
ELECTRICAL SERVICES

From under carpet wiring to overhead lighting, Freeman has the power to simplify your electrical needs and installation. We've answered your most common questions below to help you place your order or prepare for a detailed discussion. Whether you require basic household/office power or a more technical installation for equipment, audio-visual presentations or truss lights, our electrical specialists and qualified electricians are always available to assist you.

How do I know how much power I need?

First, review a layout of your exhibit, noting all of the items in it that require power. Consider lighting, computer equipment, and your own product. Are you bringing or renting any a/v equipment or ordering catering services that might need power? Will you be using a lead retrieval machine? If it's an item that plugs into a standard wall outlet found in a home or office (in North America), it will require 110/120 volt power. 208 or 480 volt power is generally used for machinery or industrial cooking devices and is ordered by single or 3 phase.

Next, mark the voltage and wattage or amperage (referred to as "load") (100 watts = 1 amp) of each piece of equipment at it's location in the booth. This information should be provided on a name plate or stamp usually located on the back or bottom of the equipment. If not indicated, check our accompanying electrical usage guide for estimated wattages for common items used at trade shows or call your rental company/caterer for specifics. For lighting, loads are dictated by the wattage of the bulbs. Arm lights included with Freeman exhibit packages use 200 watt bulbs. Keep in mind that you need to order power for any lighting within your booth unless the lights are ordered directly from the Electrical Department (those listed on the Freeman electrical order form).

Finally, total the wattage for the 120 volt devices in each area and select an outlet that meets or exceeds that total. Separate outlets should be ordered for each piece of equipment and/or each power location to help minimize tripping/power outages. It is always safer to slightly overestimate your power requirements. Wattage or amperages cannot be combined for 208 or 480 volt apparatus. Please order separate outlets for each.

Do I need to order labor?

As the official service contractor, electrical installations must be performed by Freeman union labor. Labor is required for any electrical work over and above the delivery of outlets to the back wall of inline booths. Labor orders will automatically be input upon receipt of an electrical layout for under carpet installation (floor work) or to connect any 208 volt or higher services (hook up). Dismantle labor for electrical services is calculated at 50% of the installation time since much of the work is performed on a mass basis after booths are removed from the exhibit hall. Please see the electrical labor order form for further details, rules and regulations.

What is an electrical layout and why do I need one?

Like your own home, electrical boxes and wiring should not be visible once the exhibit is completed. At show site, they are the first things to be installed so that they can be hidden by drape, walls or counters and under flooring or carpet. Electricians, therefore, work on a blank slate. A good electrical layout or floor plan provides them with a simple overhead view of your booth indicating the locations and load of each electrical outlet and the orientation of your booth within the show itself. The layout should be to scale and provide specific measurements to each outlet along with surrounding aisle or booth numbers to ensure accuracy. For island booths, a main power location must also be indicated as it is the location from which other outlets are fed. Please see the sample layouts and electrical grid for further information.

When a layout and credit card are provided in advance, Freeman makes every effort to ensure that the floor work is completed before you arrive so that there is no delay in assembling your booth. Once carpet is laid, installing or changing electrical services becomes much more difficult and potentially costly.

Please note that layouts, complete with mandatory information, are required prior to the deadline date for electrical orders to be eligible for advance rates. Layouts are not required if all outlets are located at the back wall in inline booths.

Is the price for power per day?

Outlet or connection prices are typically for an entire show.

What is 24 hour power?

Many facilities these days are energy conscious and therefore turn off power overnight during show days. Power is turned off 1/2 hour after the show closes at the earliest and restored no later than 1/2 hour before the show opens the following day. 24 hour power is, as it sounds, power that is continuously on 24 hours per day.

If your booth includes, for example, refrigeration equipment, an aquarium or programmable apparatus that depends on uninterrupted power, you should consider ordering 24 hour service. Power is usually not turned off during move-in or move-out.

Where does the power come from?

Depending on the facility, the power can come from overhead catwalks, floor ports, columns, wall outlets or a combination of these sources. Check with the local Freeman branch office for more information.

Where will my power be located?

