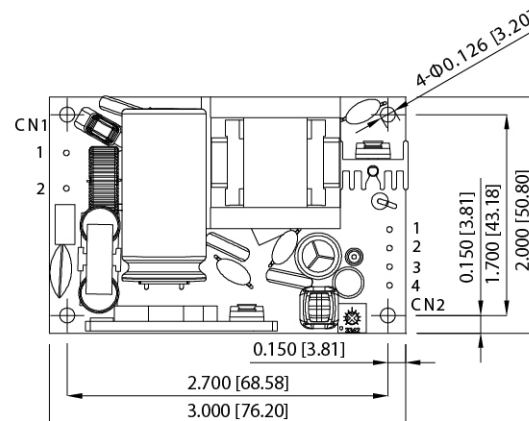
units: inches [mm]

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    |

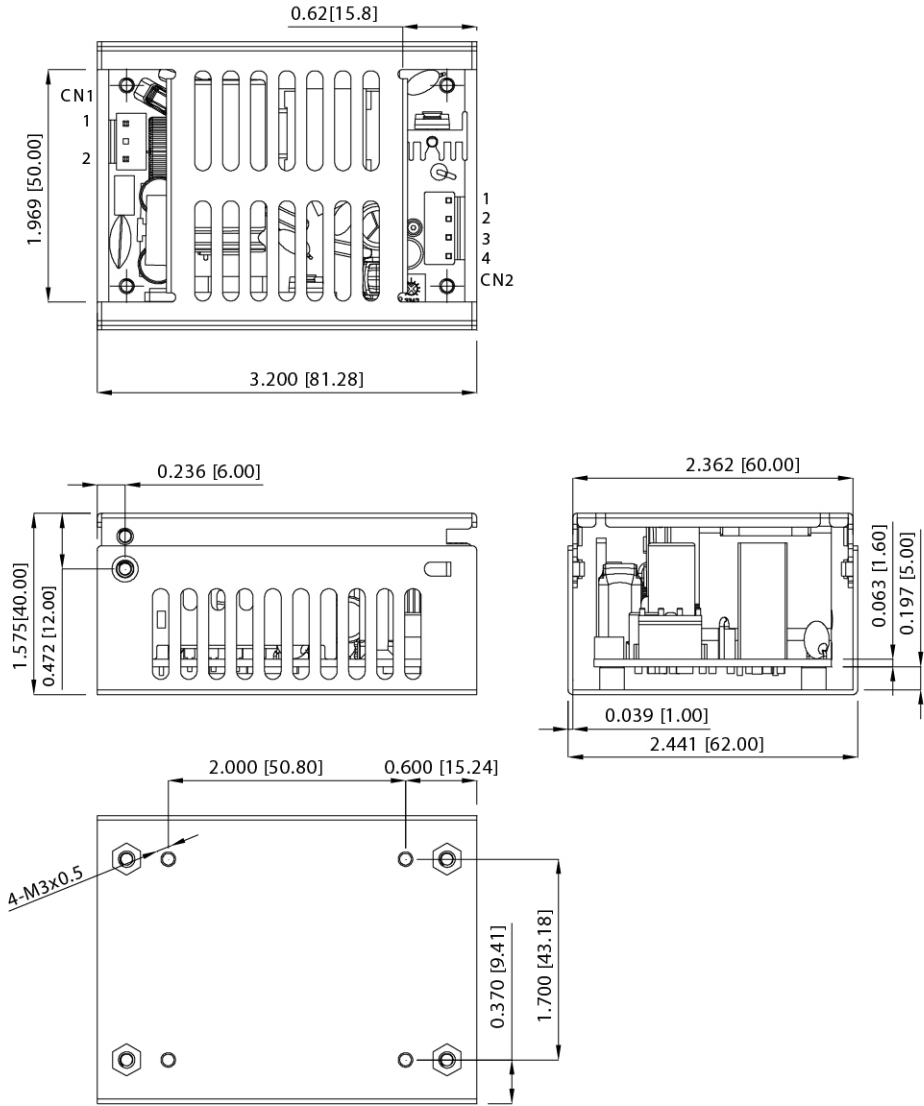


**Covered:**

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

| 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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