



### FEATURES AND BENEFITS

3.3" x 6.2" x 1.62" Package

Up to 425W of Air-Cooled Power,  
300W Convection

Universal Input 90-264VAC Input Range

5V at 2A Standby Output

Approved to CSA/EN/IEC/UL60601-1,  
3<sup>rd</sup> Edition 2 MOPP Isolation

12V Fan Output

Inhibit, Power Fail, DC OK Signals,  
Remote Sense

Meets EN61000-4-2, EN61000-4-3 &  
EN61000-4-6 Requirements for Home  
Healthcare Applications

3 Years Warranty

Efficiency 88% Typical

RoHS Compliant

Cover and Fan Cover Options



### MODEL SELECTION

| Model Number   | Volts | Output Current |              | Ripple & Noise<br>(mV pk-pk) | Regulation<br>(% of Vout ) | OCP Threshold<br>(% Full load) | OVP Threshold<br>(% Vout) | Construction       |
|----------------|-------|----------------|--------------|------------------------------|----------------------------|--------------------------------|---------------------------|--------------------|
|                |       | (Convection)   | (200LFM air) |                              |                            |                                |                           |                    |
| MU425S12E      | 12V   | 22.0A          | 32.2A        | 120                          | 3%                         | 130%-170%                      | 110%-130%                 | U channel          |
| MU425S18E      | 18V   | 14.6A          | 21.5A        | 180                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| MU425S24E      | 24V   | 11.9A          | 16.8A        | 240                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| MU425S48E      | 48V   | 5.9A           | 8.4A         | 480                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| MU425S12EF     | 12V   | 32.2A          | N/A          | 120                          | 3%                         | 130%-170%                      | 110%-130%                 | Enclosure with Fan |
| MU425S18EF     | 18V   | 21.4A          | N/A          | 180                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| MU425S24EF     | 24V   | 16.8A          | N/A          | 240                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| MU425S48EF     | 48V   | 8.4A           | N/A          | 480                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| MU425S12EC     | 12V   | 14.2A          | 26.0A        | 120                          | 3%                         | 130%-170%                      | 110%-130%                 | Enclosure          |
| MU425S18EC     | 18V   | 9.4A           | 17.4A        | 180                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| MU425S24EC     | 24V   | 7.6A           | 13.0A        | 240                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| MU425S48EC     | 48V   | 3.8A           | 6.5A         | 480                          | 3%                         | 130%-170%                      | 110%-130%                 |                    |
| Standby Output | 5V    | 2.0A           | 2.0A         | 100                          | 5%                         | 130%-200%                      | 110%-130%                 | All Models         |
| Fan Output     | 12V   | 0.5A           | 1.0A         | 360                          | 10%                        | 150%-200%                      | N/A                       |                    |

**Note:** 1. Total power with 200 LFM of forced air cooling is 425W (408W for 18V, 385W for 12V) including 12V/1A for fan output and 5V/2A standby.

2. Total convection power is 300W (280W for 12V model). Total power includes 5VSB and fan outputs.

3. Measured at 25°C ambient with noise probe directly at end of 6" twisted pair terminated with 0.1µF ceramic and 10µF low ESR capacitors. Values will be higher at ambient temperatures below 0°C.

4. Efficiency values listed are typical and are measured at 115VAC input, full load output current, at an ambient temperature of 25°C.

5. Fan output regulation is with 1A min load on main output.

6. Fan output: If the load on the output is other than a fan, a short circuit condition on the output can only be remedied by removing both the cause of the short circuit and the load. This will allow the output to resume normal operation.



### INPUT

|                 |                                                                                                                                  |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| AC Input        | 100-240VAC, $\pm 10\%$ , 47-63Hz, 1 $\emptyset$<br>120-300VDC (external fuse required for DC input)                              |
| Input Current   | 115VAC: 5.2A, 230VAC: 2.5A                                                                                                       |
| Inrush Current  | 264VAC, cold start: will not exceed 40Arms within ½ cycle. I <sup>2</sup> T = 25A <sup>2</sup> /sec maximum                      |
| Input Fuses     | F1, F2: 6.3A, 250VAC                                                                                                             |
| Leakage Current | Earth: <750 $\mu$ A @ 264VAC, 60Hz, NC<br><1.5mA @ 264VAC, SFC<br>Touch: <100 $\mu$ A @ 264VAC, NC<br><500 $\mu$ A @ 264VAC, SFC |
| Efficiency      | See chart above                                                                                                                  |
| Power Factor    | >0.99 @ 115VAC, Full load<br>>0.95 @ 230VAC, Full load                                                                           |

