

Commercial Office Load Calculator

Organize office lighting, receptacle, and equipment rows into connected VA, adjusted VA, and line current using explicit row factors.

Generated October 10, 2026

<https://www.elecatrrix.com/commercial-industrial-loads/commercial-office-load-calculator/>

Inputs

Input	Value	Unit
Office load rows	Rows: 3	
Row 1 - Load label	General lighting	
Row 1 - Connected load	12000	VA
Row 1 - Demand factor	100	%
Row 1 - Continuous multiplier	125	%
Row 2 - Load label	Receptacles and plug loads	
Row 2 - Connected load	18000	VA
Row 2 - Demand factor	80	%
Row 2 - Continuous multiplier	100	%
Row 3 - Load label	Small office equipment	
Row 3 - Connected load	9000	VA
Row 3 - Demand factor	75	%
Row 3 - Continuous multiplier	100	%
System voltage	480	V
Phase model	Three-phase	

Results

Result	Value	Unit
Connected load	39000	VA
Entered-demand office load	33150	VA
Continuous-load adder	3000	VA

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Adjusted office load	36150	VA
Line current	43.4817	A
Load row count	3	rows
Phase multiplier	1.7321	x
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

$$\begin{aligned} V!A_{connected} &= \sum_i V!A_i \\ D_i &= \frac{V!A_i}{F_i} \cdot 100 \\ A_i &= D_i \left(\frac{C_i}{100} - 1 \right) \\ V!A_{demand} &= \sum_i D_i \\ V!A_{continuous} &= \sum_i A_i \\ V!A_{adjusted} &= V!A_{demand} + V!A_{continuous} \\ I &= \frac{V!A_{adjusted}}{k_{phase} \cdot V} \end{aligned}$$

Warnings and limitations

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