In-line and peninsula booths will find their main power source on the floor somewhere along the rear drape line of their booth. Island booths need to submit an electrical layout. Please see the sample layouts and electrical grid for further information.

What if I need power at another location besides the rear of my booth? What if I have multiple power locations?

Exhibitors requiring power at any location other than a back wall must submit an electrical layout. Please see the sample layouts and electrical grid for further information.

How many places will I have to plug in? How many things can I plug in?

For planning purposes, you should always assume that there is only one connection point per outlet ordered. Power strips can provide additional sockets but do not confuse having more places to plug in with additional power. For example – An order is placed for a 500 watt outlet. A track light with 4 – 100 watt bulbs is plugged in to a power strip connected to the outlet, using 400 of the 500 watts. Any lighting or equipment now plugged in to a second socket may not exceed 100 watts.

Also keep in mind that power strips are designed, for safety purposes, to trip at 1500 watts or 15 amps. Using a power strip with a 2000 watt (20 amp) outlet will reduce it to a 1500 watt outlet.

All orders exceeding 120 volt/20 amps provide one connection point only, cannot accommodate power strips and require labor for installation.

F R E E M A N

Can I bring my own extension cords and power strips? (Also known as plug strips, multi strips, etc.)

Exhibitors may use their own extension cords and power strips under the following conditions:

- The equipment must be 3 wire, 14 gauge minimum with a ground.
- The extension cords must be flat if they are to be laid under carpet. (Labor is required to lay the cords.)
- All power strips must have circuit protection.

Can I run my extension cords under the carpet myself?

For safety reasons, exhibitors are not allowed to run any electrical wiring under any type of floor covering or where they may be concealed in the booth structure. The show's electrical contractor is liable for electrical installations and therefore must perform all floor or booth work.

Will my floor work be completed before I arrive?

Every attempt is made to have floor work completed prior to carpet installation if you have submitted the following:

- A completed electrical order form.
- A valid and authorized credit card to be kept on file for the company.
- An electrical layout indicating the main power location, dimensions to each power location, the power required at each location, and surrounding aisle or booth numbers to determine orientation of the booth.

Labor and material charges apply.

When will my power be turned on?

Power is only guaranteed to be installed before the show opens. If Freeman is allowed early access to the facility, power is normally ready the first day of move-in for exhibitors but any special requests such as temporary chain motor power, programming machinery or testing equipment should be noted on your order.

Do I need lighting?

Lighting can dramatically change the impact of an exhibit, no matter the size. Used effectively, lighting can emphasize specific areas of a booth or highlight products. Also, an exhibit will appear dark and uninviting if the surrounding booths are lit and yours is not.

Can I hang my own lights?

10 x 10 booths with pop-up displays (a display that can be assembled in less than 30 minutes without tools) can hang their own lights and plug them in without ordering labor. Typically, exhibitors themselves can hang up to 4 lights as long as they require no more than 20 amps in total but it is best to clarify with the local branch. If a decorating company (including Freeman) has been contracted to install a display, electrical labor is required to install the lights. Due to union contracts, no other union is allowed to install electrical equipment.

Do I need to order power for my lighting?

Exhibitors ordering Electrical Services lighting (those listed on the Freeman electrical order form) do not need to order power. It is included in the rental. Exhibitors supplying their own lighting or renting lights need to order power. Labor may be required to hang the lights.

Do I need to order labor to plug in my lights or equipment?

Most 120 volt connections do not require labor. Exhibitors are welcome to plug in their own standard office devices. Labor is required for all 208 or 480 volt connections and if lights or equipment need wiring or if electrical cords are to be run under the carpet or in concealed areas to ensure that all electrical codes and building rules are met.

How can I save money and frustration when ordering electrical services?

Most importantly, be sure to submit your order before the discount price deadline date. If an electrical layout is needed, it also must be received, complete with mandatory information, before the deadline date to be eligible for discount pricing. Late orders can be subject up to a 50% increase in cost because of the behind-the-scenes planning required to distribute power.

Don't underestimate your power requirements and work within the local rules, regulations and union jurisdictions. They have been implemented to avoid problems. While it may seem simple to plug in lights and equipment, it is not uncommon for exhibit or non electrical staff to overload circuits. Trouble calls can become expensive when it takes time to find the source of a problem.

