Is the building's electrical service adequate for your operations?

Prospective tenants and buyers of manufacturing facilities need to know if the building or suite they are considering has an Electrical Service that meets their needs. A marketing flyer will generally list the service size; which is commonly expressed in amps/volts i.e. 600 amps at 480 volts. Use the tables below to calculate the building load as well as any equipment load and to verify the adequacy of the existing service.

It's as easy as A,B,C

Tables A and B (items 1 through 6) deal with power requirements by square foot, Table C, Items 7 through14 take into account specific loads (client furnished data) and Table D completes the calculation by converting watts back into amps based on the available voltage.

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TABLE A - Lighting calculations

Item #	Power required for lighting (square feet)	Enter S.F.	X	Watts per S.F.	=	Total watts
1	Office or assembly areas		X	1.3	=	
2	High bay		X	1.2	=	
3	Low bay		X	1.0	=	
4	Task lighting		X	1.5	=	
5	Warehouse		X	0.6	=	

Table B - Air conditioning calculations

Item #	Power required for air-conditioning (square feet)	Enter S.F.	X	Watts per S.F.	=	Total watts
6	Space to be conditioned		X	1.3	=	

Table C - Power for specific loads

Item #	Power required for specific loads	Count Each	X	Watts Each.	=	Total watts
7	110v general purpose outlets		**X**	180	=	
8	110v dedicated 20 amp outlets		**X**	1,200	=	
9	20 amp single phase 208 v outlet		**X**	3,328	=	
10	30 amp single phase 208 v outlets		**X**	4.,992	=	
11	50 amp single phase 208 v outlets		**X**	8,320	=	
12	20 amp three phase 208 v outlets		**X**	5,757	=	
13	30 amp three phase 208 v outlet		**X**	8,636	=	
14	50 amp three phase 208 v outlets		**X**	14,393	=	

The last step

You must know the voltage of the existing service, which you've gotten from the
marketing flyer, the meter section in the electrical room or the transformer feeding the subpanel to which loads entered in the above tables will be connected.
Knowing the voltage, take the total of watts and insert it into one of the two empty cells in rows A or B below

	Existing Service	Enter total of watts # 1 through 14 above	Divide by	Divide again by	Total amps required
A	480 volt service		**480**	1.73	**X**
B	208 volt service		**208**	1.73	**X**

The minimum electrical service required for your operation is the product: **X** at the end of either row A or B and is expressed as **X** number of amps at **X** voltage

NOTE: In cases A. and B the service (408volt or 208 volt) is presumed to be three phase. In rare cases the service will be single phase, in which case the calculation skips the step of dividing by 1.73 and consequently the "amps required" result is significantly increased.