

Commercial Retail Load Calculator

Organize sales-floor, receptacle, and stockroom rows into connected VA, adjusted VA, and line current using explicit row factors.

Generated October 10, 2026

<https://www.elecatrix.com/commercial-industrial-loads/commercial-retail-load-calculator/>

Inputs

Input	Value	Unit
Retail load rows	Rows: 3	
Row 1 - Load label	Sales floor lighting	
Row 1 - Connected load	30000	VA
Row 1 - Demand factor	100	%
Row 1 - Continuous multiplier	125	%
Row 2 - Load label	Point-of-sale receptacles	
Row 2 - Connected load	12000	VA
Row 2 - Demand factor	80	%
Row 2 - Continuous multiplier	100	%
Row 3 - Load label	Stockroom equipment	
Row 3 - Connected load	15000	VA
Row 3 - Demand factor	70	%
Row 3 - Continuous multiplier	100	%
System voltage	480	V
Phase model	Three-phase	

Results

Result	Value	Unit
Connected load	57000	VA
Entered-demand retail load	50100	VA
Continuous-load adder	7500	VA

Commercial Retail Load Calculator

Organize sales-floor, receptacle, and stockroom 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-retail-load-calculator/>

Adjusted retail load	57600	VA
Line current	69.282	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

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

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

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

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

Warnings and limitations

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