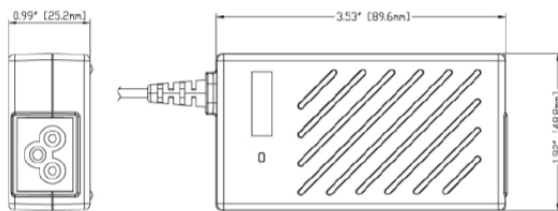


50 Watt Changes for Level VI
FWE050 Series

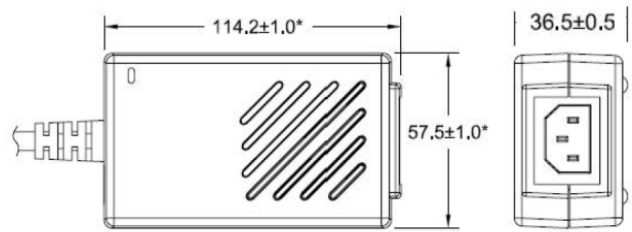
Inventus Power believes the performance of the new 50W design is slightly better than the legacy design, but we encourage you to review the following details for any implication that may affect your system's performance. Particularly, we recommend reviewing leakage current and EMI curves, and perhaps re-test EMI compliance at the system level.

Mechanical: The case size is longer and taller. For the class I version, the AC connector has changed from IEC 60320 C6 (Mickey Mouse) to C14 (standard computer plug). The old case was 3.53" x 1.92" x 1.00", the new case is 4.48" x 2.26" x 1.43"

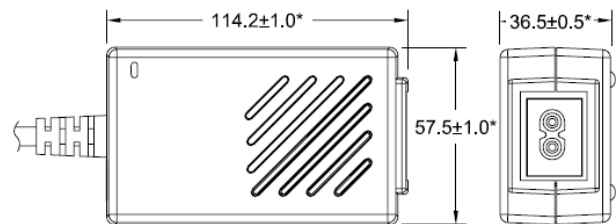
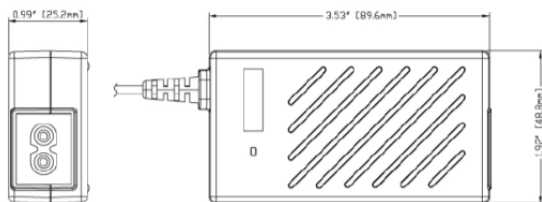
Old:



New:



For the Class II, the connector has not changed.



Efficiency: Efficiency has been improved by about 1% and no load power consumption has been reduced. The new designs are compliant with the Level VI efficiency requirement for consumer products which became mandatory in the US in February 2016. Average efficiency is now above 89%, and no load power consumption is approx. 0.06W at 115VAC input, and .0.08W at 230VAC input.

Inrush Current: Inrush Current will vary from test to test depending on the phase of the AC input unit. However, in a sample of 1 each, the original design had a cold inrush of 51A and in the new design it was 42A. We believe the two designs are roughly compatible, with the new design better in terms of inrush.

Line / Load Regulation: Regulation is slightly worse in the new design, but still well within the product guidelines. For example, in the 12V unit, all combinations of line and load had a range of 11.66 to 11.984V, a delta of 0..324V. The new design has a range of 11.823 to 12.26V, a delta of 0.437V.

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Ripple and Noise: Noise is slightly lower in the new design; 90VAC/50Hz decreased from 109mV to 102mV and 264/50Hz decreased from 84mV to 73mV.

Overcurrent Shutdown: The shutdown point is slightly higher in the new design. In the 12V unit, the typical over current shutdown point went from 5.25A to 6.0A.

Overvoltage Shutdown: The overvoltage shutdown point close to the same voltage. In the 12V unit, the shutdown point was 14.6V and is now 14.9V.

Output Turn-on Delay: Output Turn-on Delay is slightly longer at 100VAC from ~ 264mS to ~314mS. At 230VAC, the delay is slight longer from ~61mS to 143mS.

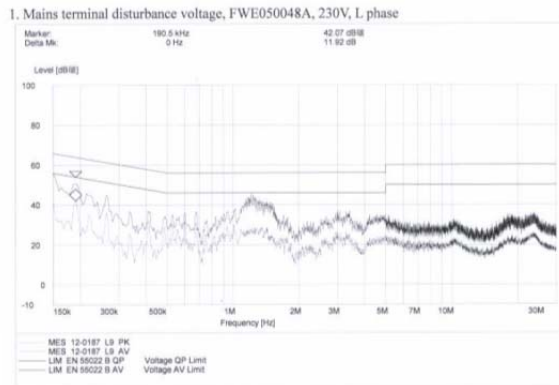
Hold-up Time at Shut Down: Hold-up remains at full load at 115VAC was 17.2ms, and is now 11.2ms. At 240VAC and full load the hold time is reduced from ~96mS to 91mS.

Leakage Current: Leakage current has stayed the same. For Earth Leakage Current, at 264VAC, the leakage current remains the same at 55µA.