### PROTECTION

|                            |                                                                                                                                |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| Overtemperature Protection | Sensing transformer temperature, 135°C (55°C ambient temperature at full load), Auto-recovery                                  |
| Overload Protection        | 130% to 170% of rating, Hiccup mode, Auto-recovery                                                                             |
| Short Circuit Protection   | Main output & 5VSB: Cycling type, Auto-recovery<br>Fan output: Recovery only after removal of short and load. See note 5 above |
| Overvoltage Protection     | OVP latch, See chart for trip ranges<br>5V standby output (latch), See chart for trip range                                    |

### ENVIRONMENT

|                       |                                                                                                                                          |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| Operating Temperature | -10°C to 70°C. Starts up- 40°C. The unit will meet all published specifications after a warm-up period                                   |
| Temperature Derating  | Derate output power linearly above 50°C to 50% at 70°C                                                                                   |
| Storage Temperature   | -40°C to +85°C                                                                                                                           |
| Altitude              | Operating: Up to 5,000m (derating may be required above 3,000m, consult factory)<br>Non-operating: -500 to 40,000 ft                     |
| Relative Humidity     | 5% to 95%, Non-condensing                                                                                                                |
| Vibration             | Operating: 0.003g/Hz, 1.5grms overall, 3 axes, 10 min/axis<br>Non-operating: 0.026g <sup>2</sup> /Hz, 5.0grms overall, 3 axes, 1 hr/axis |
| Dimensions            | W: 3.3" x L: 6.2" x H: 1.62"<br>W: 84mm x L: 157.5mm x H: 41mm                                                                           |
| Weight                | 670g                                                                                                                                     |

### OUTPUT

|                            |                                                                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| Hold-Up Time               | Main output: >20ms for 300W @ 120VAC/60 Hz,<br>>16ms for 367W (90% of 408W) @ 120VAC/60Hz<br>5VSB output: >500ms                                |
| Turn On Time (Main Output) | Main output: <1 sec. max @115VAC, rise time 30ms max<br>5VSB: Turn-on time is 500ms max, Rise time 50ms max<br>Output voltage rise is monotonic |
| Switching Frequency        | 75KHz, Typical                                                                                                                                  |
| Output Power               | 425W continuous (24V model), with 200 LFM airflow.<br>408W for 18V, 385W for 12V models<br>300W convection cooled (280W for 12V model)          |
| Output Voltage             | See chart on page 1. Initial setpoint within 0.5% of nominal. Adjustable +/-5% from nominal                                                     |
| Ripple and Noise           | 0.5%rms, 1% pk-pk, see chart on page 1                                                                                                          |
| Transient Response         | 50% load step, $\Delta i/\Delta t$ : <0.2A/ $\mu$ S<br>Max voltage deviation = 5%<br>Recover to within 1% of nominal within 500 $\mu$ S         |
| Minimum Load               | Not required for main output or 5VSB. 12V fan output requires minimum load of 0.5A on main output in order to be within its regulation band     |
| Common Mode Noise          | Line frequency: <2.5Vrms @115VAC, <5Vrms @ 230VAC, 50/60Hz. For high frequency noise and/or test set-up information, consult SL Power           |
| Total Regulation           | See chart on page 1                                                                                                                             |

### SAFETY

|                  |                                                                                                                             |
|------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Safety Standards | EN/CSA/UL/IEC 60601-1, 3 <sup>rd</sup> Edition                                                                              |
| Shock            | Operating: Half-sine, 20gpk, 10ms, 3 axes, 6 shocks total<br>Non-operating: Half-sine, 40 gpk, 10ms, 3 axes, 6 shocks total |

### RELIABILITY

|            |                                                                                              |
|------------|----------------------------------------------------------------------------------------------|
| MTBF       | 3,56,330 hours, per Telcordia 332, Issue 6, 25°C Full rated load (w/airflow) at 110VAC input |
| E-Cap Life | 7 years, based on typical operation of 12 hours/day, 261days/year at 40°C ambient temp       |

### ISOLATION SPECIFICATIONS

|           |                                                                         |
|-----------|-------------------------------------------------------------------------|
| Isolation | Input-Output: 2 MOPP<br>Input-Ground: 1 MOPP<br>Output-Ground: 1,500VDC |
|-----------|-------------------------------------------------------------------------|



