

Commercial Lighting Demand Calculator

Organize commercial lighting rows into connected VA, adjusted VA, and line current using explicit demand and continuous factors.

Generated October 10, 2026

<https://www.elecatrix.com/commercial-industrial-loads/commercial-lighting-demand-calculator/>

Inputs

Input	Value	Unit
Lighting load rows	Rows: 2	
Row 1 - Load label	High-bay lighting	
Row 1 - Connected load	48000	VA
Row 1 - Demand factor	100	%
Row 1 - Continuous multiplier	125	%
Row 2 - Load label	Warehouse aisle lighting	
Row 2 - Connected load	24000	VA
Row 2 - Demand factor	100	%
Row 2 - Continuous multiplier	125	%
System voltage	480	V
Phase model	Three-phase	

Results

Result	Value	Unit
Connected load	72000	VA
Entered-demand lighting load	72000	VA
Continuous-load adder	18000	VA
Adjusted lighting load	90000	VA
Line current	108.2532	A
Load row count	2	rows
Phase multiplier	1.7321	x

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Calculation details

Detail	Value	Unit
Calculation basis	Each entered load row receives its entered demand factor and continuous multiplier before current conversion.	
Planning boundary	Mode worksheet only; no occupancy table, feeder selection, service sizing, or authority determination is made.	

Formulas

$$V!A_{connected} = \sum_i V!A_i$$

$$D_i = \frac{V!A_i}{F_i} \cdot 100$$

$$A_i = D_i \left(\frac{C_i}{100} - 1 \right)$$

$$V!A_{demand} = \sum_i D_i$$

$$V!A_{continuous} = \sum_i A_i$$

$$V!A_{adjusted} = V!A_{demand} + V!A_{continuous}$$

$$I = \frac{V!A_{adjusted}}{k \cdot \text{phase} \cdot V}$$

Warnings and limitations

This worksheet uses supplied lighting load assumptions. It does not select a demand table or determine project requirements.