

DUOLED

LED Hardwired driver and Dimmer switch

Read the installation instructions and all product labels before proceeding with the installation. This product must be installed in full accordance with applicable electrical and building codes. Installation should be performed by a qualified electrician in accordance with the Canadian national electrical standards and relevant local codes.

TO PREVENT ELECTRICAL SHOCK, POWER SHOULD BE TURNED OFF FROM THE ELECTRICAL PANEL BEFORE INSTALLATION OR MAINTENANCE

SAFETY WARNINGS

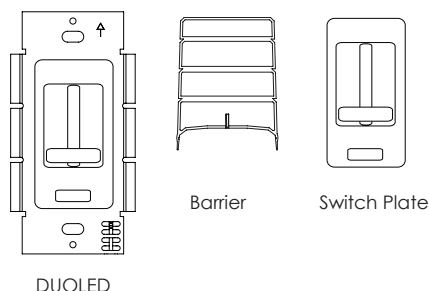
- Suitable for use in dry locations only.
- NEC Code 725.136: Class 1 and Class 2 circuits in same enclosure must be separated by a barrier unless Class 2 circuit conductors are installed in accordance with 725.41 Class 1 Circuits.
- Only install compatible 12 VDC or 24 VDC (depending on

- the selected DUOLED) LED products or warranty will be void.
- Do not open – no user serviceable inside.
- This device is not intended for use with emergency exit fixtures or emergency exit lights.
- Operating Temperature: -30°C / -22°F to 40°C / 104°F
- 5 year limited warranty

PRODUCT SPECIFICATIONS

Order code	Input	Output	Max Load
67071	120 VAC	12 VDC	60 W
67072		24 VDC	100 W

INCLUDED IN THE BOX OF EVERY DUOLED

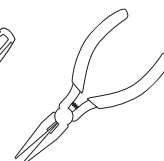
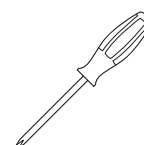
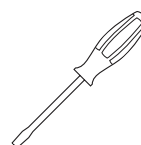


TOOLS NEEDED FOR THE INSTALLATION

Flat-head screwdriver

Phillips-head screwdriver

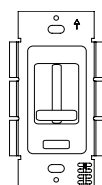
Pliers



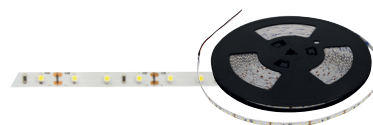
INSTALLATION - STEPS

1. TURN POWER OFF AT CIRCUIT BREAKER.

2. DETERMINE LOCATION TO INSTALL COMPONENTS



DUOLED



12 V / 24 V LED Tapes



Armonia™ LED Bars

DUOLED LED Hardwired driver and Dimmer switch

3. REMOVE EXISTING SWITCH (IF NECESSARY)

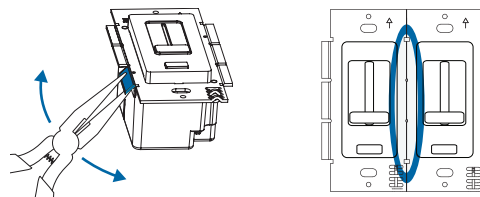
1. Remove trim plate and switch mounting screws.
2. Pull switch from wall.
3. Identify wires connected to switch and mark wires if desired.
4. Disconnect wires from switch.

4. REMOVING FINS (IF NECESSARY)

It's required to break off dimmer fins when ganging multiple dimmers in same wall box.

Zero load derating

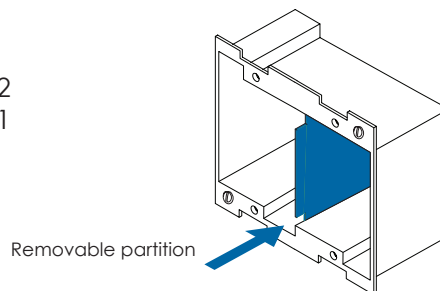
Unlike standard high voltage AC controls, removing DUOLED fins does not reduce the dimmer's maximum wattage rating.



