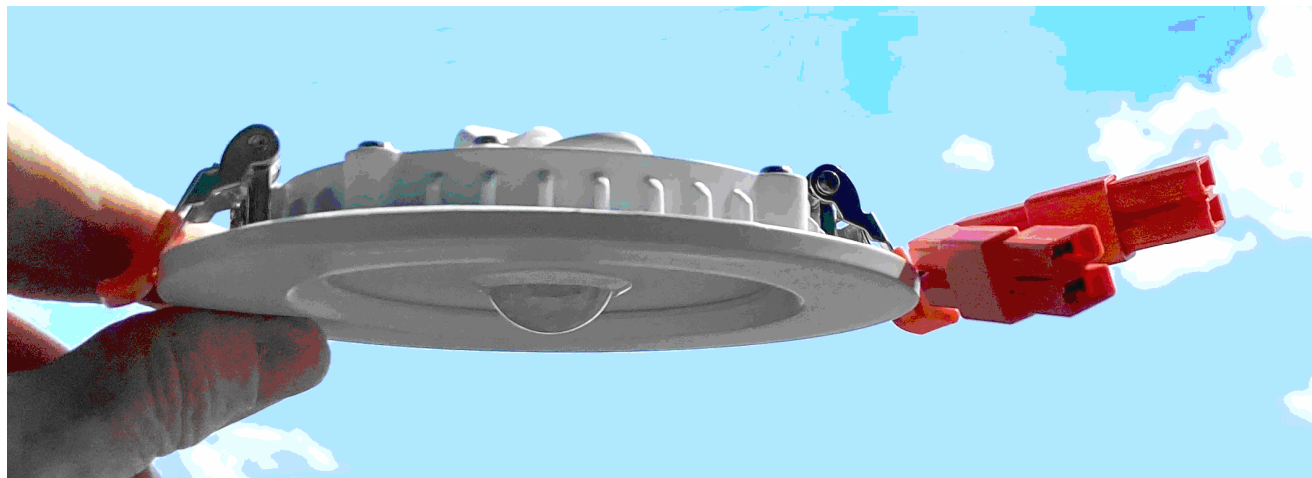




<http://atx-led.com>

P023R6 Motion LED Fixture
Low Voltage dimmable
Ambient Light feature

P023R6 series, CC and CL
ETL 5005242 (UL 1598 std)
Bright LEDs, Cool Operation



Product Description - low profile Motion LED fixture

Technical specifications

	CC models (Current controlled dimming)	CV Models (Voltage dimming)
Motion Detection	PIR – fixed sensitivity	PIR – fixed sensitivity
Ambient Light	Will not turn on if there is enough ambient light	Will not turn on if there is enough ambient light
Wattage	6 watts internal, 24 watts external	6 Watts internal, 42 watts external
Dimming Range	0 to 100%, flicker free	5% to 100%, flicker free
Lumens / CRI	600 lumen / CRI 90	540 lumen / CRI 90
Color Temperature	6 fixed options available plus tunable white	3 Fixed options
Operating Current / Voltage	7.5 to 9.0 volts @ 660 mA use current limited driver	46-52v @ 125 mA internal limit use voltage limited driver
Recommended wiring	1 series mode controls up to 3 non-motion fixtures in fixed or Tunable	1 parallel model connects to up to 7 non-motion fixtures
Wall Switch type	AL-WS-DR2 or AL-WS-DR1	simple On/Off switch
Operating Temperature	Ceiling mount, -20 to 50 Deg C	Ceiling mount, -20 to 50 Deg C
IP Rating	Suitable for Damp environments	Suitable for Damp environments
IC Rated	Yes, with our without the AL-CBOX4	Yes, with our without the AL-CBOX4
LM-80 tested	10,000 hours	10,000 hours
LED type	2835 long life	2835 long life

[Installation Notes](#)

[Trouble shooting tips](#)

[Ambient Light Sensor](#)

The fixture will not turn on if there is “ample” light already in the room. For testing purposes, please use a darkened room.

[Tunable White installations](#)

The fixture will leave the Cool LEDs on continuously, until the DR2 is configured for PIR + CCT mode.

[Motion Sensing with On/Off switches](#)

Use the 52v model with a simple On/Off switch and a 48v to 54v power supply. No driver is required with the 52v models. Up to 1 amp of load can be connected.

Motion Sensing with AL-WS-DR2 smart switches

With an AL-WS-DR2, fw66 or later, motion can be detected and can also will signal motion to the DALI bus. The attached LEDs will be on with motion at low ambient light, and automatically go off after a delay. If the DR2 output is OFF – motion is not detected – the DR2 must be ON for this to work.

When the N-Way mode is set to PIR, the following changes occur to the N-Way operation: The N-Way input is disconnected from the main On/Off momentary function. If a 2nd DALI address is assigned, On/Off/Motion/Dimming packets will be sent via the 2nd address.

The main switch will cause DALI On/Off/Dimming packet to be sent on the normal address in all cases.

