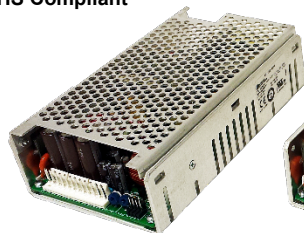


# 150 WATTS

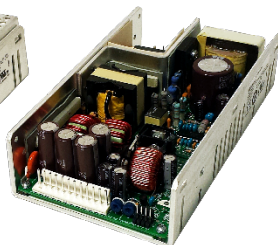
## SINGLE/MULTI OUTPUT AC-DC

### FEATURES:

- Compact 4.0" x 7.0" x 1.75" Size
- 2 Year Warranty
- Universal 85-264V Input
- 1-4 Tightly-Regulated Outputs
- High Efficiency
- 0-70°C Operating Temperature
- RoHS Compliant
- IEC 60601-1 3<sup>rd</sup> ed. Medical Cert.
- IEC 60950-1 2<sup>nd</sup> ed. ITE Certification
- IEC 60601-1-2 4<sup>th</sup> ed. EMC
- Class B Emissions per EN55011/32
- Optional Remote Inhibit/Enable
- Optional Power Fail Warning
- Optional Perforated Cover



CHASSIS/COVER



OPEN CHASSIS

### SAFETY SPECIFICATIONS

|                                                                                    |                                                           |                                                                                                                                                   |
|------------------------------------------------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
|    | Underwriters Laboratories<br>File E137708/E140259         | UL 60950-1:2007, 2 <sup>nd</sup> Edition<br>AAMI/ANSI ES60601-1:2005(R) 2012                                                                      |
|    |                                                           | CB Reports/Certificates (including all National and Group Deviations)<br>IEC 60950-1/A2:2013, 2 <sup>nd</sup> Edition<br>IEC 60601-1:2005/A1:2012 |
|    | UL Recognition<br>Mark for Canada<br>File E137708/E140259 | CAN/CSA-C22.2 No. 60950-1-07, 2 <sup>nd</sup> Edition<br>CAN/CSA-C22.2 No. 60601-1:2014                                                           |
|    | TUV                                                       | EN 60950-1/A2:2013, 2 <sup>nd</sup> Edition<br>EN 60601-1:2006/A1:2013                                                                            |
|  | Low Voltage Directive<br>RoHS Directive (Recast)          | (2014/35/EU of February 2014)<br>(2011/65/EU of June 2011)                                                                                        |

### MODEL LISTING

| MODEL NO.     | OUTPUT 1                 | OUTPUT 2      | OUTPUT 3  | OUTPUT 4 |
|---------------|--------------------------|---------------|-----------|----------|
| CE-150-4001   | +3.3V/15A                | +5V/5A        | +12V/2A   | -12V/2A  |
| CE-150-4002   | +5V/15A                  | +3.3V/5A      | +12V/2A   | -12V/2A  |
| CE-150-4003   | +5V/15A                  | +3.3V/5A      | +15V/2A   | -15V/2A  |
| CE-150-4004   | +5V/15A                  | -5.2V/5A      | +12V/2A   | -12V/2A  |
| CE-150-4005   | +5V/15A                  | -5.2V/5A      | +15V/2A   | -15V/2A  |
| CE-150-4006   | +5V/15A                  | +12V/5A       | +12V/2A   | -12V/2A  |
| CE-150-4007   | +5V/15A                  | +12V/5A       | +15V/2A   | -15V/2A  |
| CE-150-4008   | +15V/5A                  | -15V/5A       | 24V/1A    | 24V/1A   |
| CE-150-4009   | +5V/15A                  | +12V/5A       | +15V/2A   | -12V/2A  |
| CE-150-4011   | +5V/15A                  | +12V/5A       | -5V/1A    | -12V/1A  |
| CE-150-4101   | +5V/15A                  | +24V/5A       | +12V/2A   | -12V/2A  |
| CE-150-4102   | +5V/15A                  | +24V/5A       | +15V/2A   | -15V/2A  |
| CE-150-4103IT | +5V/15A                  | +24V/5A(6ApK) | +12V/2A   | -12V/2A  |
| CE-150-3001   | +5V/15A                  | +12V/5A       |           | -12V/2A  |
| CE-150-3002   | +5V/15A                  | +15V/5A       |           | -15V/2A  |
| CE-150-3003   | +15V/5A                  | -15V/5A       | +5V/2A    |          |
| CE-150-3004   | +5V/15A                  | +15V/5A       | +36V/2.5A |          |
| CE-150-2001   | +12V/7.5A                | -12V/5A       |           |          |
| CE-150-2002   | +15V/5A                  | -15V/5A       |           |          |
| CE-150-2003   | +5V/15A                  | +12V/6A       |           |          |
| CE-150-2101   | +5V/15A                  | +24V/5A       |           |          |
| CE-150-1001   | 3.3V/30A <sup>(18)</sup> |               |           |          |
| CE-150-1002   | 5V/30A <sup>(18)</sup>   |               |           |          |
| CE-150-1003   | 12V/12.5A                |               |           |          |
| CE-150-1004   | 15V/10A                  |               |           |          |
| CE-150-1005   | 24V/6.25A                |               |           |          |
| CE-150-1006   | 28V/5.4A                 |               |           |          |
| CE-150-1007   | 48V/3.1A                 |               |           |          |