Grip with pliers. Bend back and forth until fins breaks off.

Fins have been removed.

Install gang boxes that include vertical partitions unless Class 2 circuit conductors are installed in accordance with 725.41 Class 1 Circuits.

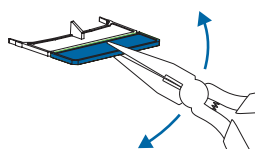
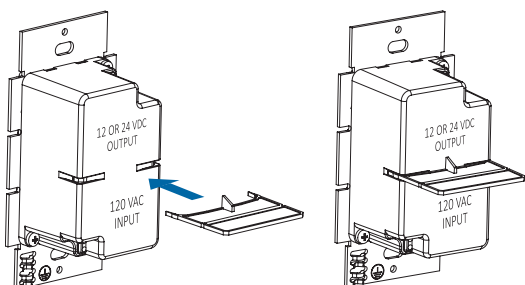


5. ATTACH VOLTAGE PARTITION (BARRIER)

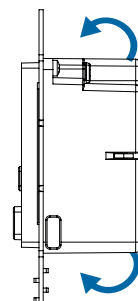
A voltage barrier is provided, which separates high voltage and low voltage wires in the wall box. Attach before mounting.

NEC CODE 725.136

Class 1 and Class 2 circuits in same enclosure must be separated by a barrier unless Class 2 circuit conductors are installed in accordance with 725.41 Class 1 Circuits. For example, Non-Metallic (NM) cable is considered a Class 1 circuit conductor. Therefore, if both high voltage and low voltage circuits are installed with NM.



For shallow boxes, barrier can be shortened. Grip with pliers. Bend back and forth until fin breaks off.



LOW VOLTAGE WIRES

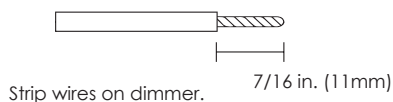
For extra shallow wall boxes it's acceptable to use the dimmer housing as a barrier. Tuck wires on top and bottom sides of dimmer housing.

HIGH VOLTAGE WIRES

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6. SPECIAL WIRING INSTRUCTIONS

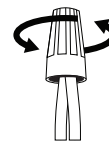
DUOLED requires unique wiring steps. Read thoroughly.



Wire dimmer. Ensure main power is OFF.

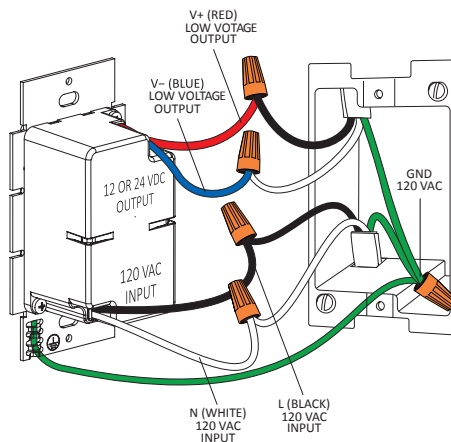
- GND (Green): to ground wire in box
- V+ (Red): to low voltage V+

- V- (Blue): to low voltage V-
- N (White): to 120 V Neutral
- H (Black): to 120 V Line hot