N-Way “PIR mode” enables these functions

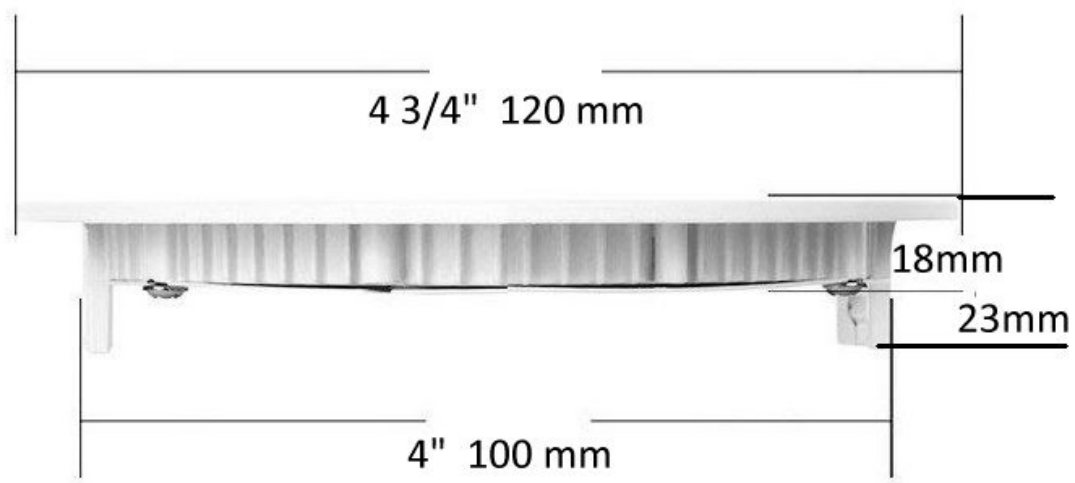
- Driver mode – ALL Fixed: (P023R6-M-660mA)
With the AL-WS-DR2 in ALL Fixed mode, both outputs with up to 10 lights will be controlled by the main switch, by motion, or by the DALI normal address. The Motion sensing LED is only connected to cool. The DALI bus 2nd address will be updated with Motion events, or by pressing the N-Way button – see the list of 2nd address functions in the AL-WS-DR2 data sheet. The LEDs attached to Warm can be ON when there is no motion – set the System Fail level to be your 24/7 brightness requirement.
- Driver mode – Split:
With the AL-WS-DR2 in Split mode, the Cool LED output is controlled by motion, the main switch, or the DALI normal AL-WS-DR2 short address. The DALI Motion On/Off packets will be sent using command 271, followed by device DALI address + 64 (off) or +128 (on). The Warm LED output will be controlled by the N-Way switch or 2nd DALI address without linkage to motion.
- CCT mode
With the AL-WS-DR2 in CCT mode, the LEDs will be controlled by the main switch, by motion, or by the DALI normal address. When no motion is detected, the AL-WS-DR2 maintains 50% of LED Vf on Cool, this powers the sensor, but not the LED, and Warm open circuit with a low current. Upon motion, the DR2 senses a voltage drop on Warm from the open circuit voltage, it then turns current up on both Warm and Cool to full, then off again once the load times out. The LEDs attached to Cool can be ON when there is no motion – set the System Fail level to be your 24/7 brightness requirement.
- Driver mode – Fan+Light
In AL-WS-DR2 “Fan+Light” mode, a fan was detected on the Warm output. The Cool LED output is motion controlled, main switch controlled, and DALI controlled using the DR2 normal address. The Fan is connected on the Warm output and is in Follow mode – fan follows the Motion light, or the N-Way switch. Requires firmware update to version 70 or later

N-Way mode “Special PIR” allows the Warm side driver to be always on at a low light level, then bump to full brightness if motion is detected on the Cool side. Contact ATX for more info.