If unsure about labor, call us for direction and if necessary, place a "will call" order before the discount price deadline date. You will only incur a charge if labor is dispatched to your booth but you'll have secured the advance pricing. And, check in with the electrical or service desk as soon as you know you need labor, not at the time you want the electricians in your booth. It will help to avoid delays as we can schedule accordingly.

Lastly, try to resolve any disputes at show site. It is much easier to discuss electrical issues when both parties can physically review the installation.

Additional questions?

Call customer service at the number listed on the Quick Facts and ask for the Electrical Services Department. For fast, easy ordering, tools, and helpful hints go to www.freemanco.com/store.

FREEMAN

ELECTRICAL SERVICES USAGE GUIDE

The following wattages are approximate and are provided to help you estimate your power usage. To assist in estimating we recommend that you refer to the name plate or stamp usually located on the back or bottom of any electrical apparatus and order the corresponding outlet for each piece of equipment to avoid tripping/power outages during the event.

The formula for wattage is voltage x amperage (120 volt x 1 amp = 120 watts),
 5 - 100 watt light bulbs = (5x100 = 500 watts)

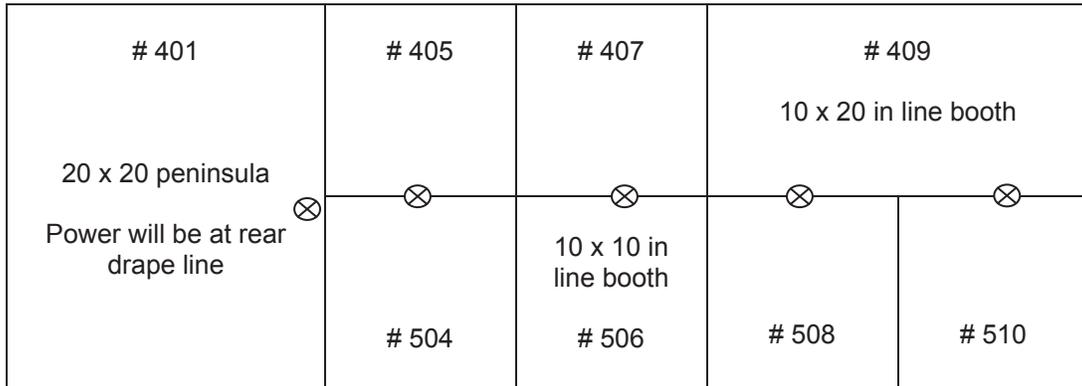
	WATTAGE		WATTAGE
Blender	475-1000	Imprinter for T-Shirts	2000
Can Opener	500	Iron	700-1100
Card Reader (credit) / Lead Retrieval	100	Juicer - Single	500
Cash Register	100-200	Juicer - Double	1000
Coffee Pot - Household Size	600-1200	Laminator	2000
Coffee Pot - Large Brewer	1500-2000	Lights with Freeman Rental Booths	200 each
Computer - Monitor (independent)	120-200	Meat Slicer	500-1000
Computer - Desktop (monitor & CPU)	200-900	Microwave Oven	500-2000
Computer - Laptop	100-300	Mixer	500-1000
Computer Printer - Dot Matrix	100-500	Photocopier	dependent upon size - may require 208 volt
Computer Printer - Laser	400-1000	Pizza Oven (small)	30amp/120 volt Special Connection
Crock Pot	200-1000	Popcorn Maker	2000
DVD Player	50-100	Projector (dependent upon size)	1000
Electric Frying Pan	1200-2000	Refrigerator - Small	400
Fax Machine	1000	Refrigerator - Full Size	750
Flat Screen TV - 32" to 50"	1000	Sewing Machine	1000
Food Processor	500-2000	Steamer	2000
Glue Gun	300	Stereo (amplifier)	100-500
Griddle	1500-2000	Television	100-500
Hair Dryer	1000-2000	Toaster	1000
Heat Lamps (per lamp)	250	Toaster Oven	1500
Heater (portable)	1500-2000	Vacuum Cleaner	1500
Hot Plate Single	1000	VCR	100
Hot Plate Double	1500-2000	Water Cooler - Cold Water	1000
Hot Water Heater	30amp/208 volt/Single Phase	Water Cooler - Hot/Cold Water	2000

