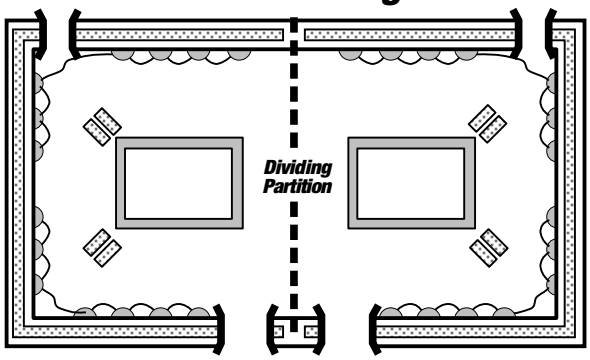
Necessary Information for Design

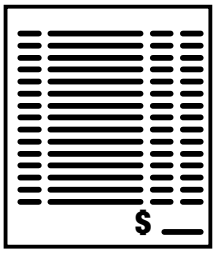
Reflected Ceiling Plan



Dimming System Schedule

ROOM NAME	SLIDER NUMBER	CIRCUIT NAME	CIRCUIT NUMBER	CIRCUIT WATTAGE	CONTROL STATIONS
Pacific Conference Room	1	NW Wall Sconces	C - 1	7x100W = 700W	SW Corner - Master station for West half of room. - 6 sliders & ALL ON/OFF. - #4: Fluorescent lamps. No Dimming, ON/OFF only. NW Corner - Convenience station for service entrance. - ALL ON/OFF, no sliders. SE Corner - Master station for West half of room. - 6 sliders & ALL ON/OFF. - #4: Fluorescent lamps. No Dimming, ON/OFF only. NE Corner - Convenience station for service entrance. - ALL ON/OFF, no sliders. North Wall by Divider - Key operated room dividing switch. - In divider open position sliders 1, 2, 3, 4 are linked together. - Sliders 5 & 6 are unaffected by dividing key switch. - In divider closed position, sliders only operate the half of the room they are located in.
West Room	1	SW Wall Sconces	C - 3	7x100W = 700W	
	2	W Chand Uplights	C - 5	4x200W = 800W	
	3	W Chand Downlights	C - 7	8x100W = 800W	
	4 ON/OFF	W Cove Uplights	C - 9	30x40W = 1200W	
	5	NW Spot Lights	C - 11	2x250W = 500W	
	6	SW Spot Lights	C - 13	2x250W = 500W	
Pacific Conference Room	1	NE Wall Sconces	C - 2	7x100W = 700W	
East Room	1	SE Wall Sconces	C - 4	7x100W = 700W	
	2	E Chand Uplights	C - 6	4x200W = 800W	
	3	E Chand Downlights	C - 8	8x100W = 800W	
	4 ON/OFF	E Cove Uplights	C - 10	30x40W = 1200W	
	5	NE Spot Lights	C - 12	2x250W = 500W	
	6	SE Spot Lights	C - 14	2x250W = 500W	

Materials List & Quotation



INFORMATION REQUIRED TO DESIGN & QUOTE A DIMMING SYSTEM

- To design and specify a Dimming System so a price can be determined, your inclusion of the following critical information in the *Dimming System Schedule* is necessary:
  - -Room Names
  - -Slider Numbers
  - -Lighting Circuits controlled by each Slider
  - -Wattage & Circuit Number for each Lighting Circuit
  - -Control Station List
- Use a *Reflected Ceiling Plan* to help make up the Schedule. Then use the following three steps to make up a Dimming System Schedule:
  - ***-STEP 1: List Rooms and Sliders***
  - ***-STEP 2: List Circuit Information***
  - ***-STEP 3: List Control Stations in Each Room***
- The Dimming System Schedule, once completed, will provide all of the information necessary to prepare a detailed bill of materials. The control stations will be listed on the Schedule and the lighting circuit information provided on the Schedule will be used to determine the dimmers and dimmer panels.
- Should you wish to determine the dimmers and panels yourself, complete Step 4:
  - ***-STEP 4: Determine Dimmers and Panels***
- For rough budgeting purposes, Step 4 is useful. However, for quotation purposes, we recommend that you take advantage of our sales staff to help determine an accurate bill of material. Our sales staff will review your schedule and will provide materials listing and pricing.
- If you would like assistance in making up a Dimming System Schedule for your project, please contact us and we will have our local representative visit and assist you with the Schedule.