### AUXILIARY SIGNALS

|                       |                                                                                                                                                                                       |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power Good/Power Fail | Signal is HIGH within 500ms after the main output is within regulation band upon AC turn on. Goes LOW within 4ms before the main DC output drops to <90% of nominal when AC turns off |
| 5V Standby Output     | 5V @ 2A, +/-5% regulation over all changes in main output load current                                                                                                                |
| Remote Sense          | Compensates for up to 0.16V voltage drop. Max deviation of 5% (main output) any 50% step above 5% load                                                                                |
| DC OK                 | Goes HIGH when main DC output is above 90% of nominal voltage and goes LOW when the output is below 90% of rated main output DC voltage                                               |
| Fan Output            | 12V@1A (air cooled) or 0.5A (convection), +/-10% regulation for load change of 0.5A to FL on the main output                                                                          |
| Inhibit               | Logic HIGH or open = ON Logic LOW or short to ground = OFF                                                                                                                            |

### CONNECTOR INFORMATION

| Input Connector<br>J101                                                    | Main DC Output<br>J302, J303                                      | Fan Output<br>J301                                          | Signal Connector<br>J401                                                                                                                                                                                       |
|----------------------------------------------------------------------------|-------------------------------------------------------------------|-------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PIN 1) FG<br>PIN 2) NC<br>PIN 3) AC Neutral<br>PIN 4) NC<br>PIN 5) AC Line | Term 1 – J302: (+V)<br>Term 2 – J303: (-V)                        | PIN 1) 12V Fan (+)<br>PIN 2) 12V Fan (-)                    | PIN 1) Remote Sense (+)<br>PIN 2) Common<br>PIN 3) Remote Sense (-)<br>PIN 4) NC<br>PIN 5) Remote Inhibit<br>PIN 6) Power Good<br>PIN 7) +5Vsb Output<br>PIN 8) +5Vsb Output<br>PIN 9) DC OK<br>PIN 10) Common |
| Mating Connector:<br>Tyco/AMP 640250-5<br>Pins: 770476-1                   | Mating Connector:<br>Molex 19141-0058<br>19141-0063<br>19141-0083 | Mating Connector:<br>Tyco AMP<br>1375820-2<br>Pins: 1375819 | Mating Connector:<br>Molex 90142-0010<br>Pins: 90119-2110                                                                                                                                                      |