### ORDERING INFORMATION

Consult factory for alternate output configurations.

Consult factory for positive, negative or floating outputs.

Please specify the following optional features when ordering:

CO – Cover  
PF – Power Fail  
TS – Terminal Strip

OVP – Overvoltage Protection  
I/O – Isolated Outputs  
RE – Remote Inhibit

# CE-150

## OUTPUT SPECIFICATIONS

|                                                           |                                                                      |                                                                                                                                                 |
|-----------------------------------------------------------|----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Total Output Power <sup>(1)</sup><br>(See Derating Chart) | 100W<br>125W<br>150W                                                 | Convection Cooled <sup>(16)</sup><br>Convection Cooled, w/1Sq. ft. Baseplate <sup>(17)</sup><br>300LFM Forced-Air Cooled <sup>(15)</sup>        |
| Output Voltage Centering                                  | Output 1:<br>Output 2:<br>Output 3:<br>Output 4:                     | ± 0.25% (All outputs at 50% load)<br>±0.25% (X0XX), ±3.0% (X1XX)<br>± 2.0%<br>± 2.0%                                                            |
| Output Voltage Adjust Range                               | Outputs 1 – 2:<br>Output 1:<br>Output 1:<br>Output 2:                | 95-105% (X0XX)<br>95-105% (X1XX)<br>85-105% (1001, 4001)<br>85-105% (4002, 4003)                                                                |
| Load Regulation                                           | Output 1:<br>Output 2:<br>(X0XX)<br>(X1XX)<br>Output 3:<br>Output 4: | 0.5% (0-100% load change)<br>0.5% (0-100% load change)<br>3.0% (10-100% load change)<br>2.0% (10-100% load change)<br>2.0% (0-100% load change) |
| Source Regulation                                         | Outputs 1 – 4:                                                       | 0.5%                                                                                                                                            |
| Cross Regulation<br>(Output 1 load varied 50-100%)        | Output 2:<br><br>Output 3:<br>Output 4:                              | 0.2% (X0XX)<br>5.0% (X1XX)<br>2.0% (Output 1 load varied 50-100%)<br>2.0%                                                                       |
| Output Noise                                              | Outputs 1 - 4:                                                       | 1.0%                                                                                                                                            |
| Turn on Overshoot                                         |                                                                      | None                                                                                                                                            |
| Transient Response                                        | Outputs 1 – 4                                                        |                                                                                                                                                 |
| Voltage Deviation                                         |                                                                      | 5.0%                                                                                                                                            |
| Recovery Time                                             |                                                                      | 500µs                                                                                                                                           |
| Load Change                                               |                                                                      | 50% to 100%                                                                                                                                     |
| Output Overvoltage Protection<br>(Optional)               | Output 1:                                                            | 110% to 150%.<br>Shuts down all outputs. Cycle input to restart.                                                                                |
| Output Overpower Protection                               |                                                                      | 165 W Min., Outputs 1 and 2,<br>Outputs cycle on/off, auto recovery                                                                             |
| Output Overcurrent Protection                             |                                                                      | 110% Min., Outputs 3 and 4                                                                                                                      |
| Hold Up Time                                              |                                                                      | 20ms min., 150W, 120V Input                                                                                                                     |
| Start Up Time                                             |                                                                      | 3 Seconds                                                                                                                                       |