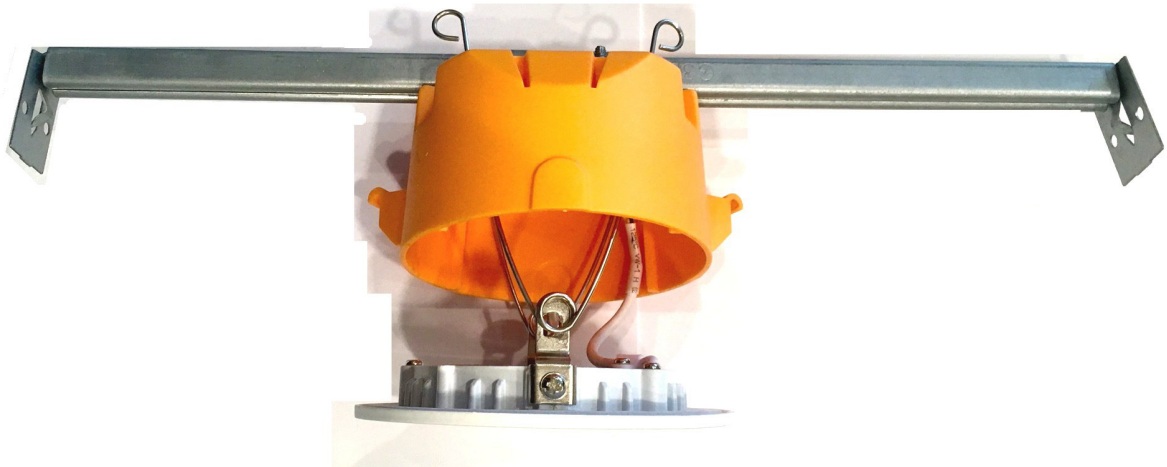
Direct Sheetrock / Wood mounting option



Mounting Option – direct to sheetrock



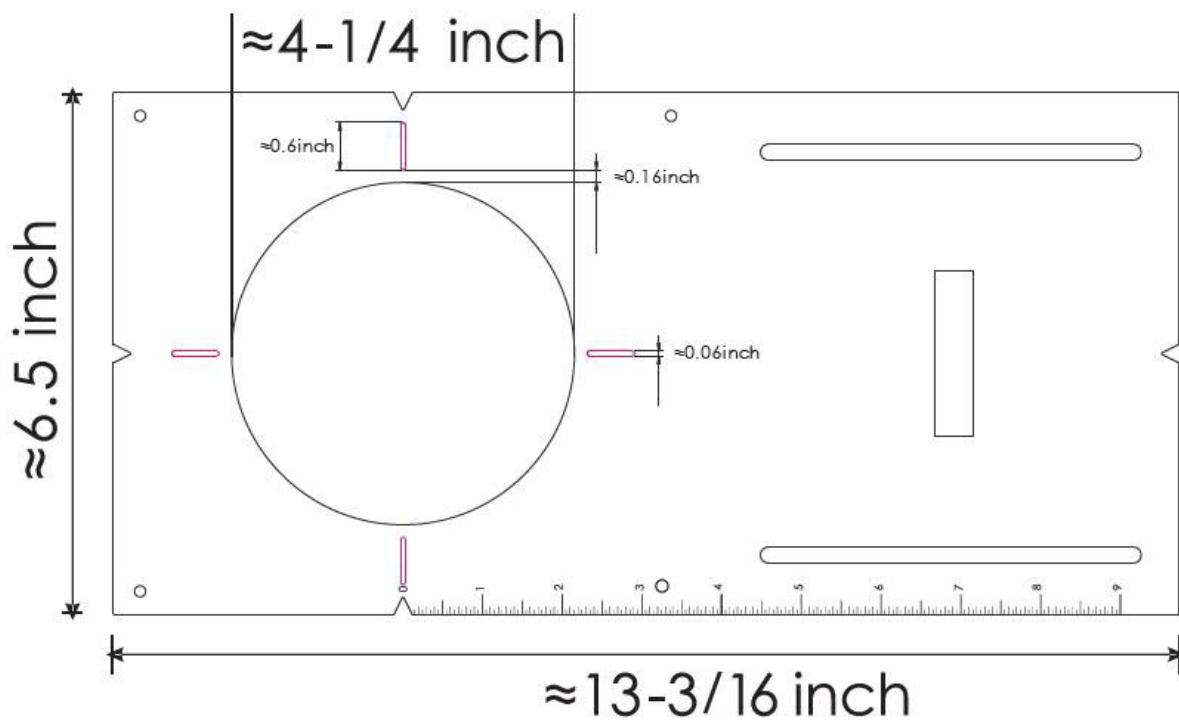
AL-CBOX4 ceiling box mount Option



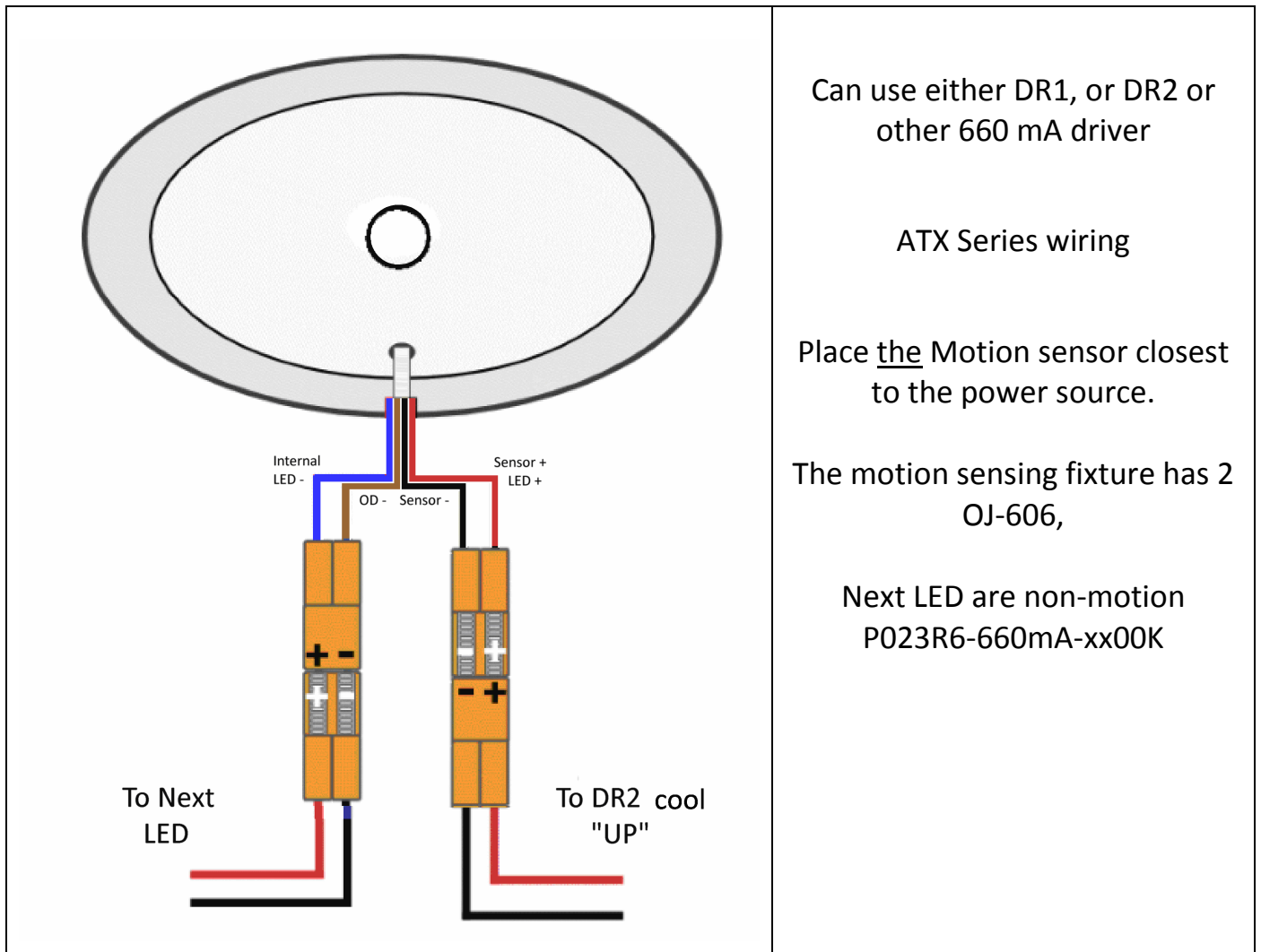
AL-CBOX4 mounting hanger bar

16 to 24 inch joist spacing
Supports up to 20 lbs
Flat or vertical truss attachment
See [AL-CBOX4.pdf](#)