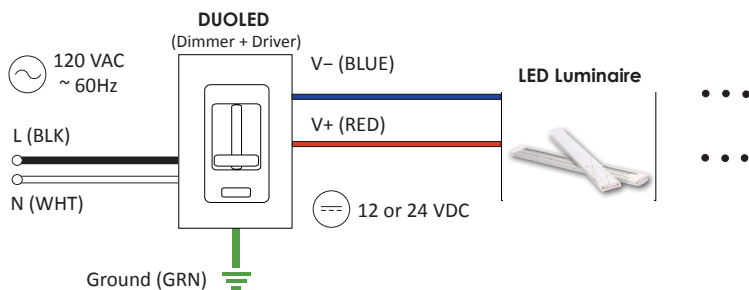


VOLTAGE DROP

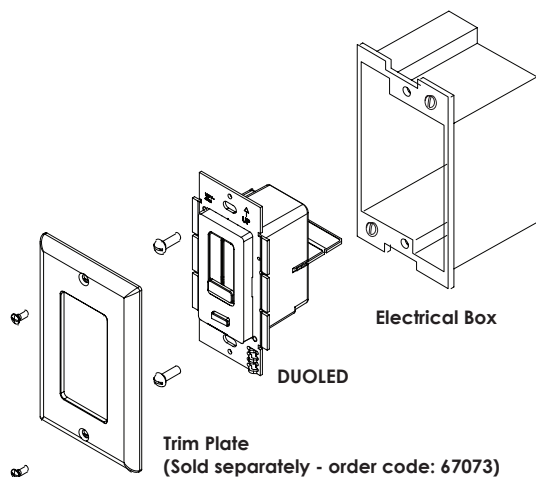
See VOLTAGE DROP CHARTS at end of this guide for wire gauge recommendation installed between dimmer and fixture.



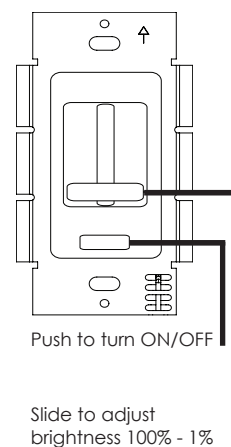
7. SYSTEM DIAGRAM



8. MOUNT DIMMER TO ELECTRICAL BOX AND ATTACH TRIM PLATE



OPERATION



DUOLED LED Hardwired driver and Dimmer switch

TROUBLESHOOTING

Issue	Common Cause
Fixture does not illuminate	- Incorrect wiring. Polarity of Low Voltage V+ and V- are reversed. - Circuit breaker is OFF or tripped. - Incorrect voltage pairing of dimmer and fixture. 12 V dimmer models will not power a fixture with a higher voltage rating.
- Diff erent fi xtures do not dim in sync. - Fixture turns off at low dim level. - Fixture strobos/flickers at low dim level. - Dimmer buzzes excessively	Only install 12 V or 24 VDC fixtures from the compatible dimmer.
Fixture heats up excessively	- Incorrect voltage pairing of dimmer and fi xture. Do not attach a 12V fi xture to a 24V dimmer. - Fixture is not compatible.

VOLTAGE DROP CHARTS

For best performance and lumen output, ensure proper wire gauge is installed to compensate for voltage drop of low voltage circuits.

Example: 12V Voltage Drop & Wire Length Distance Chart

VOLTAGE DROP CHARTS
For best performance and lumen output, ensure proper wire gauge is installed to compensate for voltage drop of low voltage circuits.

Example: 12V Voltage Drop & Wire Length Distance Chart

Wire Gauge	10 W .83 A	20 W 1.7 A	30 W 2.5 A	40 W 3.3 A	50 W 2.1 A	60 W 4.2 A
18 AWG	34 ft/10.4 m	17 ft/5.2 m	11 ft/3.4 m	8 ft/2.4 m	6 ft/1.8 m	5 ft/1.5 m
16 AWG	54 ft/16.5 m	27 ft/8.2 m	18 ft/5.5 m	13 ft/4.0 m	10 ft/3.1 m	9 ft/2.7 m
14 AWG	86 ft/26.2 m	43 ft/13.1 m	29 ft/8.9 m	21 ft/6.4 m	17 ft/5.2 m	14 ft/4.3 m
12 AWG	134 ft/40.8 m	68 ft/20.7 m	45 ft/13.7 m	34 ft/10.4 m	27 ft/8.2 m	22 ft/6.7 m
10 AWG	199 ft/60.7 m	99 ft/30.18 m	66 ft/20.1 m	49 ft/14.9 m	39 ft/11.9 m	33 ft/10.1 m