FREEMAN electrical services usage guide

SAMPLE LAYOUTS

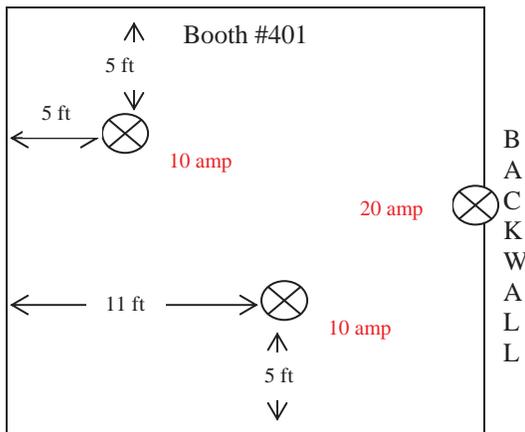
IN LINE BOOTHS

Power is run or dropped to in line booths along the back walls or drape line of multi booth sections. The “main power locations” therefore are always located at the back of in line and peninsula booths. Outlets may not be in the exact center of the back wall. 120 volt outlets are shared by back to back booths. Example: Outlet = 

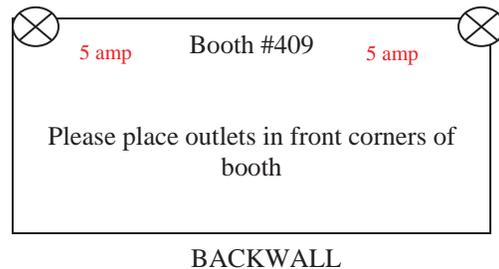


Electrical layouts are required whenever an outlet is needed at any other location within the booth except for the back wall. Exact measurements and/or comments that clearly indicate outlet locations **must be included**. Examples based on above floor plan:

20 x 20 Peninsula – Booth # 401
Order = 2-10 amp, 1-20 amp outlets



10 x 20 In Line – Booth # 409
Order = 2 x 5 amp outlets



ISLAND BOOTHS

Electrical layouts are always required for island booths and **must include** the following information:

1. Main Drop.

Since there is no back wall in an island, the exhibitor supplies the location of the main drop, whether one or multiple outlets are ordered. When it will be the point from which power will be distributed to other outlets in the booth, a panel or other piece of electrical equipment (no larger than? x? x?) will be installed at the main drop. For this reason, it is recommended that main drops be located in a closet, under a table/desk or in another area that keeps it out of sight. Measurements must be provided to the main drop.

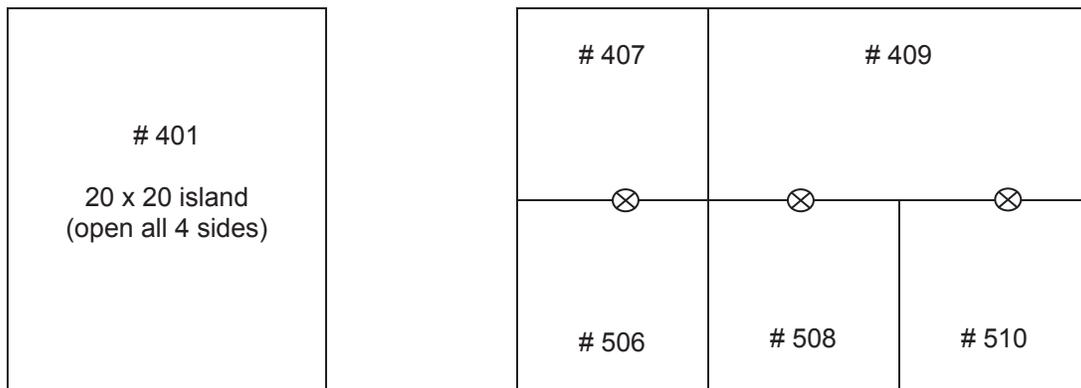
2. Location and load of all outlets.

