

Commercial Receptacle Demand Calculator

Organize receptacle load 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-receptacle-demand-calculator/>

Inputs

Input	Value	Unit
Receptacle load rows	Rows: 2	
Row 1 - Load label	Office receptacles	
Row 1 - Connected load	18000	VA
Row 1 - Demand factor	80	%
Row 1 - Continuous multiplier	100	%
Row 2 - Load label	Break-room receptacles	
Row 2 - Connected load	6000	VA
Row 2 - Demand factor	75	%
Row 2 - Continuous multiplier	100	%
System voltage	480	V
Phase model	Three-phase	

Results

Result	Value	Unit
Connected load	24000	VA
Entered-demand receptacle load	18900	VA
Continuous-load adder	N/A	VA
Adjusted receptacle load	18900	VA
Line current	22.7332	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

$$D_i = S_i \times \frac{F_{d,i}}{100}$$

$$A_i = D_i \times (\frac{F_{c,i}}{100} - 1)$$

$$S_{adjusted} = \sum_i (D_i + A_i)$$

$$I = \frac{S_{adjusted}}{V} \times k_{phase}$$

Warnings and limitations

This mode uses entered receptacle load assumptions. It does not select a demand table or determine project requirements.