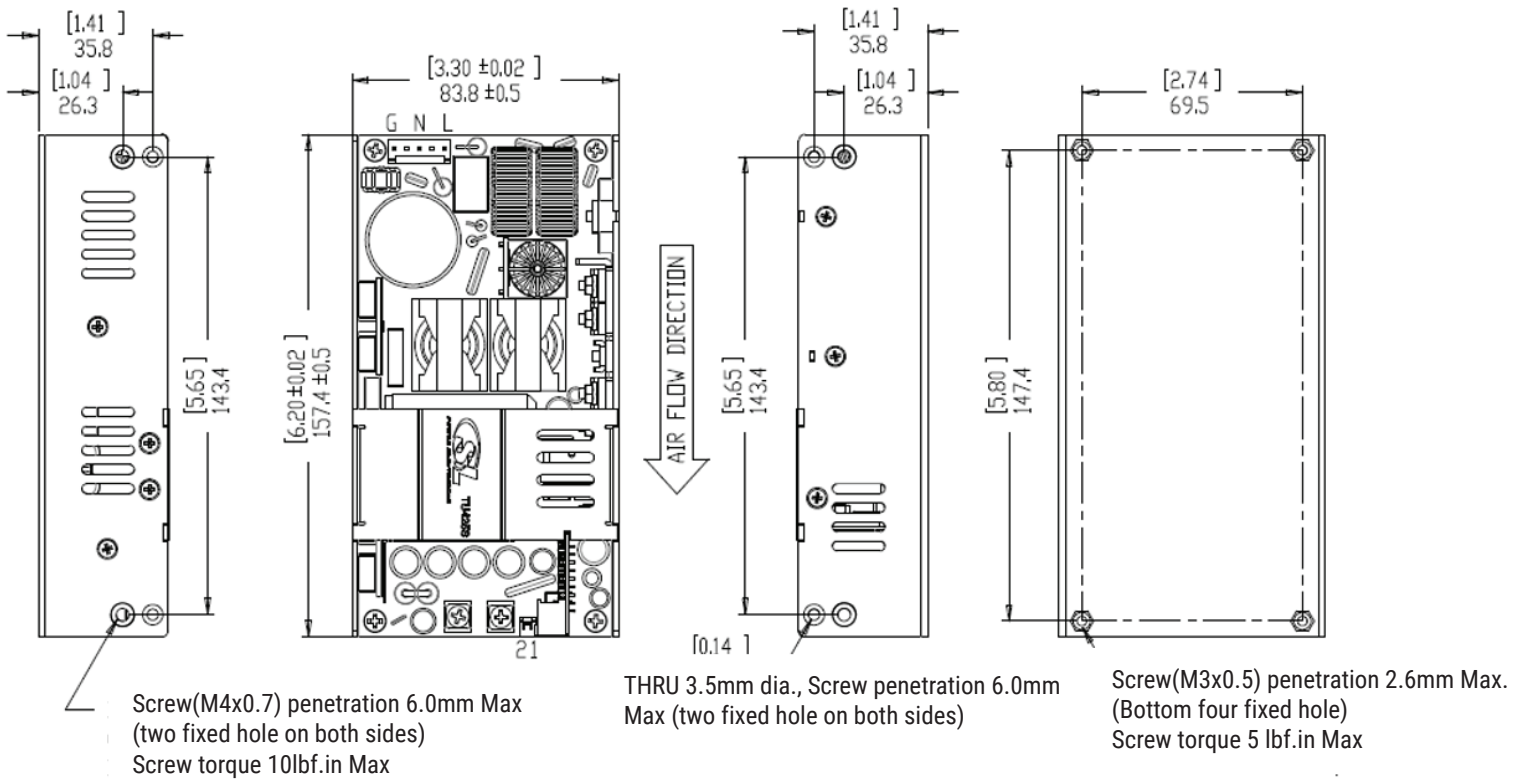
### EMI/EMC COMPLIANCE

|                                         |                                                                                                                                                          |
|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conducted Emissions                     | EN55011/CISPR22 Class B, FCC Part 15.107, Class B, 6db margin, Typical                                                                                   |
| Radiated Emissions                      | EN55022/CISPR22 Class A, FCC Part 15.109, Class A, 3db margin, Typical                                                                                   |
| Static Discharge Immunity               | EN55024/IEC61000-4-2, Level 4, 8kV contact discharge, 15kV air discharge, Criteria A                                                                     |
| Radiated RF Immunity                    | EN55022/IEC61000-4-3, Level 2, 10V/m, 80-2,700 MHz Criteria A                                                                                            |
| REFT/Burst Immunity                     | EN55024/IEC61000-4-4, Level 3, 2kV (PS output), 1kV (signal output), Criteria A 100KHz                                                                   |
| Line Surge Immunity                     | EN55024/IEC61000-4-5, Level 3, 1kV diff, 2kV common-mode, Criteria A                                                                                     |
| Conducted RF Immunity                   | EN55022/IEC61000-4-6, Level 3, 3Vrms, 0.15-80MHz and 6V@ISM frequency, Criteria A                                                                        |
| Power Frequency Magnetic Field Immunity | EN55024/IEC61000-4-8, Level 3, 30A/m, Criteria A                                                                                                         |
| Voltage Dip Immunity                    | EN55024/IEC61000-4-11, Dips: 100%, 10ms, 8 phase angles ; 100%, 20ms; 30%, 500ms<br>Interruptions: 100%, 5000ms; Performance criteria A, A (300W), A & B |
| Line Harmonic Emissions                 | EN55024/IEC61000-3-2, Class A & D at full load                                                                                                           |
| Flicker Test                            | EN55024/IEC61000-3-3, Section 5; 50Hz                                                                                                                    |



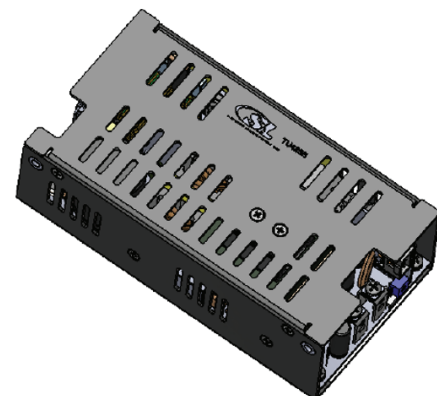
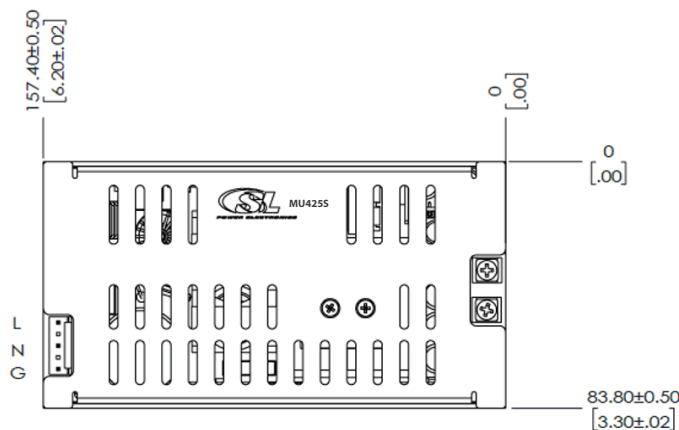
### MECHANICAL DRAWING

