

RFI Test Report – Lighting Device

Manufacturer: Elite Lighting Model: RL675 15W Round LED Light Fixture

Model number: RL675-900L-DIMTR-120 <https://iuseelite.com/product/rl675/>

Description: 8-inch diameter LED light fixture with external DC converter

Purchased from: An Electrician Price: \$40

Test equipment: Isolation transformer, 50 uH LISN, HP 8560A with 20 dB preamp, Tek TDS320A. Note: Spectrum spikes around 100 MHz are FM band leakage.

Tested by: Gary Johnson, NA6O Date: Mar 19, 2019

Summary

Recommend for amateur radio stations: NO, terrible RFI generator.

FCC Part 15 conducted emissions: Non-compliant, see below.

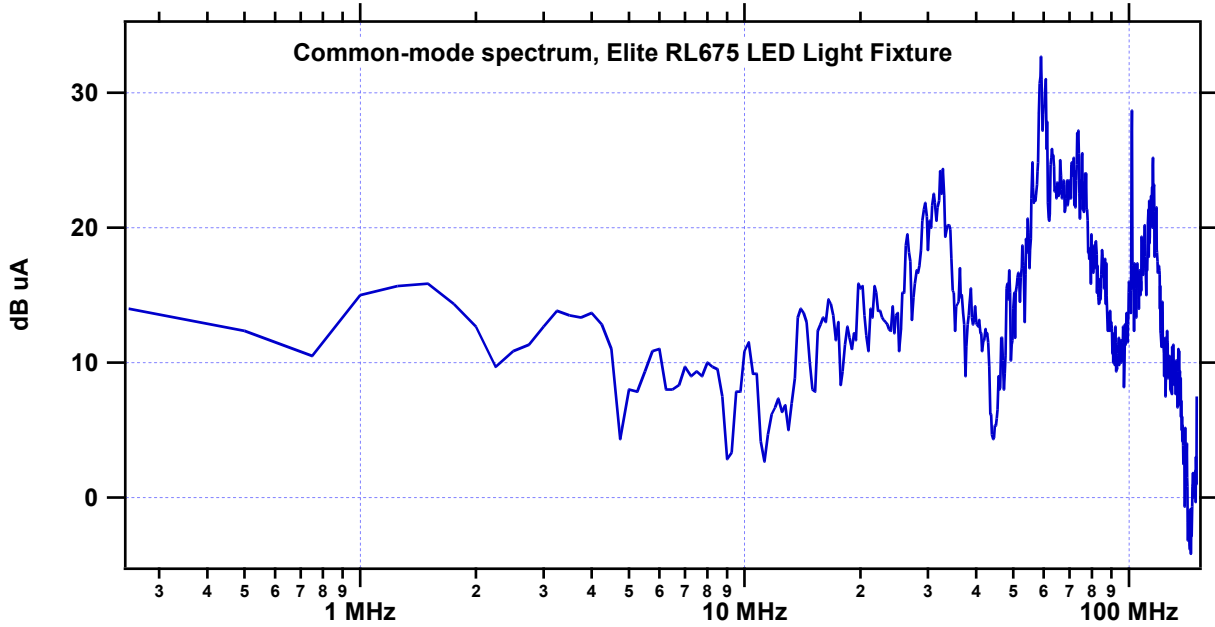
FCC Part 15 labeling: NON-COMPLIANT

Observations:

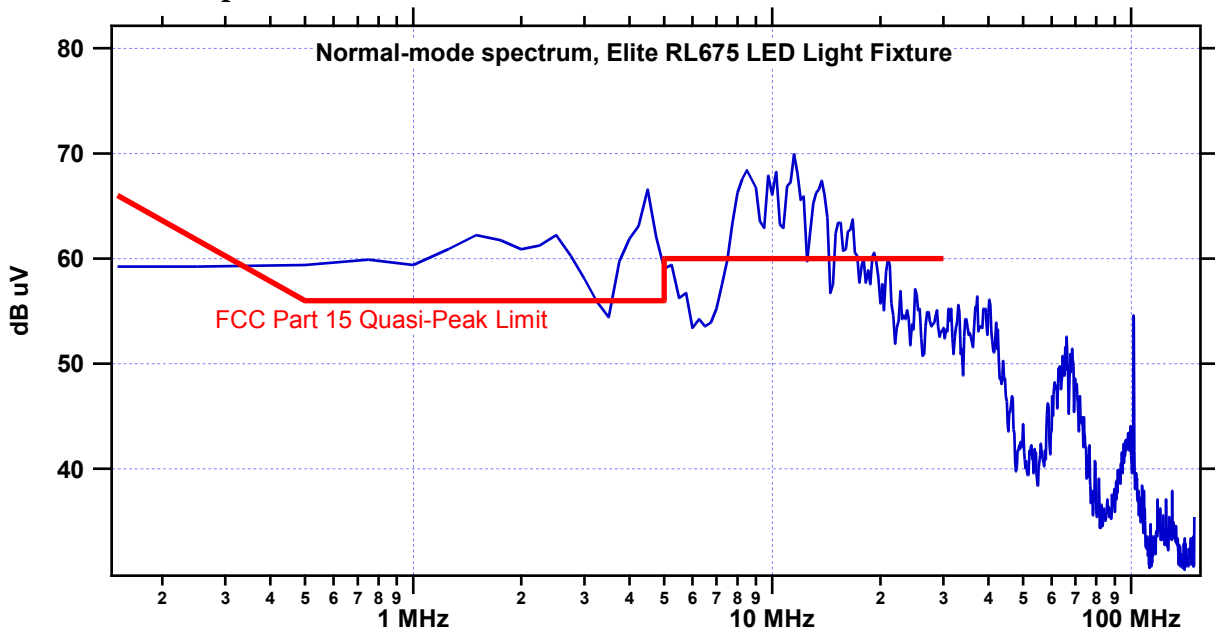
Switching frequency about 76 kHz. Normal-mode exceeds FCC Part 15, which is what the ARRL RFI lab also reported, though the manufacturer has a formal test report performed by Intertek that says it is compliant. Root cause of RFI is the fact that the switchmode converter has absolutely no filtering components on the AC line side (it does have an empty location on the PC board for an X capacitor across the line). The same problematic converter is apparently used in a large number of fixtures by this company and others. These fixtures are the cause of my own personal RFI disaster and can only be described as the devil incarnate. *Do not use near any RF receiving equipment.*



Common-mode Spectrum



Normal-mode Spectrum



Normal-mode Waveform

Peak-detect mode. Amplitude was so high that I had to remove my preamp. Bursts are 67 kHz sinewaves. Long, ragged ringdown glitches occur on every cycle of the 67 kHz. This is the cause of all the wideband RFI. I include an extra plot, showing a typical glitch.