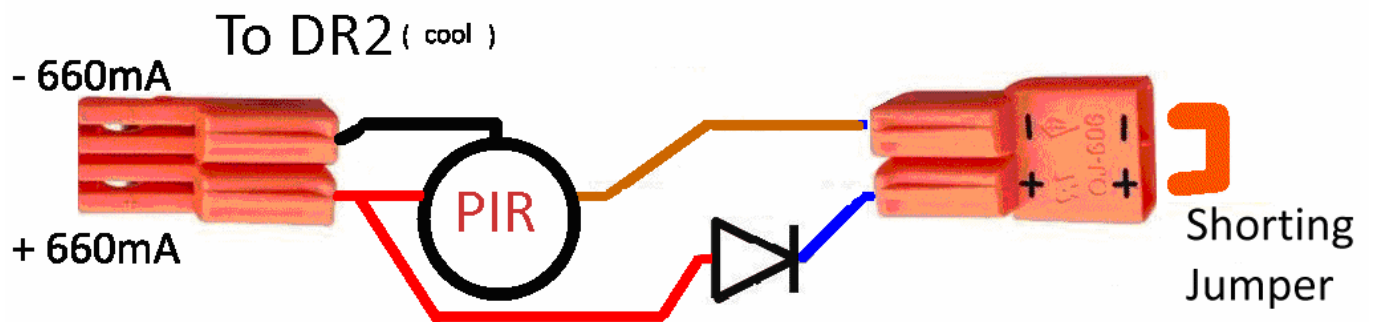
Metal Plate mount Option



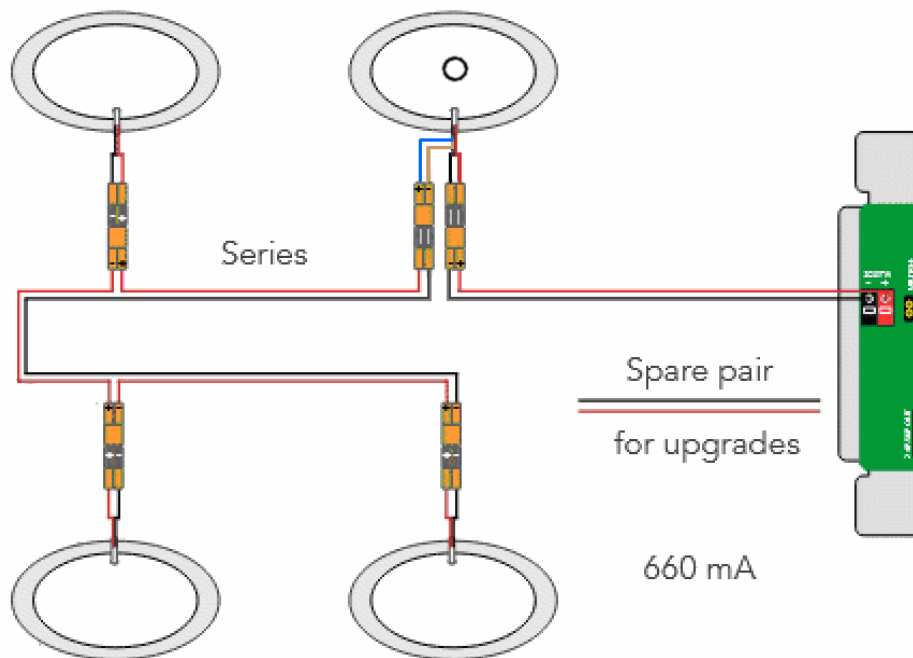
P023R6-M-660mA-xx00K - Wiring example



Single Fixture Wiring



P023R6-M-660mA-xx00K - Multi Fixture

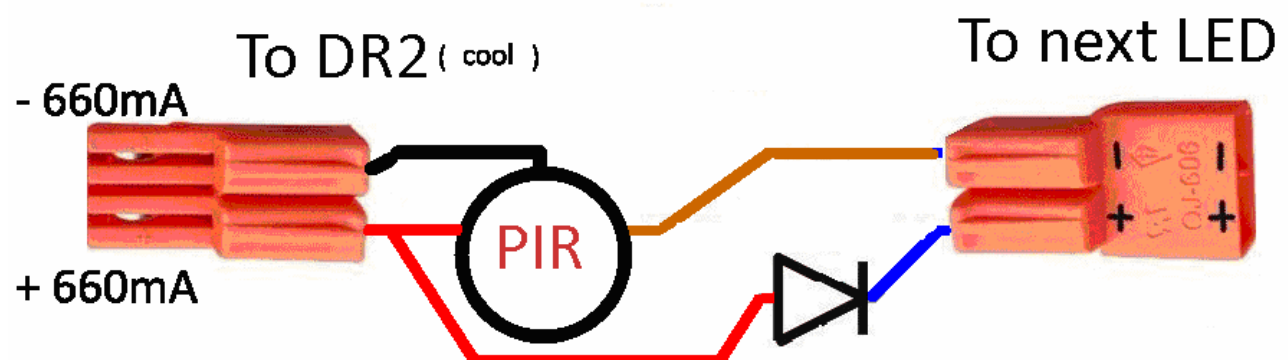


Series Wiring

The AL-WS-DR2, keeps cool power on at all times at under 30 mA, it detects voltage drop on cool, and goes to full power until timeout is detected by Vout increasing to max again.

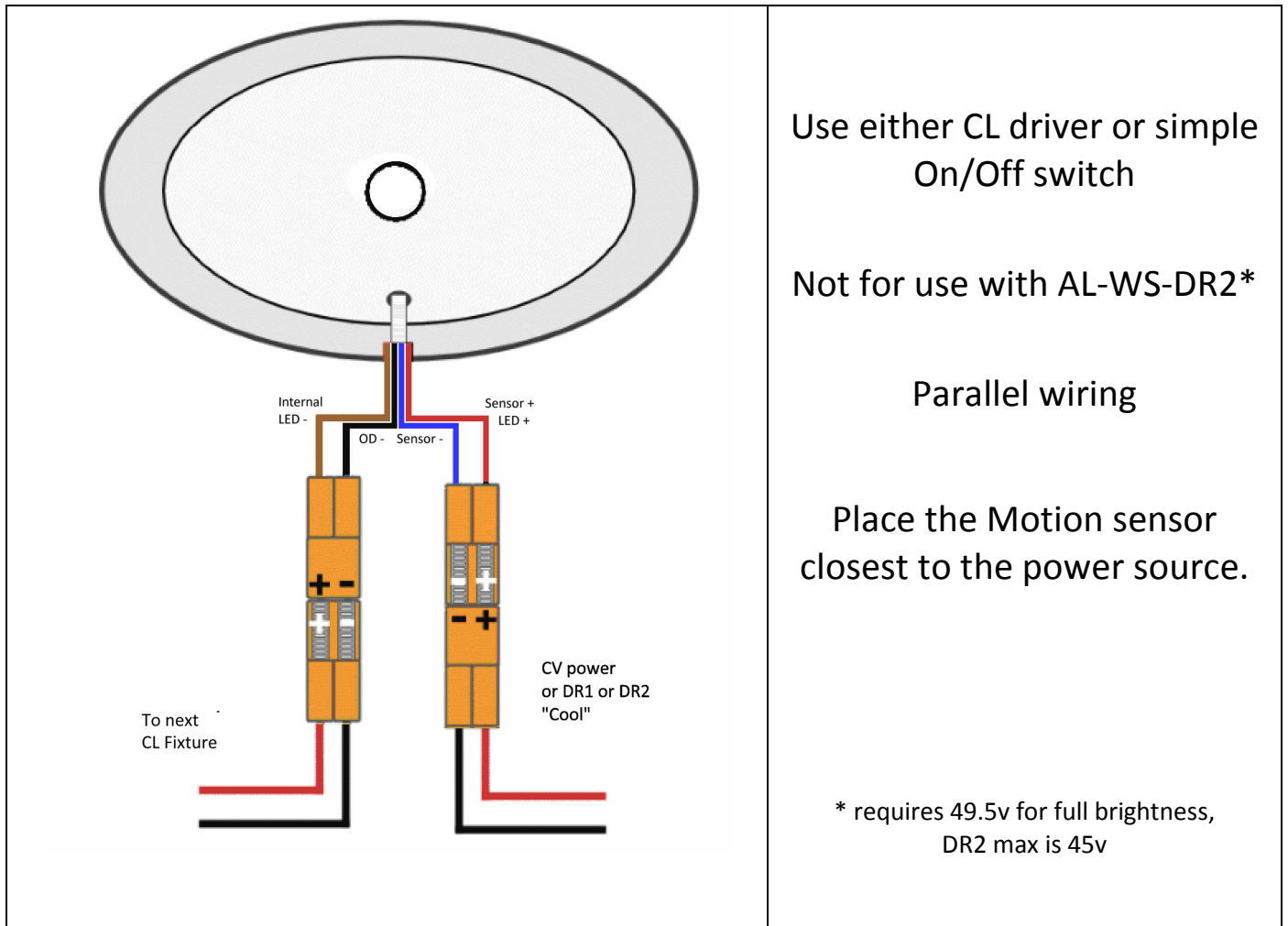
See page 3 for more details.