  Our factory fax number is **(604) 873-6939**

  Our factory phone number is **(604) 873-2797**

STEP 1
List Rooms and their Slider Numbers

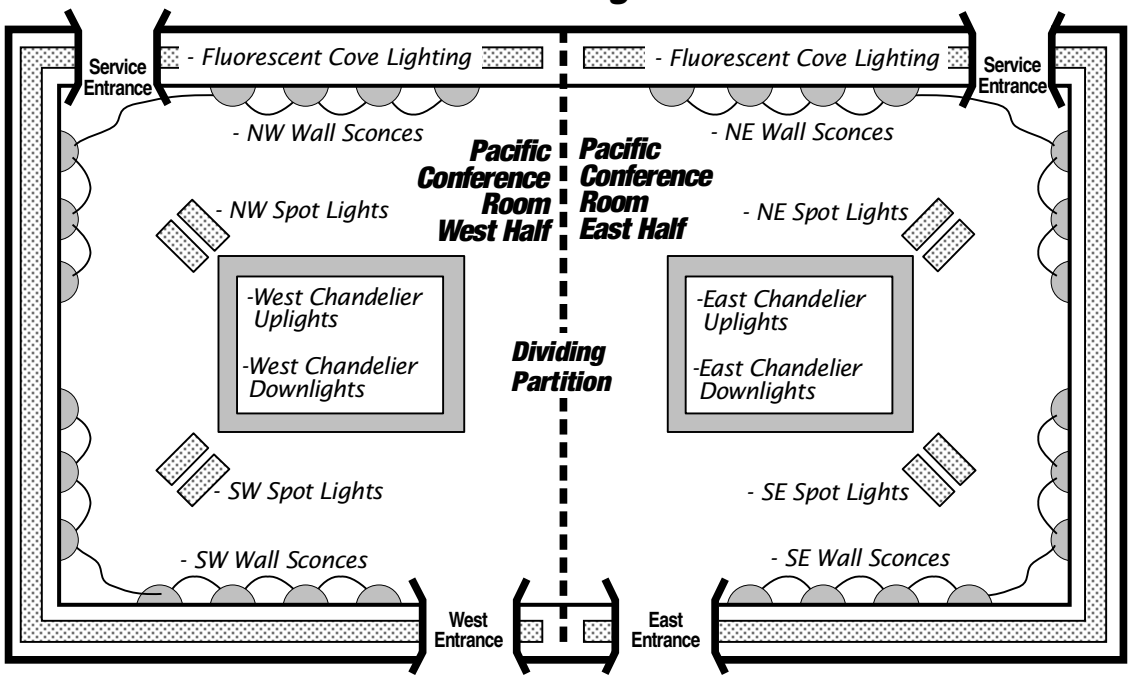
ROOM NAME	SLIDER NUMBER	CIRCUIT NAME
Pacific Conference Room West Half	1	NW Wall Sconces
	1	SW Wall Sconces
	2	W Chand Uplights
	3	W Chand Downlights
	4 ON/OFF	W Cove Uplights
	5	NW Spot Lights
	6	SW Spot Lights
Pacific Conference Room East Half	1	NE Wall Sconces
	1	SE Wall Sconces
	2	E Chand Uplights

STEP 1: LIST ROOMS & SLIDERS IN EACH ROOM

- Use a reflected ceiling plan (example shown below) to help make a list including EACH room.
- For each of the rooms, list the sliders required to control the lights within the room. Often, it is helpful to combine this step with Step 2 (List Lighting Circuits & Wattages). Write down the slider number and list the circuit(s) that will be controlled by that slider.
- SPECIAL NOTE: Dividable Rooms

  If a room can be divided, consider each division to be a separate room. For example, a room dividable into a west half and an east half -like in the *Reflected Ceiling Plan* shown below- would have each half counted as a separate room in the room list.