### INPUT SPECIFICATIONS

|                     |                    |
|---------------------|--------------------|
| Protection Class    | I                  |
| Source Voltage      | 85 – 264 Volts AC  |
| Frequency Range     | 47 – 63 Hz         |
| Source Current      |                    |
| True RMS            | 3A at 85V Input    |
| Peak Inrush         | 30A                |
| Peak Repetitive     | 4.25A at 85V Input |
| Harmonic Distortion | 0.05               |

Efficiency 0.68-0.80(varies by model)

Power Factor 0.90 (150 W, 230V)

### ENVIRONMENTAL SPECIFICATIONS

|                             |                                  |
|-----------------------------|----------------------------------|
| Ambient Operating           | 0°C to + 70°C                    |
| Temperature Range           | Derating: See Power Rating Chart |
| Ambient Storage Temp. Range | - 40°C to + 85°C                 |
| Temperature Coefficient     | Outputs 1 – 4: 0.02%/°C          |

### GENERAL SPECIFICATIONS

|                                                 |                                                                                   |
|-------------------------------------------------|-----------------------------------------------------------------------------------|
| Means of Protection                             |                                                                                   |
| Primary to Secondary                            | 2MOPP (Means of Patient Protection)                                               |
| Primary to Ground                               | 1MOPP (Means of Patient Protection)                                               |
| Secondary to Ground                             | Operational Insulation(Consult factory for 1MOPP)                                 |
| Dielectric Strength <sup>(8, 9)</sup>           |                                                                                   |
| Reinforced Insulation                           | 5656 VDC, Primary to Secondary                                                    |
| Basic Insulation                                | 2121 VDC, Primary to Ground                                                       |
| Operational Insulation                          | 707 VDC, Secondary to Ground                                                      |
| Leakage Current                                 |                                                                                   |
| Earth Leakage                                   | <300µA NC, <1000µA SFC                                                            |
| Touch Current                                   | <100µA NC, <500µA SFC                                                             |
| Power Fail Signal <sup>(14)</sup><br>(Optional) | Logic low with input power failure 10 ms<br>minimum prior to Output 1 dropping 1% |
| Remote Inhibit (optional)                       | Contact closure inhibits all outputs                                              |
| Remote Sense(Single models) <sup>(10)</sup>     | 250mV compensation of output cable losses                                         |
| Mean-Time Between Failures                      | 150,000 Hours min., MIL-HDBK-217F, 25° C, GB                                      |
| Weight                                          | 2.0 Lbs.                                                                          |

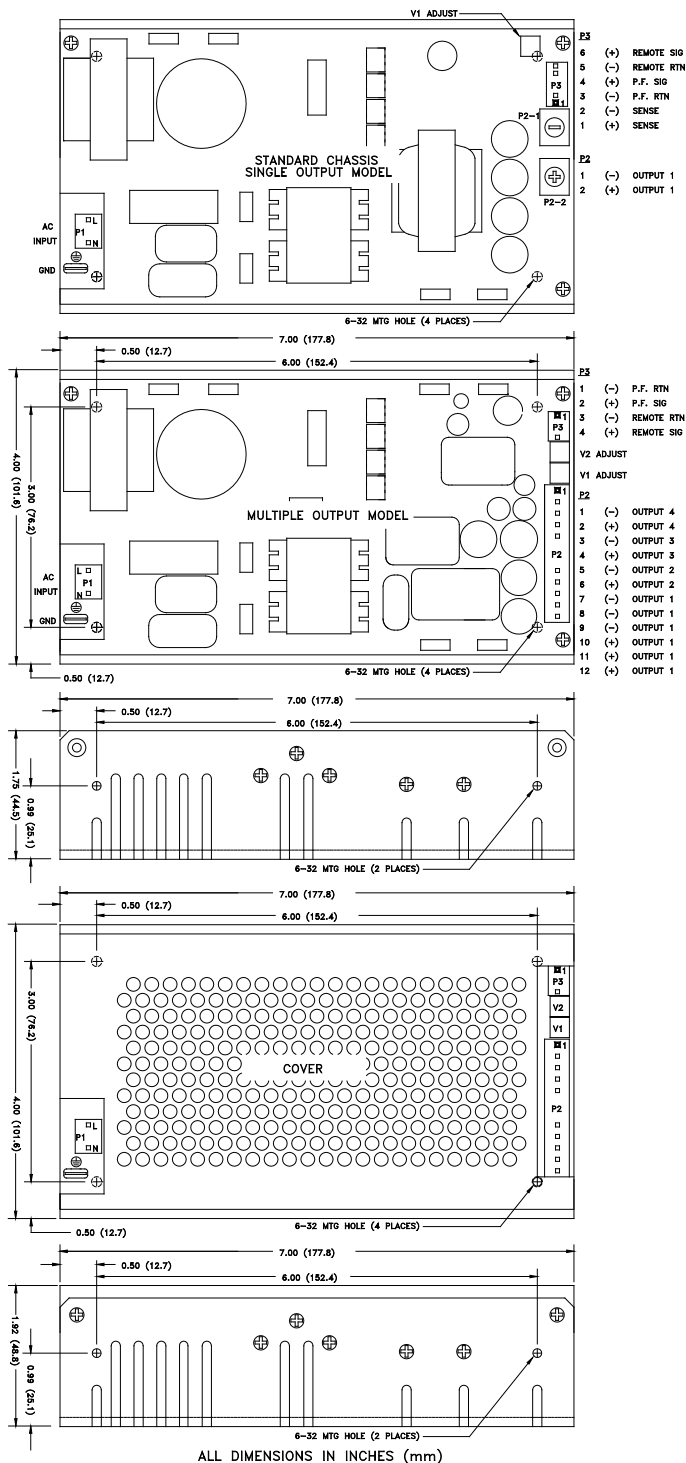
All specifications are maximum at 25°C/150W unless otherwise stated, may vary by model and are subject to change without notice.