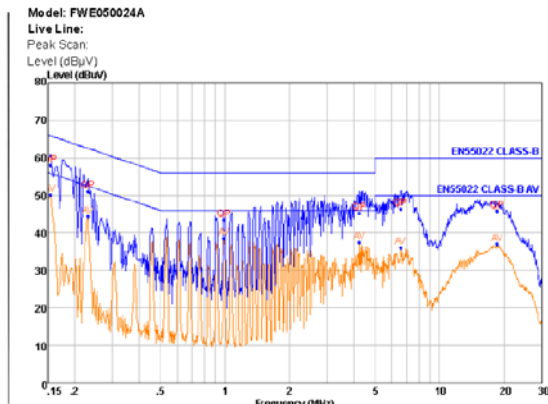
Radiated EMI:

Please see the below representative graphs for comparison between the new and old designs:

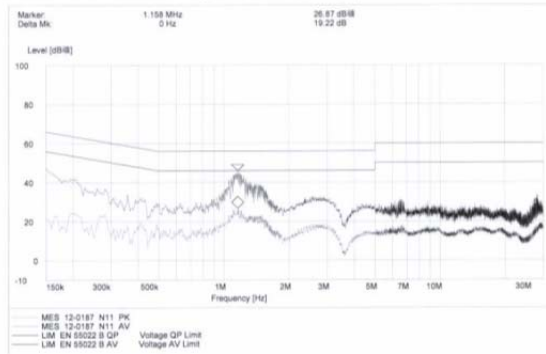
Old Design



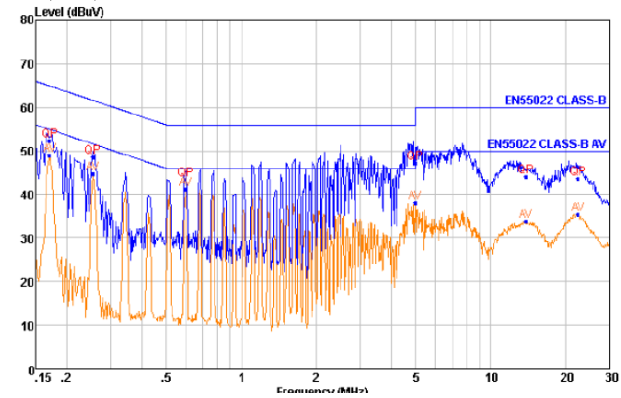
New Design



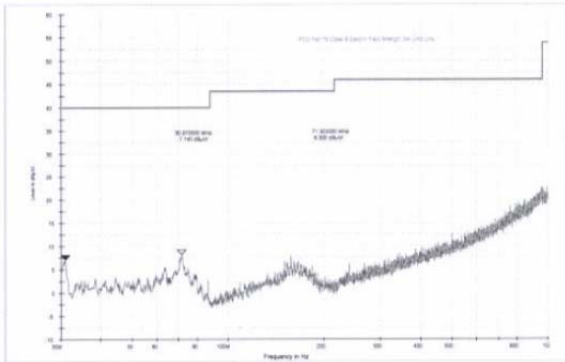
2. Mains terminal disturbance voltage, FWE050048A, 120V, N phase



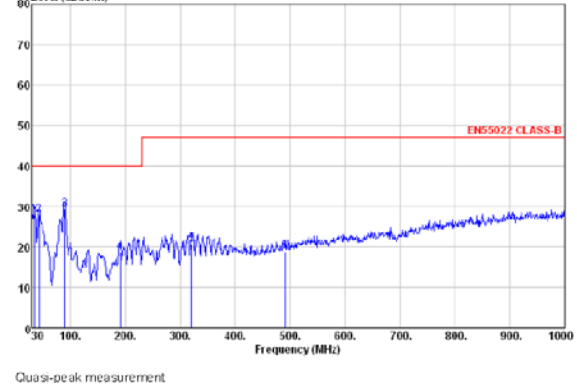
Neutral Line:
Peak Scan:
Level (dBµV)



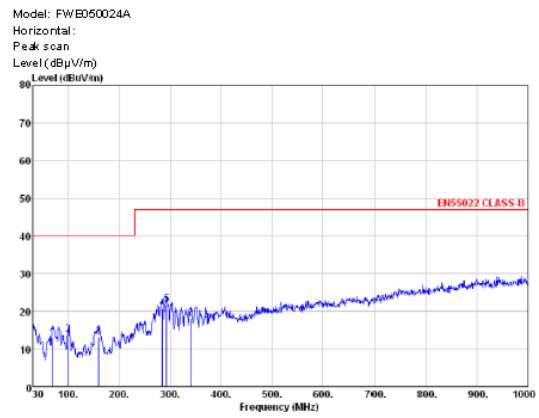
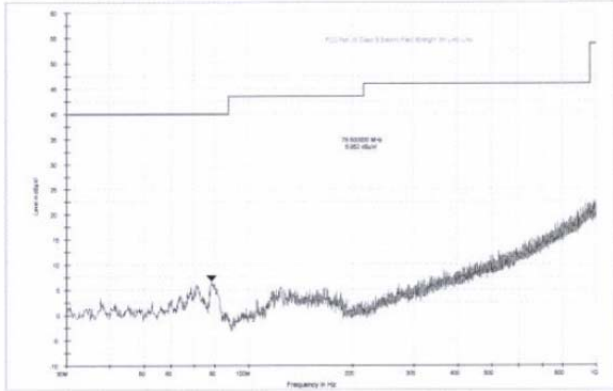
FWE050 120V Vertical



Vertical:
Peak scan:
Level (dBµV/m)



FWE050 120V Horizontal



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