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September 22, 2009

To: Will Reed
Evluma

From: Patrick André

Re: Surge Testing Requirements and Results

Transient testing was performed on the Evluma Clearlight 40w, 40 Watt lamp (models 46505625 and 83125148) to the levels defined in IEEE C62.41. Testing was performed at 6 kV using the Combined Wave surge test, from line to line. The Combined Wave pulse has a 1.2 μ S rise time and a 50 μ S decay to 50% when loaded into a high impedance or open circuit. It has a 8 μ S rise time and a 24 μ S decay to 50% when loaded into a short circuit. The pulse generator had a 2 Ω source impedance, with a potential of over 3 kA.

This test pulse is also used in international standards, under the title of EN61000-4-5 in Europe, and IEC61000-4-5 elsewhere. The test levels required are typically 0.5 kV when tested line to line from a 2 Ω source impedance, and 1.0 kV line to ground from a 12 Ω source impedance. For industrial use, and for equipment which must be used in severe environments, testing is double these values, or 1.0 kV and 2.0 kV respectively. There are no requirements to test above 2 kV, although the standards allow for testing up to 4 kV.

It should be noted that a 6 kV pulse from a 2 Ω source impedance must dissipate 900 Joules, while a 1 kV pulse must dissipates only 25 joules. A 500 Volt transient pulse will generate only 6.25 Joules.

The Clearlight 40w passed all testing at all transient voltages induced. Testing was performed up to 10 times at each position in a variety of angle potions on the 60 Hz power waveform. No indication or degradation or susceptibility was found at anytime during testing.



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