Multi Fixture Wiring



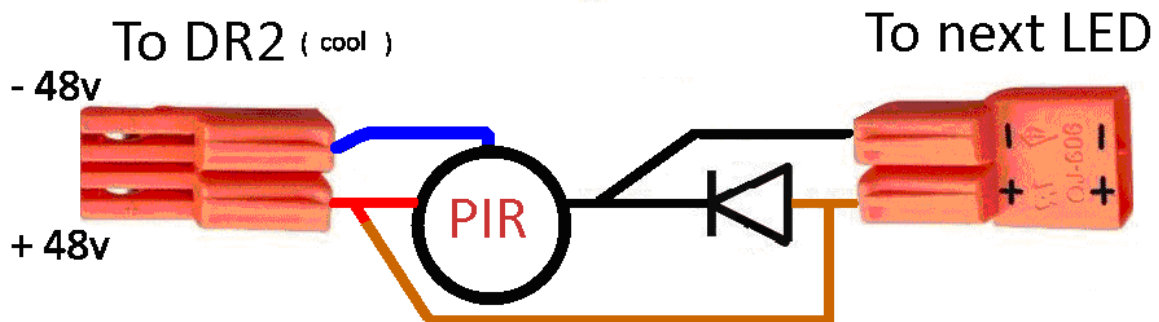
P023R6-M-52v - Single Fixture

8/2022 production



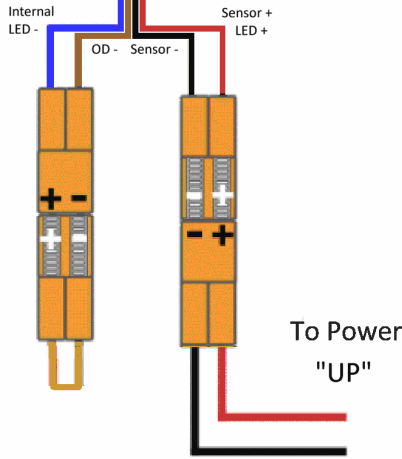
P023R6-M-52v Internal Connections

8/2022 production



A simple on/off switch or CL driver keeps power on at all times.
connect many CL fixtures downstream of the sensor fixture

5/2023 production



Use either CL driver or simple On/Off switch

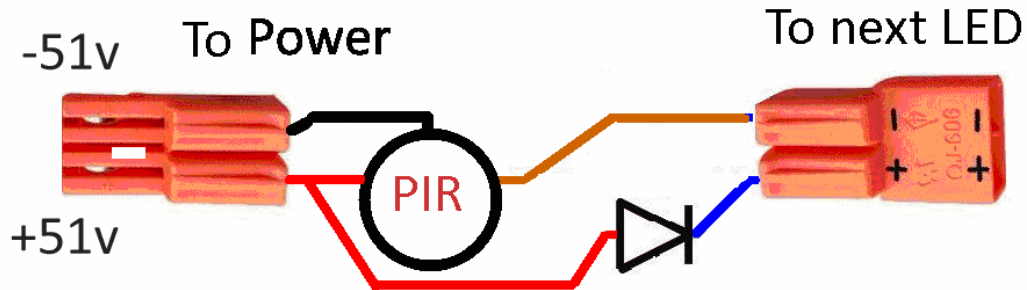
Not for use with AL-WS-DR2*

Parallel wiring

Place the Motion sensor closest to the power source.

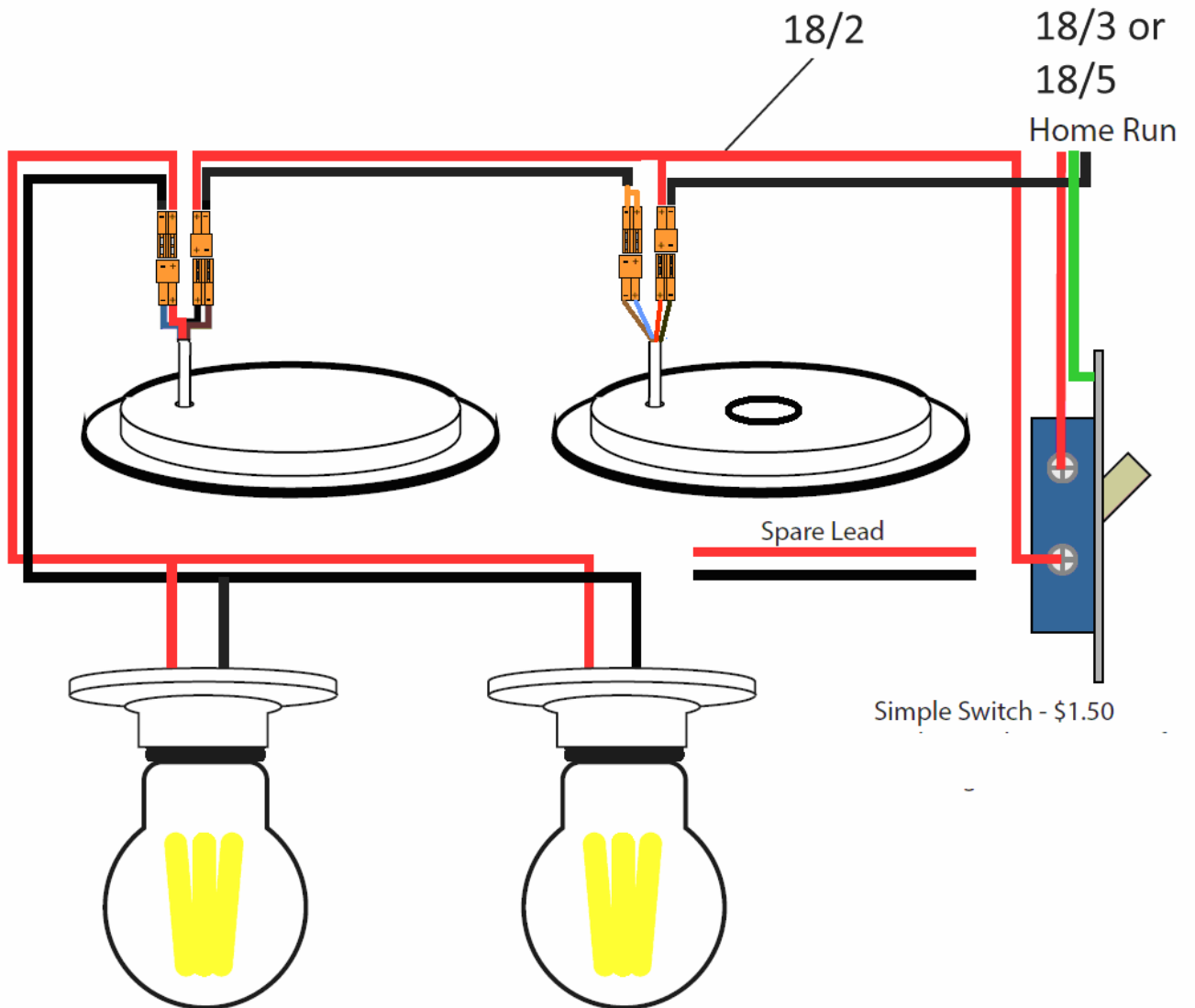
* requires 49.5v for full brightness,
DR2 max is 45v

