

**Table 502.04(2): Interior Lighting Power Density Calculation**

Sl. No	Name of the Spaces	Area (m²)	Light Fitting Model	Lighting Fixture (W)	No. of Fixtures	Total Power (W)		Total LPD (W/m²)
1	Open Office	60	Linear Light	60	2	120	270	5.33
			Spot Light	30	5	150		
2	Manager Cabin	10	Linear Light	40	1	40	40	
3	Meeting Room	20	Linear Light	50	1	50	170	
			Spot Light	30	4	120		
	Total	90					480	

$$\text{Lighting Power Density} = \frac{\text{Total Wattage of Lighting (W)}}{\text{Total Floor Area (m}^2\text{)}}$$

$$\begin{aligned}\text{Lighting Power Density} &= \frac{480}{90} \\ &= 5.33 \text{ W/m}^2\end{aligned}$$

The total LPD for this office space is 5.33 W/m<sup>2</sup> which is less than the required 10 W/m<sup>2</sup> LPD limit as required for Commercial/Public building type. Hence, the proposed lighting design complies with this regulation.

## COMPLIANCE DOCUMENTATION

**Table 502.04(3) - Documents Required**

Project Stages	Submittal Documents
Design Permit Application	1. Include the lighting power density calculation in the heat load analysis report.
Construction Completion Application	1. Final approved lighting layout indicating locations of the fixtures. 2. Lighting fixtures manufacturer technical data-sheet.
After Completion	Not applicable.

## REFERENCES AND ADDITIONAL INFORMATION

American Society of Heating, Refrigerating and Air-Conditioning Engineers. (2016). ASHRAE standard 90.1: Energy Standard for Buildings Except Low-Rise Residential Buildings (3 Stories or less, one family and two-family residential buildings), [www.ashrae.org](http://www.ashrae.org).

American Society of Heating, Refrigerating and Air-Conditioning Engineers. (2018). ASHRAE standard 90.2: Energy-Efficient Design of Low-Rise Residential Buildings (3 Stories or less, one family and two-family residential buildings), [www.ashrae.org](http://www.ashrae.org)