

24VDC Recessed Downlight Wiring Diagram

MT-CLR1042420 4" Tunable White • 10W • 928 lm • 24VDC • 3-wire

MT-CLR942420 4" 3000K • 9W • 785 lm • 24VDC • 2-wire

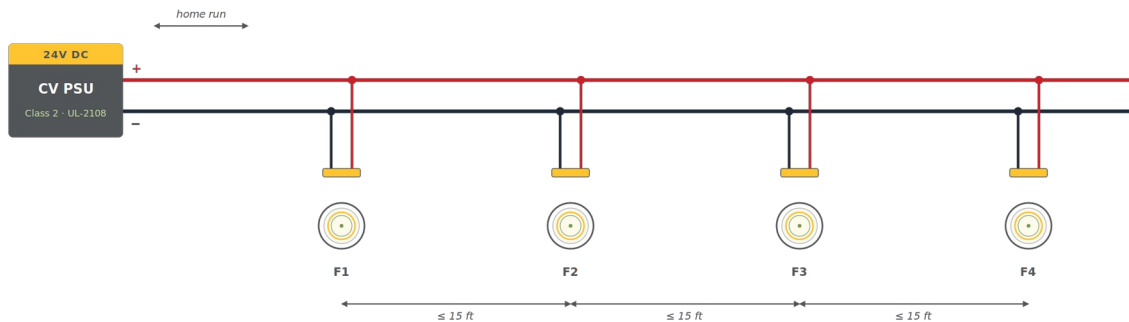
Install the device only as part of UL-2108 24V DC low-voltage lighting systems. All wiring must be Class 2 and separated from higher-voltage circuits. Using non-Class 2 Constant Voltage power supplies can lead to serious injuries or death. Use a minimum wire size of 16 AWG and do not exceed the DC voltage rating. Ensure the voltage at the fixtures remains within $\pm 4\%$ of the rated voltage and select a power supply rated at least 20% above the required wattage. See the Installation manual for full instructions.

SCENARIO A — END-FED PARALLEL

Up to 6 fixtures • run ≤ 50 ft

Power feeds one end. Bus runs past each fixture; every fixture taps the bus in parallel.

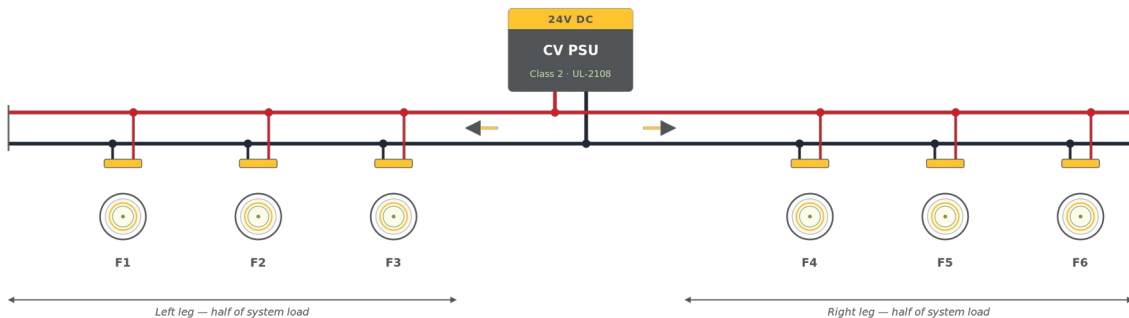
RED = + (V+) BLACK = - (V-) • = parallel tap point



SCENARIO B — CENTER-FED PARALLEL

Use when > 6 fixtures OR run > 50 ft

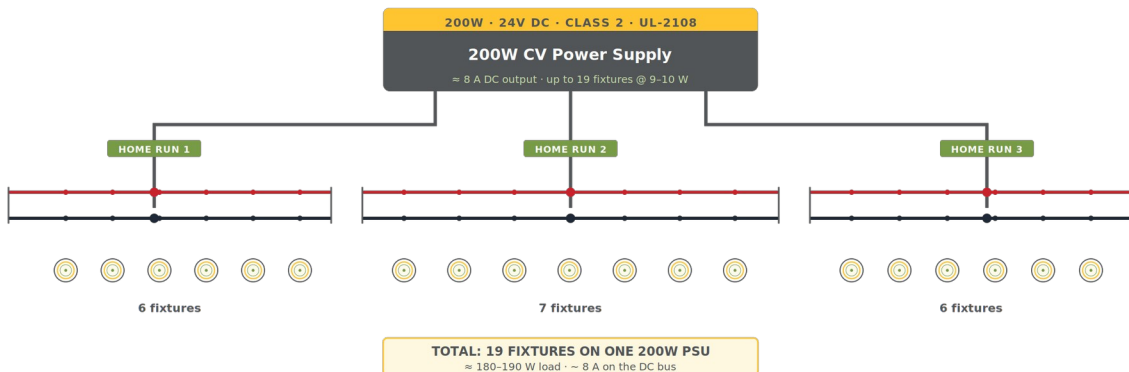
Power feeds the center. Each leg carries half the load, halving voltage drop on the longest fixture from the supply.



SCENARIO C — MULTI-BRANCH HOME RUNS

Up to 19 fixtures on one 200W PSU

One PSU, multiple parallel home runs. Each branch is its own circuit — size each leg like Scenario A or B.



DO NOT WIRE IN SERIES

Every fixture must tap the V+ / V- bus in parallel. Current must not pass through one fixture to reach the next — series wiring drops voltage at every fixture and dims or kills downstream lights.

Application & Sales Notes

24VDC Recessed Downlights — where they fit, why specifiers choose them

SUGGESTED SALES APPLICATIONS

1

PRE-WIRED SPEAKER LOCATIONS

Home pre-wired for sound, but no speakers installed. The average room layout supports adding lights at the wired speaker positions.

2

PANEL & CIRCUITS MAXED OUT

Load center and existing lighting circuits are already full. Plug a 24VDC PSU into any available outlet — simple to gain new lighting.

3

HALF-HOT OUTLET CONVERSION

Builders typically provide only a half-hot outlet for room lighting (for lamps). Easy to convert to low-voltage recessed.

EXAMPLE: SYSTEM SCALE

200W
24VDC CV PSU

Class 2 · UL-2108

19
fixtures

@ 9-10 W each

8A
single outlet

vs. multiple 15A circuits

Average kitchen / living area = 5-6 fixtures · one 200W PSU covers an entire main level.

WHY 24VDC OVER LINE-VOLTAGE

HIGH EFFICACY

Ultra-efficient DC systems save 20% energy versus traditional AC-to-DC light conversion losses.

LOAD REDUCTION

One 8-AMP 24VDC circuit replaces multiple 15-AMP line-voltage circuits for the same lighting load.

PREMIUM LIGHT QUALITY

Superior LEDs deliver a significantly better and healthier lighting experience.

LOW PROFILE · IC RATED

Under 2 inches deep — fits tight ceiling spaces. IC rated for direct insulation contact.