P023R6-M-52v Internal Connections



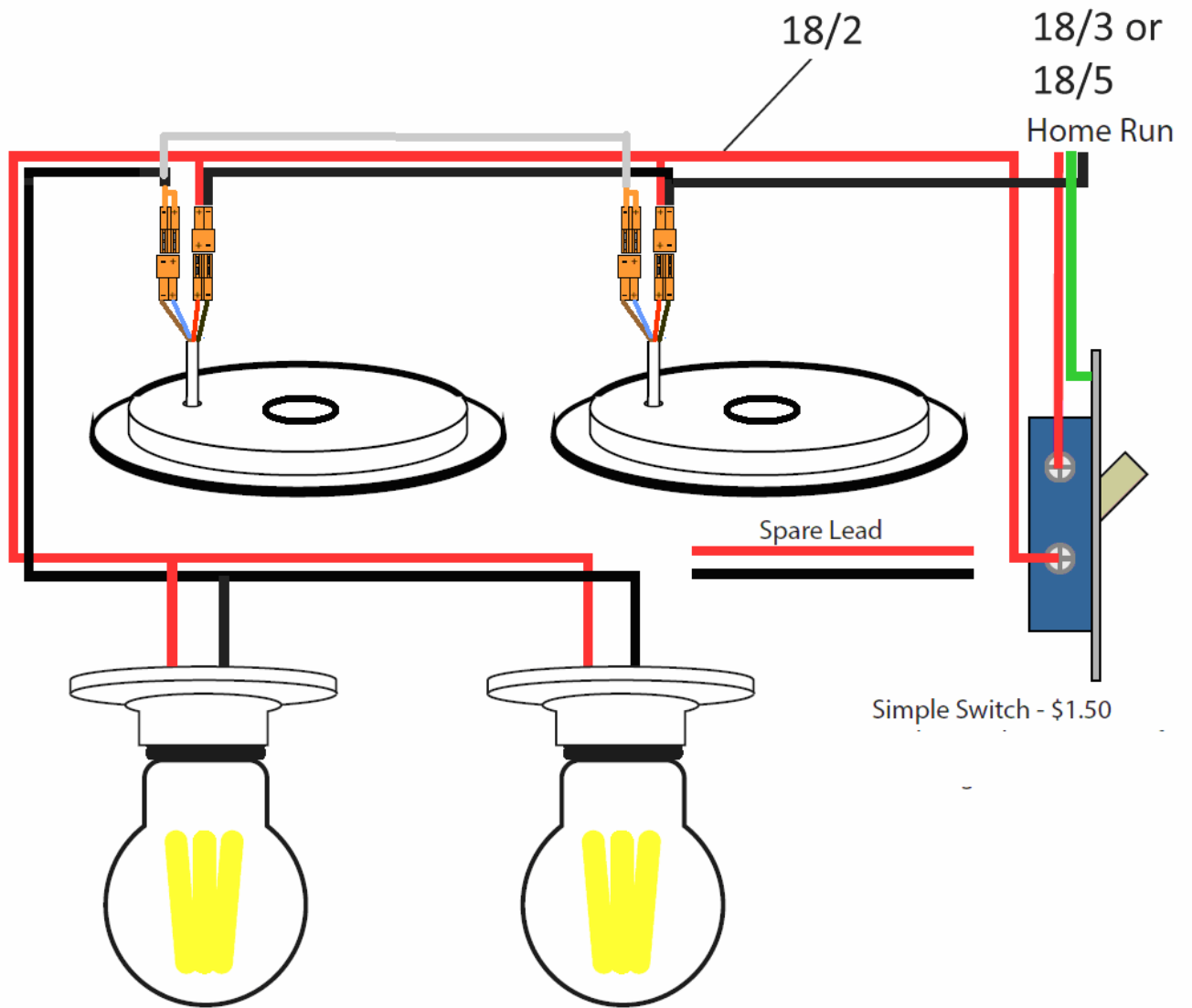
A simple on/off switch or CL driver keeps power on at all times.
this model also allows operation without internal LED
Use jumper to use the internal LED and external LEDs