Base Model: MU425SxxE



Cover Option: MU425SxxEC

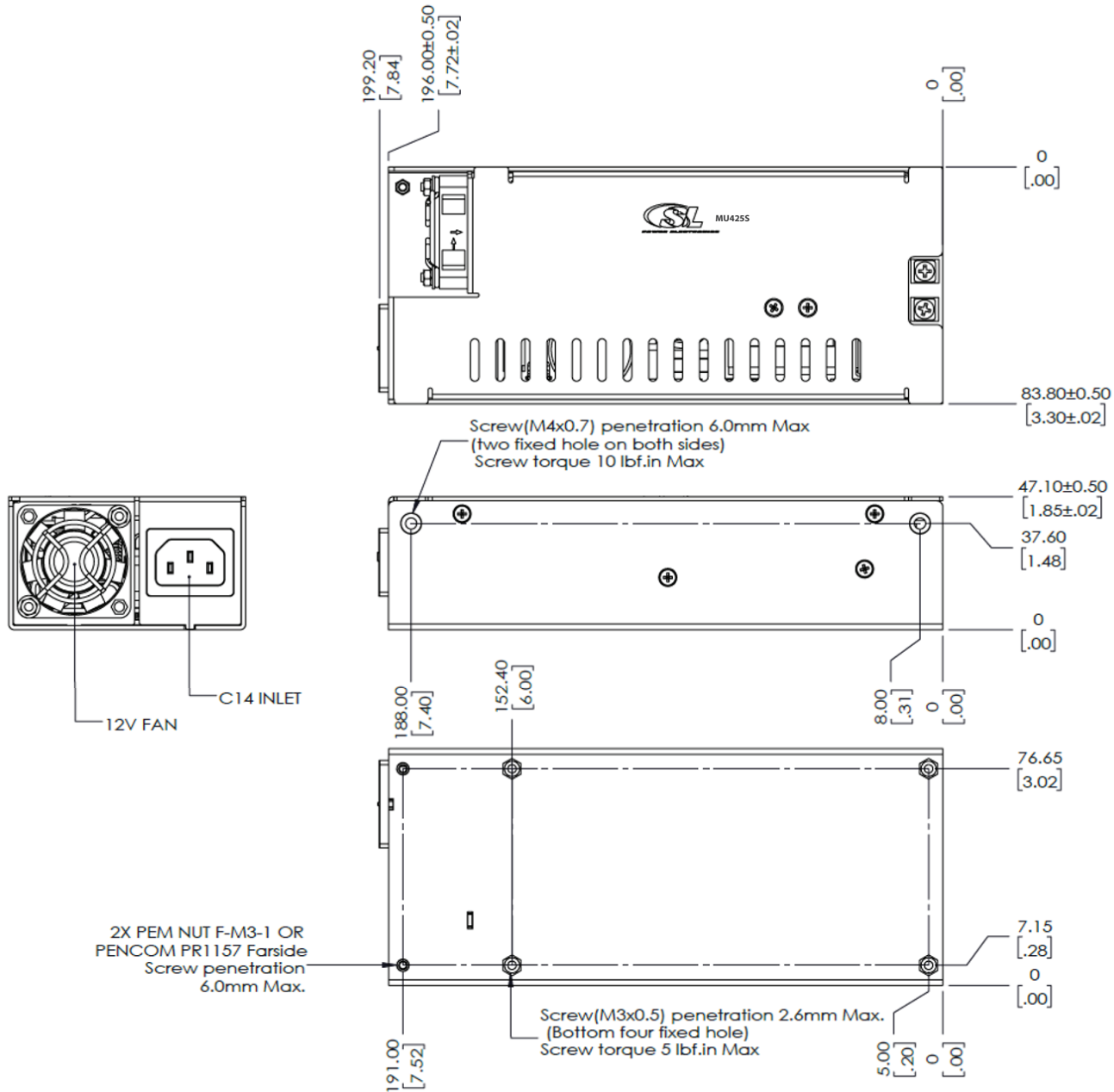
(Top view shown only, other views same as base model above)





### MECHANICAL DRAWING

Fan Cover Option: MU425SxxEF



- Note:**
1. Specifications subject to change without notice.
  2. All dimensions in inches (mm), tolerance is ±0.02". (±0.5).
  3. FG is safety ground connection.
  4. Specifications are for convection rating at factory settings at 115 VAC input 25°C unless otherwise stated.
  5. Warranty: 3 years.