Reflected Ceiling Plan



STEP 2: LIST LIGHTING CIRCUITS and THEIR WATTAGES

STEP 1
List Rooms and their Slider Numbers

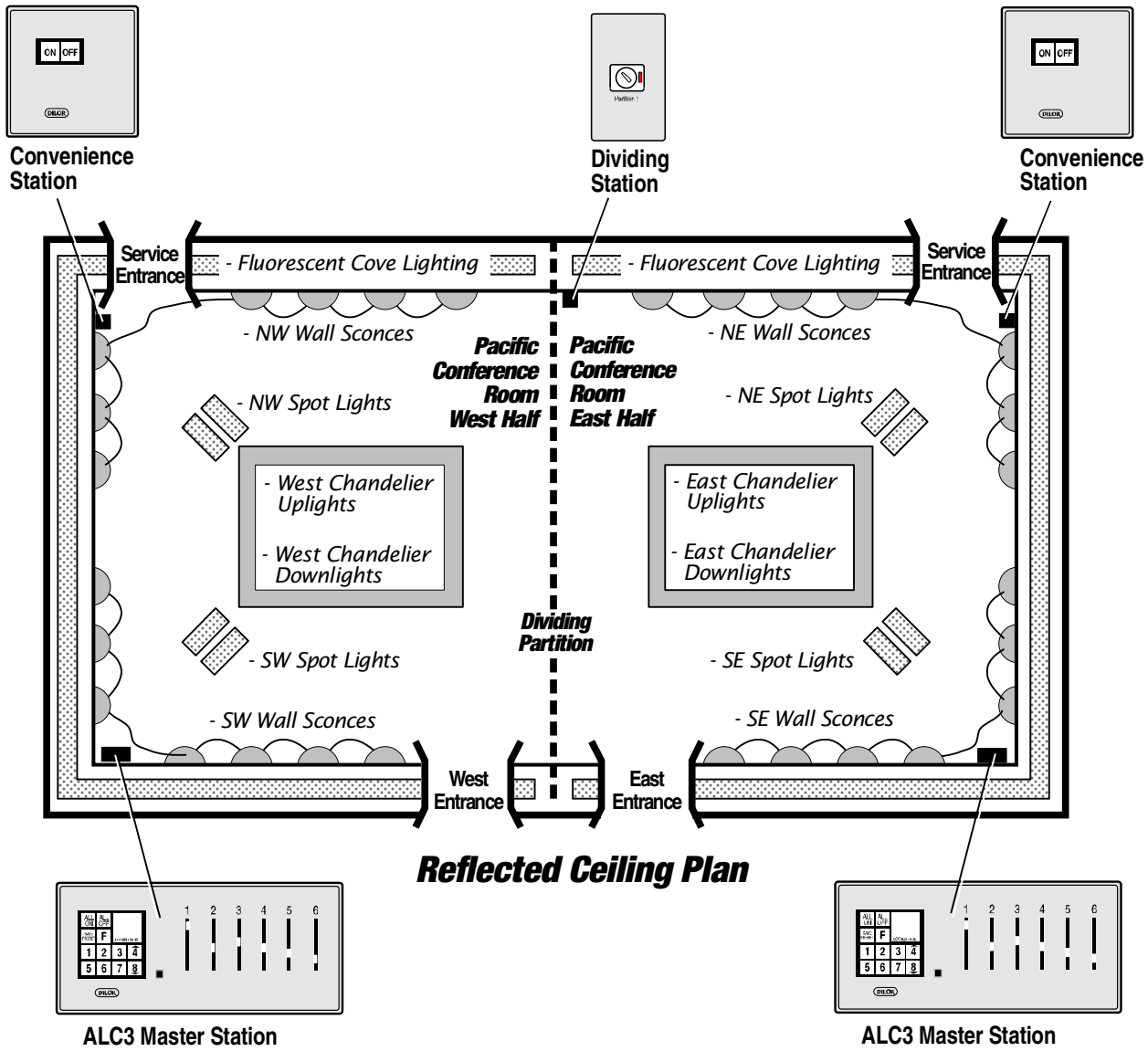
STEP 2
List Lighting Circuits and their Wattages

ROOM NAME	SLIDER NUMBER	CIRCUIT NAME	CIRCUIT NUMBER	CIRCUIT WATTAGE
Pacific Conference Room West Half	1	NW Wall Sconces	C - 1	7x100W = 700W
	1	SW Wall Sconces	C - 3	7x100W = 700W
	2	W Chand Uplights	C - 5	4x200W = 800W
	3	W Chand Downlights	C - 7	8x100W = 800W
	4 ON/OFF	W Cove Uplights	C - 9	30x40W = 1200W
	5	NW Spot Lights	C - 11	2x250W = 500W
	6	SW Spot Lights	C - 13	2x250W = 500W
Pacific Conference Room East Half	1	NE Wall Sconces	C - 2	7x100W = 700W
	1	SE Wall Sconces	C - 4	7x100W = 700W
	2	E Chand Uplights	C - 6	4x200W = 800W