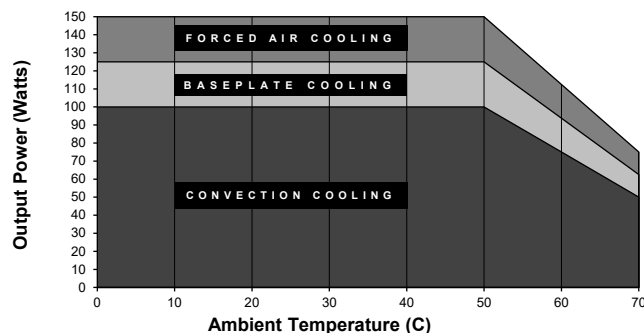
300 Stewart Road ■ Wilkes-Barre, PA 18706 ■ Phone: (570) 824-4666 ■ Fax: (570) 824-4843 ■ Email: [sales@ipdpower.com](mailto:sales@ipdpower.com) ■ Web: [www.ipdpower.com](http://www.ipdpower.com)

**EMC SPECIFICATIONS (IEC 60601-1-2:2014, 4<sup>TH</sup> ed./IEC 61000-6-2:2005)**

|                                   |               |                                                                                                                                                                                                                  |   |
|-----------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|
| Electrostatic Discharge           | EN 61000-4-2  | ±8KV contact / ±15KV air discharge                                                                                                                                                                               | A |
| Radiated Electromagnetic Field    | EN 61000-4-3  | 80MHz-2.7GHz, 10V/m, 80% AM                                                                                                                                                                                      | A |
| Electrical Fast Transients/Bursts | EN 61000-4-4  | ±2 KV, 5KHz/100KHz                                                                                                                                                                                               | A |
| Surge Immunity                    | EN 61000-4-5  | ±2 KV line to earth / ±1 KV line to line                                                                                                                                                                         | A |
| Conducted Immunity                | EN 61000-4-6  | 0.15 to 80MHz, 10V, 80% AM                                                                                                                                                                                       | A |
| Magnetic Field Immunity           | EN 61000-4-8  | 30A/m, 60 Hz.                                                                                                                                                                                                    | A |
| Voltage Dips                      | EN 61000-4-11 | 0% U <sub>T</sub> , 0.5 cycles, 0-315° 100/240V A/A<br>0% U <sub>T</sub> , 1 cycles, 0° 100/240V A/A<br>40% U <sub>T</sub> , 10/12 cycles, 0° 100/240V B/A<br>70% U <sub>T</sub> , 25/30 cycles, 0° 100/240V B/A |   |
| Voltage Interruptions             | EN 61000-4-11 | 0% U <sub>T</sub> , 300 cycles, 0° 100/240V B/B                                                                                                                                                                  |   |
| Radiated Emissions                | EN 55011/32   | Class B                                                                                                                                                                                                          |   |
| Conducted Emissions               | EN 55011/32   | Class B                                                                                                                                                                                                          |   |
| Harmonic Current Emissions        | EN 61000-3-2  | Class A                                                                                                                                                                                                          |   |
| Voltage Fluctuations/Flicker      | EN 61000-3-3  | Compliant                                                                                                                                                                                                        |   |