1 Determine load size. Let's assume load is 55 W. Round up to nearest load.

2 Determine distance from xDrive to load. Let's assume the distance is 20 ft.

3 It's recommended to install 12 AWG to eliminate excess voltage drop.

12V Voltage Drop & Wire Length Distance Chart

Wire Gauge	10 W .83 A	20 W 1.7 A	30 W 2.5 A	40 W 3.3 A	50 W 2.1 A	60 W 4.2 A
18 AWG	34 ft/10.4 m	17 ft/5.2 m	11 ft/3.4 m	8 ft/2.4 m	6 ft/1.8 m	5 ft/1.5 m
16 AWG	54 ft/16.5 m	27 ft/8.2 m	18 ft/5.5 m	13 ft/4.0 m	10 ft/3.1 m	9 ft/2.7 m
14 AWG	86 ft/26.2 m	43 ft/13.1 m	29 ft/8.9 m	21 ft/6.4 m	17 ft/5.2 m	14 ft/4.3 m
12 AWG	134 ft/40.8 m	68 ft/20.7 m	45 ft/13.7 m	34 ft/10.4 m	27 ft/8.2 m	22 ft/6.7 m
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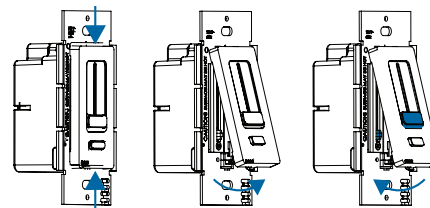
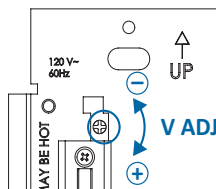
24V Voltage Drop & Wire Length Distance Chart

Wire Gauge	10 W .42 A	20 W .83 A	30 W 1.3 A	40 W 1.7 A	50 W 2.1 A	60 W 2.5 A	70 W 2.9 A	80 W 3.3 A	100 W 4.2 A
18 AWG	134 ft/40.8 m	68 ft/20.7 m	45 ft/13.7 m	33 ft/10.1 m	27 ft/8.2 m	22 ft/6.7 m	19 ft/5.8 m	17 ft/5.2 m	14 ft/4.3 m
16 AWG	215 ft/65.5 m	109 ft/33.2 m	72 ft/22.0 m	54 ft/16.5 m	43 ft/13.1 m	36 ft/11.0 m	31 ft/9.5 m	27 ft/8.2 m	22 ft/6.7 m
14 AWG	345 ft/105.2 m	174 ft/53.0 m	115 ft/35.1 m	86 ft/26.2 m	69 ft/21.0 m	57 ft/17.4 m	49 ft/14.9 m	43 ft/13.1 m	36 ft/11.0 m
12 AWG	539 ft/164.3 m	272 ft/82.9 m	181 ft/55.2 m	135 ft/41.2 m	108 ft/32.9 m	90 ft/27.5 m	77 ft/23.5 m	68 ft/20.7 m	56 ft/17.1 m
10 AWG	784 ft/239.0 m	397 ft/121.0 m	263 ft/80.2 m	197 ft/60.1 m	158 ft/48.2 m	131 ft/39.9 m	112 ft/34.1 m	98 ft/29.9 m	82 ft/25.0 m

VOLTAGE ADJUSTMENT

DUOLED can provide a 1V boost if the fixture is receiving noticeable light degradation.

- Pop off face plate as shown in the figure on the right.
- Use a small screwdriver to adjust output voltage by turning adjustment dial clockwise.



- Gently squeeze top and bottom of face plate.
- Lift face plate from housing.
- Insert face plate into top housing groove. Position housing slider and face plate slider at min brightness(bottom level) and pop on face plate.