MPE Calculation / RF Exposure

Applicant: YL Co., Ltd.

Product: LED Engine for HBE

Model: YLRK120_HBE_Engine-130W

FCC ID : 2AGMP-YLRK120-130

The FCC requires that the calculated MPE be equal to or less than a given limit dependent on frequency at a distance of 20 cm from the device to the body of the user. According to §2.1091, §2.1093 and §1.1307(b), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

$$\mathbf{S = EIRP/4\ \pi\ R^2}$$

Where S = Power density

EIRP = Effective Isotropically Radiated Power

R = distance to the centre of radiation of the antenna

Values S = 1.0 mW/cm^2 for General population uncontrolled exposure (FCC Part 1.1310 Radiofrequency radiation exposure limits)

S = 1.0 mW/cm^2

PT = -2.56 dBm (0.55 mW) : measured maximum output power

G = Antenna gain = 1.99 dBi (1.58 in linear terms)

EIRP = PT x G

R = 20 cm

Calculation EIRP =0.55 x 1.58 = 0.869 mW

S = 0.869/12.56 x (20)^2

S = 0.869/5024

S = 1.7297 x 10-^{4} mW/cm^2

Conclusion **This confirms compliance to the required FCC Part 1.1310 Radiofrequency radiation exposure limit of 1.0 mW/cm^2 at 20 cm operation.**