P023R6-M-52v - Master/Slave
5/2023 version

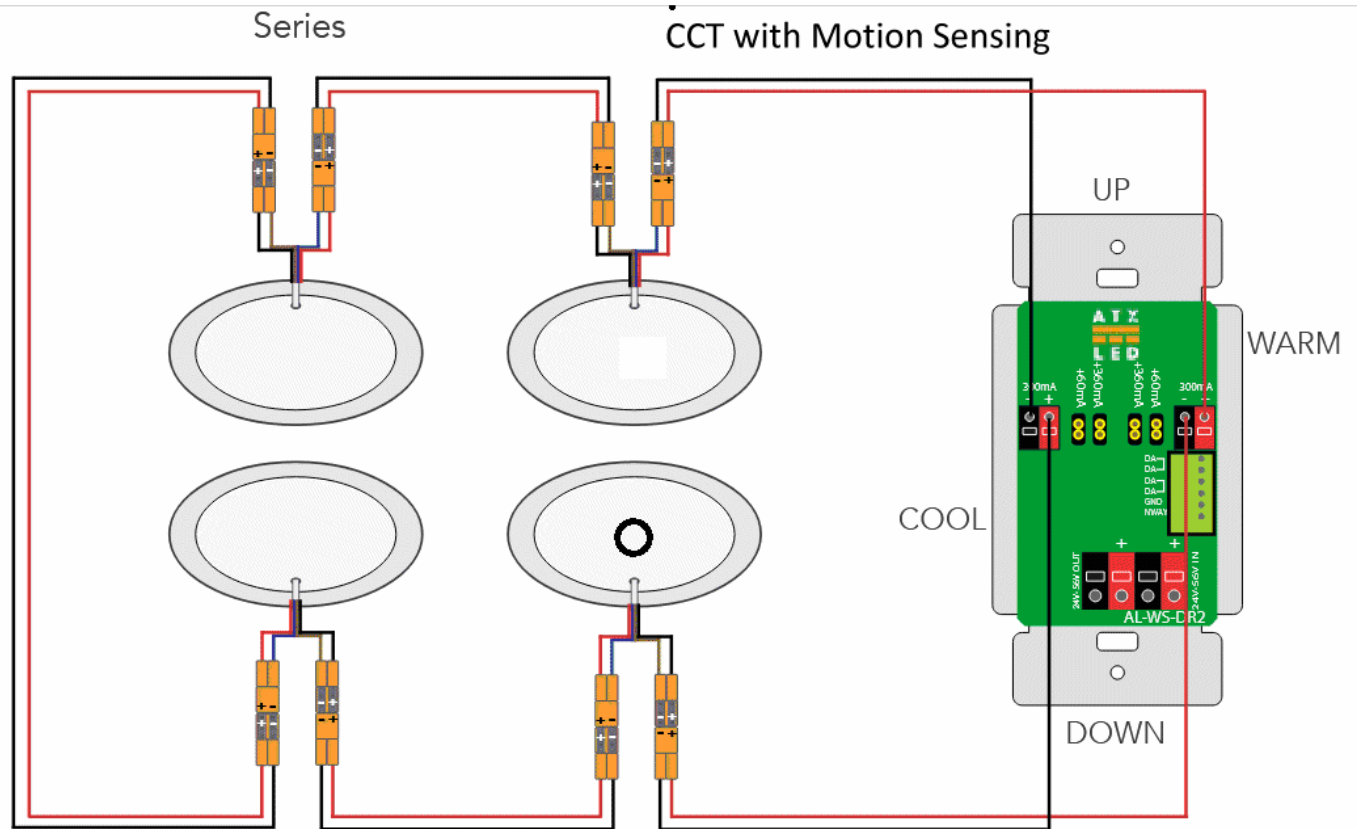


Parallel Wired Fixtures

P023R6-M-52v - Multi-Master
5/2023 version



Tunable White (CCT) Wiring example (p2)



Tunable White (CCT) Internal Connections

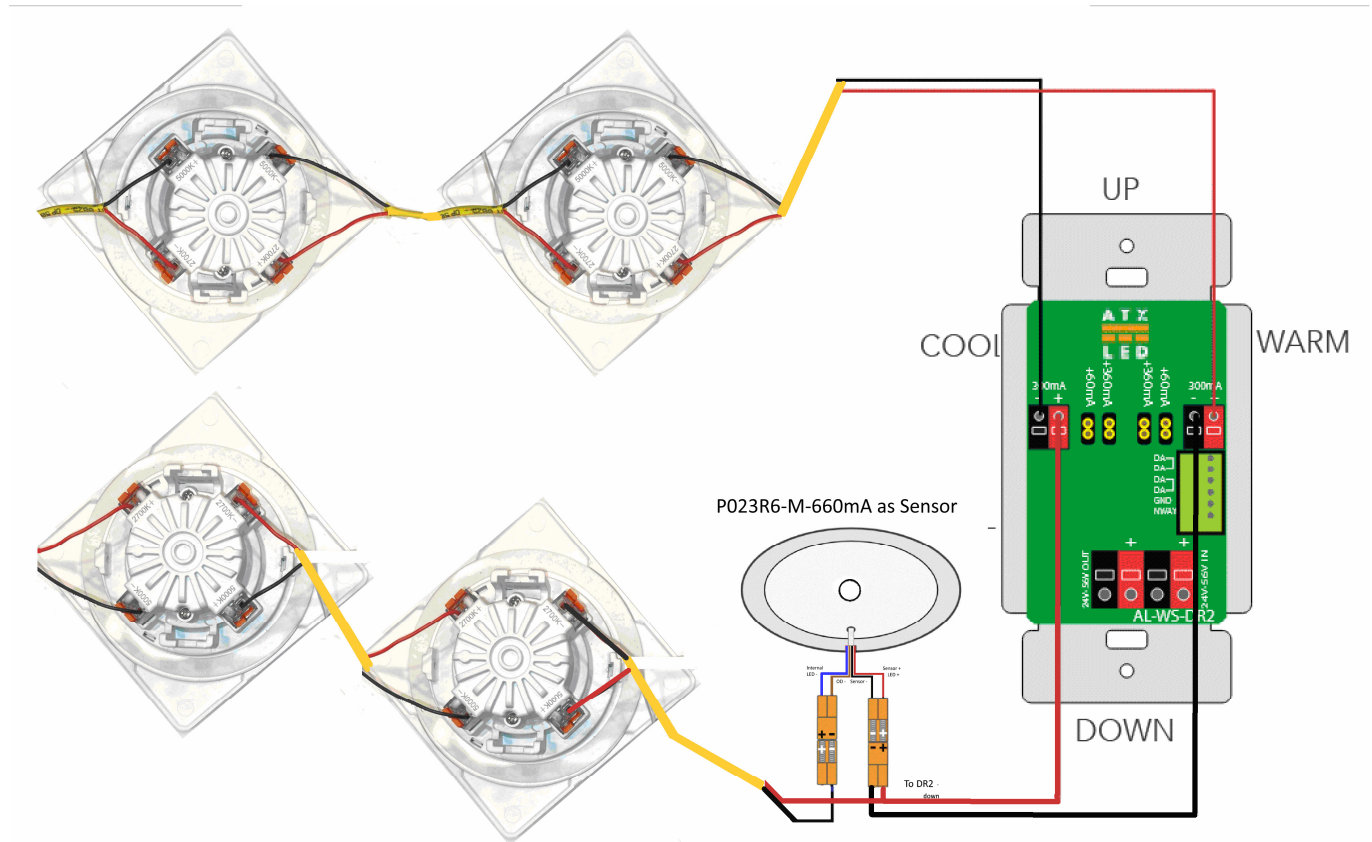
Tunable White series LED wiring is implemented with just one pair of wire OJ-606 type connector AWG 18 or 20 2 pin

The AL-WS-DR2 maintains 50% of LED Vf on Cool, this powers the sensor. It also maintains desired current on Warm +, senses a voltage drop on Warm + from open to LED Vf as a motion action. It then turns current up on Cool to full. When $V_{out} > V_{fmax}$, end of timeout is detected and Cool drops to Vf.