Again, dimensions must be provided to all satellite outlets along with the load of each outlet. It is best to indicate voltage, phase and amperage for all outlets once an order exceeds 120 volt service.

3. Booth orientation.

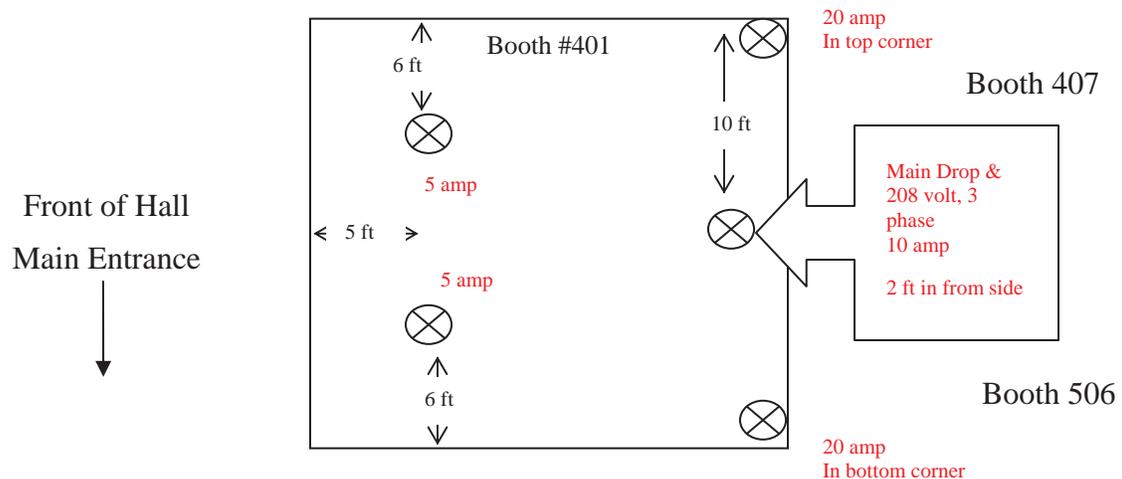
Providing reference points such as surrounding aisle and/or booth numbers defines how an island booth is oriented to the overall show floor plan. In other words, which side is which? It is best to draw your layout relative to the show floor plan so that both are facing the same direction. Examples:

Section of show floor plan



20 x 20 Island – Booth # 401

Order = 1 x 208 volt, 3 phase, 10 amp + 120 volt, 2 x 20 amp + 2 x 5 amp outlets



FREEMAN

245 S. Spruce Ave., Ste. 100
 South San Francisco, CA 94080
 (650) 878-6100 Fax: (469) 621-5607

**DISCOUNT PRICE
 DEADLINE DATE
 NOVEMBER 15, 2019**

**INCLUDE THE FREEMAN METHOD OF
 PAYMENT FORM WITH YOUR ORDER**

NAME OF SHOW: **AGU Fall Meeting 2019 / December 9 - 13, 2019**

COMPANY NAME: _____ BOOTH #: _____ BOOTH SIZE: X _____

CONTACT NAME: _____ PHONE #: _____

E-MAIL ADDRESS: _____

For Assistance, please call (650) 878-6100 to speak with one of our experts.

For, fast, easy ordering, go to www.freeman.com

ELECTRICAL OUTLETS (Double Price for 24 Hour Service)

Power includes delivery of the service to one location at the rear of the booth in peninsula and inline booths. Please see the Electrical Labor order form for rates and instructions if you require outlets in other locations, have lights or electrical items to hang or erect, have orders for power of 208v or higher, or have other electrical requirements.