- The process of listing the circuits usually occurs with STEP 1 (listing the rooms and their sliders). Check over the circuit list to ensure accuracy and list circuit numbers if any have been previously determined.
- Dilor Dimmers are designed to operate any incandescent, low voltage incandescent (eg: MR-16s), neon or cold cathode lamps.
- Special applications are flourescent or ON/OFF ONLY circuit control. If this is required for a circuit it must be specified so the dimmer modules or conrol electronics will be specified to to suit the special application(s).
- The actual wattage of each circuit is important to note for dimmer sizing. List the wattage for each lamp and multiply by the number of lamps to determine the total wattage.
- A standard lighting circuit is usually protected by either a 20A or a 15A branch circuit breaker. Electical Code specifies that a branch circuit is to be loaded at no more than 80% of the circuit breaker's rating. Therefore, with a 20A breaker, the largest current allowed would be (20A) x (0.8) = 16 amps. Multiply current by voltage to obtain wattage. The limit in watts for a 20A breaker is (16A) x (120V) = 1980 watts. For a 15A breaker, the same type of calculation yields 12 amps and 1440 watts.
- If the wattage of the lighting circuit exceeds the allowed capacity of the breaker, split up the circuit up. The resulting circuit splits will then have to be dimmed as a group.

STEP 3: LIST CONTROL STATIONS

- Study the reflected floor plan of the rooms and mark the location of each of the control stations. Issues such as what the room is used for and where the control station is relative to the occupants will need consideration.
- Once the control stations and their locations have been determined, add this information to the Dimming System Schedule, as shown in the example on the next page.



DIMMING SYSTEM SCHEDULE

- A complete Dimming System Schedule, using the 3 steps shown in the preceding pages, is shown below.
- Once completed, fax a copy of the schedule to your local sales representative. The schedule will be used to size and specify the Dimmers and the Dimmer Panels. Once this is done, a bill of materials and price list can be determined.

STEP 1 List Rooms and their Slider Numbers		STEP 2 List Lighting Circuits and their Wattages			STEP 3 List Control Stations in each Room
ROOM NAME	**SLIDER NUMBER**	**CIRCUIT NAME**	**CIRCUIT NUMBER**	**CIRCUIT WATTAGE**	**CONTROL STATIONS**
Pacific Conference Room West Half	*1*	*NW Wall Sconces*	*C - 1*	*7x100W = 700W*	*SW Corner* *- Master Station for West half of room.* *- 6 sliders & ALL ON/OFF.* *- #4: Fluorescent lamps. No dimming, ON/OFF only.*
	1	*SW Wall Sconces*	*C - 3*	*7x100W = 700W*	
	2	*W Chand Uplights*	*C - 5*	*4x200W = 800W*	
	3	*W Chand Downlights*	*C - 7*	*8x100W = 800W*	
	4 ON/OFF	*W Cove Uplights*	*C - 9*	*30x40W = 1200W*	
	5	*NW Spot Lights*	*C - 11*	*2x250W = 500W*	*NW Corner* *- Convenience Station for service entrance.* *- ALL ON/OFF, no sliders.*
	6	*SW Spot Lights*	*C - 13*	*2x250W = 500W*	
Pacific Conference Room East Half	*1*	*NE Wall Sconces*	*C - 2*	*7x100W = 700W*	*SE Corner* *- Master Station for East half of room.* *- 6 sliders & ALL ON/OFF.* *- #4: Fluorescent lamps. No dimming, ON/OFF only.*
	1	*SE Wall Sconces*	*C - 4*	*7x100W = 700W*	
	2	*E Chand Uplights*	*C - 6*	*4x200W = 800W*	
	3	*W Chand Downlights*	*C - 8*	*8x100W = 800W*	
	4 ON/OFF	*W Cove Uplights*	*C - 10*	*30x40W = 1200W*	
	5	*NE Spot Lights*	*C - 12*	*2x250W = 500W*	*NE Corner* *- Convenience Station for service entrance.* *- ALL ON/OFF, no sliders.*
	6	*SE Spot Lights*	*C - 14*	*2x250W = 500W*	
					North Wall by Divider *- Key operated room dividing switch.* *- In divider open position, sliders 1, 2, 3 & 4 are linked together. Sliders 5 & 6 are unaffected by dividing key switch.* *- In divider closed position, sliders only operate the half of the room they are located in.*