Until the AL-WS-DR2 is configured – the Cool side of the LED will stay ON.

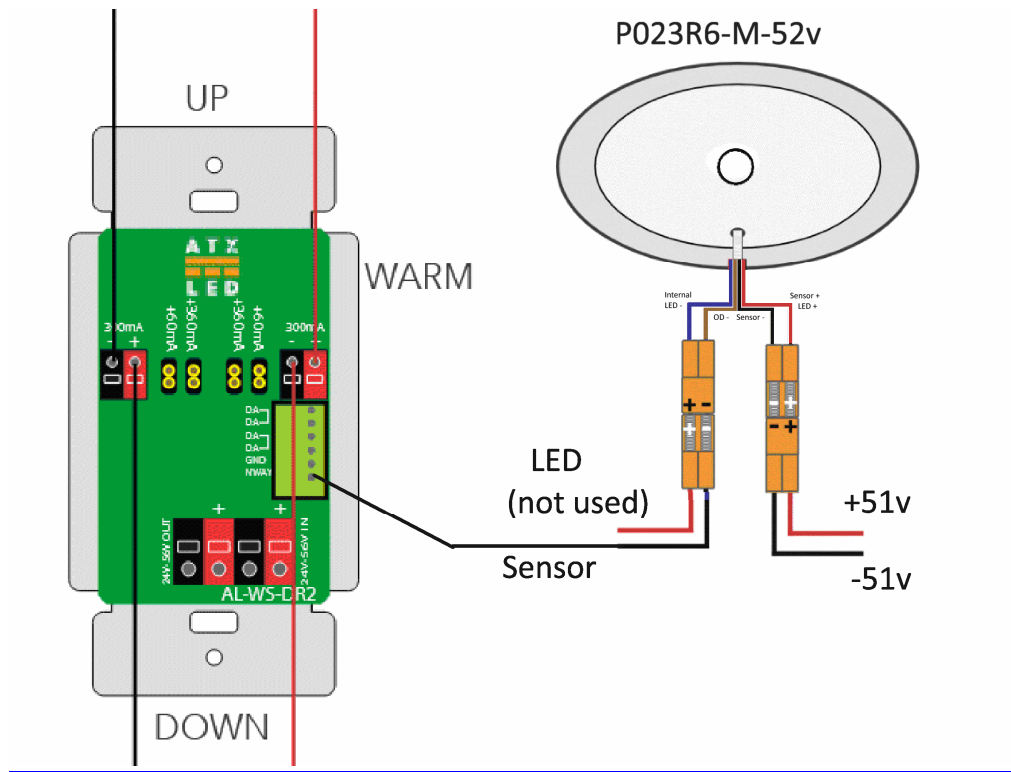
Tunable White (CCT) Wiring example with DL-120

In this example, the ceiling has 5 cans – 4 cans for the DL-120 as tunable white light source, and one as a Sensor only. While the P023R6-M-660mA has a daylight LED in it – in this example, it is left unused.
Please notice that the last DL-120 wire colors are exchanged.



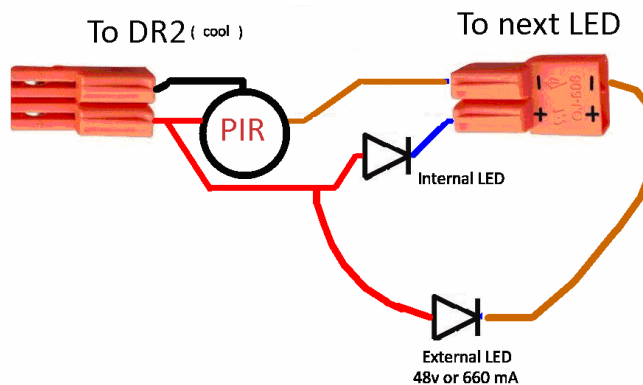
Sensor Wiring examples

Use the Sensor without internal LED to connect to the N-Way of an AL-WS-DR2 for use as a trigger or macro, use the N-Way input in 2nd short address mode.



To use the P023R6-M-52v with any 48v or 660mA loads, connect as shown below

This disables the internal LED and the external load can be either CC (660mA) or CL (48v-54v) type
If the load is 660 mA type, the driver must be hot swappable – for example the AL-WS-DR2 or AL-WS-DR1 or AL-SML-DR1500



Color Temperature options

Available in 6 different color temperatures, these fixtures can be operated as a fixed color, or tunable white fixture. Any 660 mA current source can be used. Up to 5 fixtures can be wired in series to share one driver. That driver can be located up to 150 ft from the LEDs – since constant current eliminates the concerns about voltage drop. This 6 watt device can be installed as either tunable white or fixed color. Connecting both inputs in parallel will generate the 3850K color. .

Model	2700	3000	3500	3850	4000	5000
CCT	X -----> X					
Fixed	X ²	*	X	X ²	*	

Stock, * = on request, X² = wiring option of CCT

Closest Rated

Suitable for use within Closet storage spaces when installed per NEC requirements. See <https://atxled.com/Closets> for more info.

Recommended DC Drivers

Total number of attached fixtures

DC drivers	Fixed Color	Tunable White	WiFi	DALI
AL-WS-DR1	5			
AL-WS-DR1P/D	5			
AL-WS-DR2	5	5		5
AL-WS-DR2C	5	5		5
AL-WS-DR2W	5	5	5	
On/Off @ 51v	8			

The P023R series of LED fixtures are **ETL listed** and IC rated for direct contact with insulation – recognizing it's cool operating temperatures and distributed heat (no hot spots). **Closest Rated** under NEC codes. **JA8 / Title 24** listed.

Ordering part numbers

Model	Voltage	Current	CCT	CRI	Lumens	Note
P023R6-M-660mA-3000K	7.5-9	0-660mA	3000K	90	540	DR1 or DR2 required
P023R6-M-660mA-3500K	7.5-9	0-660mA	3500K	90	540	DR1 or DR2 required
P023R6-M-660mA-4000K	7.5-9	0-660mA	4000K	90	540	DR1 or DR2 required
P023R6-M-52v6w-3500K	42-48v 48-54v	0-120mA 120mA	3500K	90	540	No Driver Needed
P023R6-M-52v6w-3000K	42-48v 48-54v	0-120mA 120mA	3500K	90	540	No Driver Needed
P023R6-M- 660mA-27/50K	7.5-9	0-660mA	Tunable 2700 to 5000	90	540	AL-WS-DR2 Tunable White Driver Required