110/120 VOLT

	Quantity (For Show Hours Only)	Quantity (For 24 hrs/day Double Price)	Discount Price	Standard Price	TOTAL
500 Watts (5 amps)	_____	_____	160.50	240.75	= \$ _____
1000 Watts (10 amps)	_____	_____	278.25	417.40	= \$ _____
2000 Watts (20 amps)	_____	_____	374.50	561.75	= \$ _____

208 VOLT SINGLE PHASE (Labor Required for Connection)

20 Amps	_____	_____	603.00	904.50	= \$ _____
30 Amps	_____	_____	721.75	1,082.65	= \$ _____
60 Amps	_____	_____	944.50	1,416.75	= \$ _____
100 Amps	_____	_____	1,243.50	1,865.25	= \$ _____
200 Amps	_____	_____	1,579.25	2,368.90	= \$ _____

208 VOLT THREE PHASE (Labor Required for Connection)

20 Amps	_____	_____	804.25	1,206.40	= \$ _____
30 Amps	_____	_____	961.75	1,442.65	= \$ _____
60 Amps	_____	_____	1,258.00	1,887.00	= \$ _____
100 Amps	_____	_____	1,656.75	2,485.15	= \$ _____
200 Amps	_____	_____	2,368.50	3,552.75	= \$ _____
400 Amps	_____	_____	3,335.00	5,002.50	= \$ _____

Transformer to Boost 208V to Approx. 230V - \$8.25 per Amp (20 Amp Min.)

Qty of Amps _____ X Price \$ _____ = \$ _____

480 VOLT THREE PHASE (Labor Required for Connection)

20 Amps	_____	_____	965.50	1,448.25	= \$ _____
30 Amps	_____	_____	1,154.75	1,732.15	= \$ _____
60 Amps	_____	_____	1,511.25	2,266.90	= \$ _____
100 Amps	_____	_____	1,986.25	2,979.40	= \$ _____
200 Amps	_____	_____	2,841.25	4,261.90	= \$ _____

LIGHTING (Price Includes Power Consumed)****

Single Light Stand (200w)**	_____	_____	132.00	198.00	= \$ _____
Double Light Stand (400w)**	_____	_____	222.25	333.40	= \$ _____
Arm Light***	_____	_____	163.25	244.90	= \$ _____
Overhead Quartz Light*	_____	_____	884.50	1,326.75	= \$ _____

* May require labor and/or lift at additional charge. Please contact FreemanSanFranciscoES@freeman.com for estimated charges.

** For single or double light stand; price includes installation along the side rails of an inline booth. Placement elsewhere will require additional labor and materials.

*** Requires a hard wall surface for installation.

Extension cords and power strips are available for rental at the Freeman Service Center
 ****Applicable sales tax applies to all Lighting orders.

11/17 (464872) 19-20 SF Primary(r)

ADDITIONAL INFORMATION

FOR ADVANCE PAYMENT PRICE

Your order with full payment along with a floor plan indicating main power location and distribution points, if applicable, must be received prior to:

**DEADLINE DATE OF:
 NOVEMBER 15, 2019**

MULTIPLE OUTLET LOCATIONS / ISLAND BOOTHS

A scaled floor plan is required for orders with multiple outlet locations and/or island booths. Detailed examples are provided on the following page. If a power location or main drop in an island booth is not provided prior to show move-in, a location will be determined by Freeman in order to maintain delivery schedules. Relocation of the service will be charged on a time and material basis.

ISLAND BOOTHS

For island booths with no labor ordered, there is a 1/2 hour minimum installation charge and a 1/2 hour minimum dismantle charge.

INLINE AND PENINSULA BOOTHS

Power will be placed in the back of the booth unless otherwise specified.

24 HOUR SERVICES

If an uninterrupted power supply is required for the full duration of the show, please order 24 hour power. Electricity is turned on 30 minutes prior to show opening and turned off 30 minutes after show closes on show days. Power will be turned off immediately after final show closing. If you require power outside actual show hours, special arrangements should be made in advance. Additional charges may apply.

SEPARATE OUTLETS

Separate outlets should be ordered for each piece of equipment and/or each power location.

HANGING SIGNS

Show site prices will apply if your hanging sign is not received in advance at the warehouse prior to the warehouse shipping deadline date.

CANCELLATION

A 50% refund will be applied to electrical services cancelled after installation. Refunds will not be issued for materials and/or labor charges related to the installation.

OVERHEAD POWER

If you require your power from overhead, additional materials and labor may be incurred. Please contact FreemanSanFranciscoES@freeman.com.