Sample Dimming System Schedule

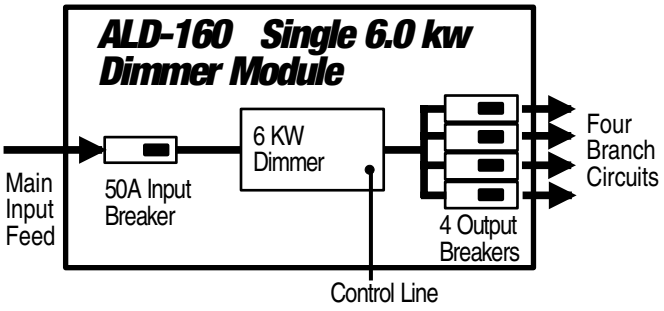
DILOR

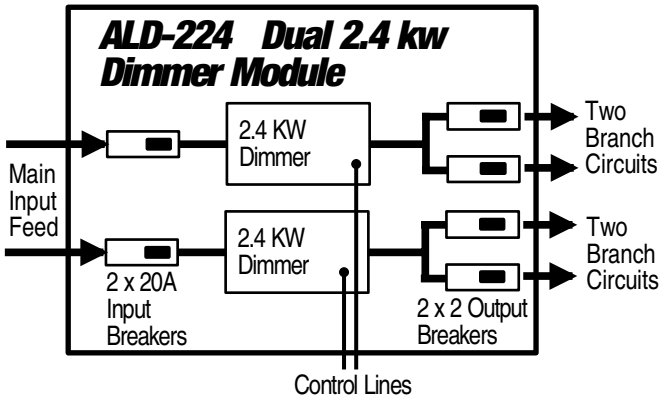
STEP 1
List Rooms and their Slider Numbers

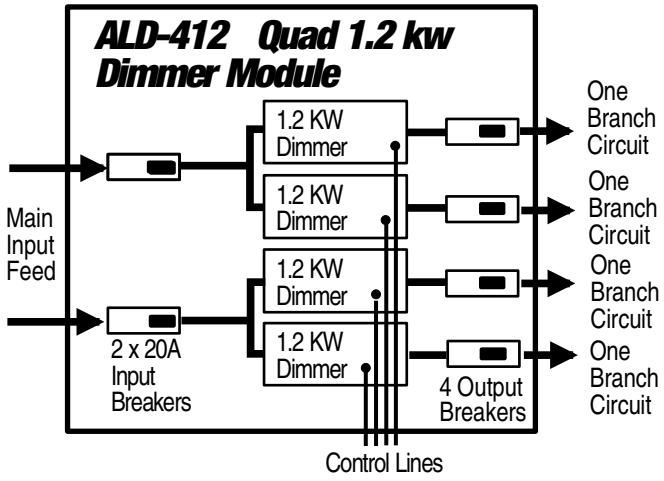
STEP 2
List Lighting Circuits and their Wattages

STEP 3
List Control Stations in each Room

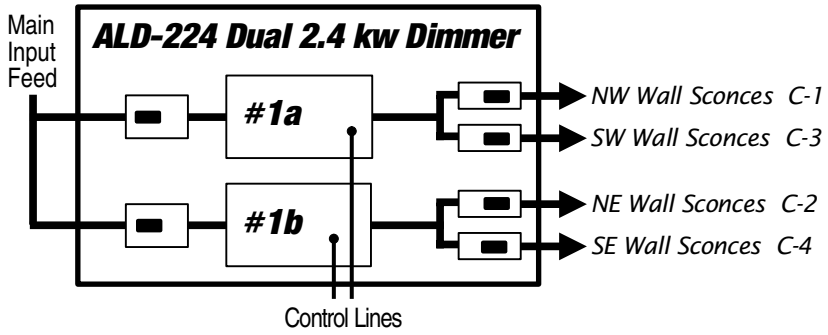
ROOM NAME	SLIDER NUMBER	CIRCUIT NAME	CIRCUIT NUMBER	CIRCUIT WATTAGE	CONTROL STATIONS