**CE-150 SERIES MECHANICAL SPECIFICATIONS****APPLICATIONS INFORMATION**

- Each output can deliver its rated current but Total Output Power must not exceed 100, 125 or 150W, as determined by the cooling method.
- Generally, adequate cooling is provided when semiconductor case temperatures do not exceed 70°C rise and transformer temperature does not exceed 60°C rise at any specified ambient temperature.
- Sufficient area must be provided around power supply to allow natural movement of air to develop in convection-cooled applications.
- This product is intended for use as a professionally-installed component within information technology, industrial, and medical equipment and is not intended for stand-alone operation.
- A minimum load of 10% is required on Output 1 to ensure proper regulation of remaining outputs.
- This product includes only one fuse in the input circuit. In consideration of Clause 8.11.5 of IEC 60601-1:2005, a second fuse may be required in neutral conductor of the end product.
- Peak-to-Peak Output Ripple and Noise is measured directly at the output terminals of the power supply, without the use of the probe ground lead or retractable tip (tip-and-barrel method), 20 MHz bandwidth.
- This product was type-tested and safety-certified using the dielectric strength test voltages listed in Table 6 of IEC 60601-1:2005. In consideration of Clause 8.8.3, care must be taken to insure that the voltage applied to a reinforced insulation does not overstress different types and levels of insulation. Primary and secondary-to-ground capacitors may need to be disconnected prior to performing a dielectric strength test on the power supply or the end product. It is highly recommended that the DC test voltages listed in DVB.1, Annex DVB of UL60601-1 1<sup>st</sup> Edition are not exceeded during a production-line dielectric strength test of the assembled end product. Please consult factory for further information.
- This power supply has been safety-approved and final-tested using a DC dielectric strength test. Please consult factory before performing an AC dielectric strength test.
- Remote-Sense terminals may be used to compensate for cable losses up to 250mV. The use of a twisted pair, decoupling capacitors and an appropriately-rated low-impedance capacitor connected across the load will increase noise immunity.
- Maximum screw penetration into chassis mounting holes is 0.250 inches.
- To comply with emissions specifications, all four mounting hole pads must be electrically connected to a common metal chassis. Chassis/Cover option is recommended. Refer to Operating Instructions for additional information.
- Common RF shielding precautions may need to be taken to assure emissions compliance. Refer to Operating Instructions for additional information.
- Power Fail (AC-Good) feature provides a logic-low warning signal from an open collector transistor output 10ms prior to loss of output from AC failure, 5V/10mA.
- Forced-Air cooling rating of 150W requires an air speed of 300LFM flowing past a point one inch above the main isolation transformer.
- Free-Air convection cooling, 100W maximum output power.
- Baseplate-cooled rating of 125W requires a one-square-foot 0.09"-thick aluminum area attached to bottom four mounting holes.
- Rated 20A maximum when convection cooled only.

**MAXIMUM OUTPUT POWER vs. AMBIENT TEMPERATURE****CONNECTOR SPECIFICATIONS**

|    |                         |                                                                                                                                                 |
|----|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| P1 | AC Input                | 0.156 friction lock header mates with Molex 09-50-3031 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal. |
| P2 | DC Output (Single)      | 6-32 screw down terminal mates with #6 ring tongue terminal. (10 in-lb max)                                                                     |
| P2 | DC Output (Multiple)    | 0.156 friction lock header mates with Molex 09-50-3121 or equivalent crimp terminal housing with Molex 08-50-0189 or equivalent crimp terminal. |
| G  | Ground                  | 0.187 quick disconnect terminal.                                                                                                                |
| P3 | Option/Sense (Single)   | 0.100 friction lock header mates with Molex 22-01-2067 or equivalent crimp terminal housing with Molex 6459 or equivalent crimp terminal.       |
| P3 | Option/Sense (Multiple) | 0.100 friction lock header mates with Molex 22-01-2047 or equivalent crimp terminal housing with Molex 6459 or equivalent crimp terminal.       |