TOTAL COST

Outlet(s)	\$ _____
Lighting	\$ _____
Tax	\$ N/A
GRAND TOTAL	\$ _____

FREEMAN electrical

ELECTRICAL INSTRUCTIONS

HOW TO DETERMINE ELECTRICAL REQUIREMENTS

For Equipment

All electrical equipment is stamped or labeled with electrical ratings usually found on the back or bottom of the equipment. Verify voltage and either amperage or wattage from the information provided. Standard office and household items operate on 110/120 volt power. Machinery and equipment typically require 208 or 480 volt power.

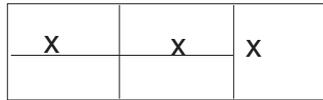
For Lighting

Verify the wattage of the bulbs in the lights and multiply by the number of bulbs/lights.

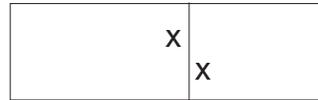
LOCATION OF POWER IN YOUR BOOTH

In-Line and Peninsula Booths

Power will be installed in one location, typically on the floor somewhere along the back of the booth, as indicated in the following diagrams: (We cannot guarantee that the outlet will be specifically located in the middle.)



IN-LINE BOOTHS / PENINSULA

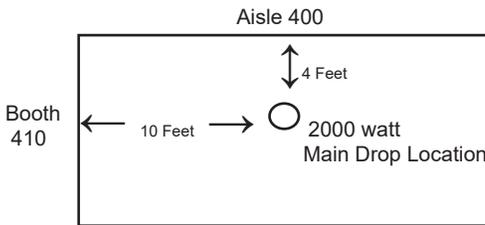


BACK TO BACK PENINSULA

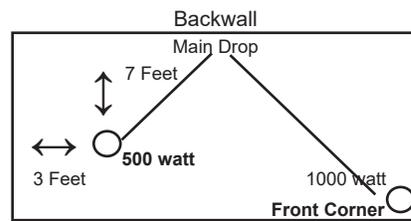
If power is required in locations other than indicated above, secondary distribution will be required and billed on a time and material basis. Please complete and submit an Electrical Labor Order Form with your power order, along with a floor plan as described below.

Island Booths/Multiple Outlets

Floor plans are always required for Island Booths and orders for multiple outlet locations. The floor plan must indicate booth dimensions, surrounding booth numbers for orientation within the facility, each outlet location, required wattage or amperage and location for main drop. If power location in an island booth is not provided prior to show move-in, a location will be determined by Freeman in order to maintain delivery schedules. Relocation of the service will be charged on a time and material basis. See examples below: A grid is available at freemanco.com to print as a base layout.



Island Booth with one outlet



10 X 20 Booth with multiple outlets
Labor Required

OTHER:

1. Labor is required for any and all electrical work over and above the installation of the main power drop. Please see the Electrical Labor form for complete details. Please complete the labor order form.
2. Dismantle labor will be automatically charged at 50% of the installation time and rounded to the nearest half hour.
3. All material and equipment provided by Freeman is for rental purposes only and remains the property of Freeman. All equipment will be removed at the close of the show by Freeman.
4. All equipment regardless of power source, must comply with Federal, State and local codes as well as any applicable local recognized electrical authorities and standards. Freeman reserves the right to inspect all electrical devices and connections to ensure compliance with all codes and proper permitting. Freeman is required to refuse connections where the exhibitor wiring is not in accordance with local electrical code and permitting.
5. Standard wall and other permanent building utility outlets or sockets are not part of booth space and may not be used by exhibitors unless electrical services have been ordered.
6. Exhibitors' cords must be a minimum of 14 gauge 3 wire with ground and must be flat when used for floorwork. All multi-outlet devices (eg - power strips) must have circuit protection. All exposed non-current carrying metal parts of fixed equipment, which are liable to be energized, shall be grounded.
7. Exhibitor' equipment will be modified to conform to Freeman receptacles. If an outage is the result of an exhibitors' equipment, then a labor charge may be assessed. Labor and materials to install or change a cord cap or fix an outage will be billed on a time and material basis.
8. Exhibitors with hardwall displays must arrange for power to be installed inside the booth or provide access.
9. Power sharing is not permitted between exhibitors.