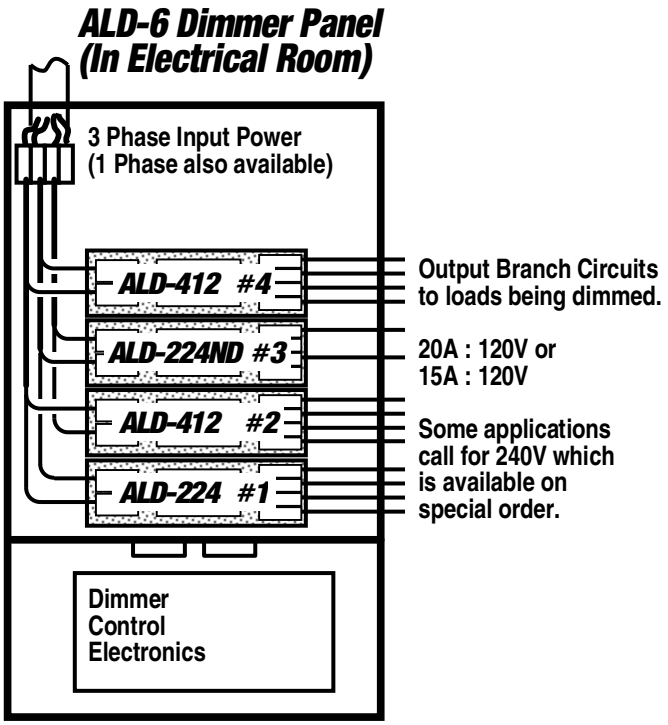
Sample Schematic for Pacific Conference Room Dimmer Module #1



SELECTION OF ALD DIMMER MODULES

- The Dimming System Schedule is necessary for determining which dimmers to use. For an accurate quotation, it is recommended that this step be verified or done by the factory.
- There are three different types of ALD Dimmers. The illustrations to the left show the schematics of the dimmers.
- Larger dimmers can support multiple branch circuits. This feature can be exploited to provide a low cost method of dimming several circuits with one dimmer.
- If several dimmers or dimmer modules are necessary to operate a group of circuits with one slider, the dimmers or dimmer modules can be electronically patched together so that the slider dims all the circuits together. (A typical application is dividable rooms.)
- ALD Dimmers are suitable for all incandescent, low-voltage, neon and cold cathode lamps.
- For flourescent lamp applications, the standard ALD Dimmers are not suitable. However, non-dim ALD Modules are available for ON/OFF control of flourescent lamps. Also, for flourescent lamp dimming applications, a Dilor electronic module can be provided for controlling flourescent dimming ballasts. This allows both incandescent and flourescent lamps to be controlled by the same Dilor Dimmer Panel.
- All of the branch circuit loads cannot exceed 1980W for 20A breaker applications (1440W for 15A breakers). When ONE dimmer is supplying several branch circuits, the total amperage or wattage of the branch circuits cannot exceed the rating of the dimmer.
- At the bottom left is a sample dimmer module schematic for the Pacific Conference Room example.

Design Step 4b (Optional)



SELECTION OF ALD DIMMER PANELS

- The Dimming System Schedule for the Pacific Conference Room example is reproduced below. The dimmer modules have been assigned and are marked at the right of the schedule.
- Note how all of the loads are within the limits for a branch circuit. Also note that the sum of the loads connected to a dimmer do not exceed the dimmer's rating.
- An ALD-6 Dimmer Panel (shown at the left) can house up to 6 dimmer modules.
- An ALD-12 Dimmer Panel (not shown) can house up to 12 dimmer modules.
- For the Pacific Room Example, 4 dimming modules are required. They are installed in an ALD-6 Panel, as shown at the left. The input wiring is done at the factory with consideration for phase balancing.

Dimming System Schedule - Pacific Conference Room

ROOM NAME	SLIDER NUMBER	CIRCUIT NAME	CIRCUIT NUMBER	CIRCUIT WATTAGE	
Pacific Conference Room West Half	1	NW Wall Sconces	C - 1	7x100W = 700W	ALD-224 #1a
	1	SW Wall Sconces	C - 3	7x100W = 700W	
	2	W Chand Uplights	C - 5	4x200W = 800W	ALD-412 #2a
	3	W Chand Downlights	C - 7	8x100W = 800W	ALD-412 #2b
	4 ON/OFF	W Cove Uplights	C - 9	30x40W = 1200W	ALD-224ND #3a
	5	NW Spot Lights	C - 11	2x250W = 500W	ALD-412 #4a
	6	SW Spot Lights	C - 13	2x250W = 500W	ALD-412 #4b
Pacific Conference Room East Half	1	NE Wall Sconces	C - 2	7x100W = 700W	ALD-224 #1b
	1	SE Wall Sconces	C - 4	7x100W = 700W	
	2	E Chand Uplights	C - 6	4x200W = 800W	ALD-412 #2c
	3	W Chand Downlights	C - 8	8x100W = 800W	ALD-412 #2d
	4 ON/OFF	W Cove Uplights	C - 10	30x40W = 1200W	ALD-224ND #3b
	5	NE Spot Lights	C - 12	2x250W = 500W	ALD-412 #4c
	6	SE Spot Lights	C - 14	2x250W = 500W	ALD-412 #4d