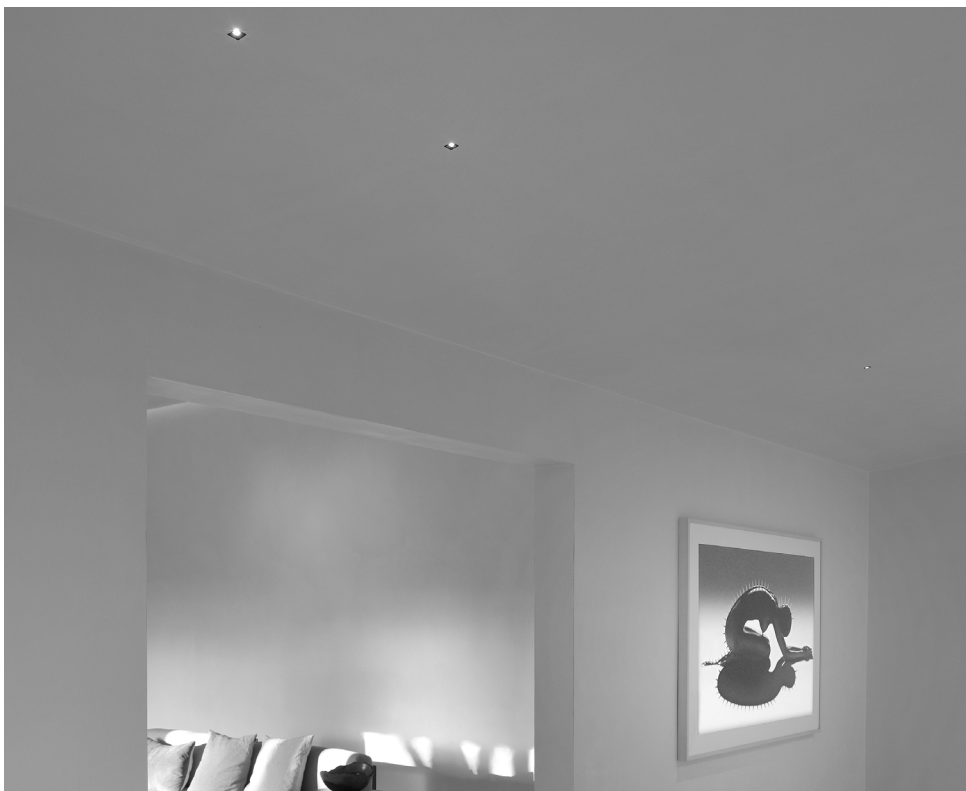


## MINUS TWO Minimal Recessed

### Quick Facts

- Class 2 Fixture, Remote Powered up to 45m (150ft) max
- Minimal fixture aperture - 25mm (1")
- 19mm (3/4") recess depth required
- 12W Cree LED
- Up to 1000lm from source and 652lm delivered (IES files available upon request)
- Available in Warm White (2700K) and Soft White (3000K)
- Color Rendering Index  $\geq 90$
- 2-step SDCM ellipse for accurate color consistency between fixtures
- Full dimming range via remote power supply
- Suitable for installation in drywall, wood, and stone ceilings
- Suitable for dry, damp and wet locations (IP43)
- Type IC Rated, Plenum Rated, Airtight Rated
- Patented Product
- Engineered and made in Germany



Description

Featuring the never-before-developed lighting hardware and software of the MINUS ONE, recessed in less than 25 mm (1”), the MINUS TWO by Apure exhibits a unique Louver, designed and perfected by Studio F+A-Porsche. Distributing glare-free “invisible” light in either a 20 or 40 degree beam spread, the true to size luminaire powerfully illuminates spaces, while ensuring ceilings remain entirely unrevealed.

Construction

- Extruded aluminum fixture body, featuring Apure’s signature louver designed by Studio F+A-Porsche
- 50,000 hours LED lifetime
- Approximate fixture weight: 664g (1.46lbs)
- Operating Temperature: 10°C to 50°C

Fixture Size

- Visible Aperture: 25mm x 25mm (1” x 1”)
- Recess Depth: 19mm (3/4”)
- Heat Sink: 120mm x 120mm (4 - 3/4” x 4 - 3/4”)

Light Output

- High performance Cree LED, available in various color temperatures
- 1000lm source light output, 652lm max delivered light output
- 2-step SDCM ellipse
- Color rendering index (CRI) min. 90
- Integral microprocessor controlled thermal protection

Electrical Specifications

- 24V DC Constant Voltage Input (Class 2, 12W Power Consumption)
- 96W 24V DC Power Supply Required (powers up to 4 fixtures)
- Magnetic Low Voltage (MLV) Dimming (or) 3-Wire Lutron Hi-Lume dimming protocols
- Recommended wire, min. 16 AWG plenum rated (CMP, when required) up to 150ft from remote transformer

- Constant Current 1000mA 12V DC Input (Class 2, 12W Power Consumption)
- Remote 1000mA Constant Current Driver Required
- 0-10V 0.1% Dimming (or) 1-10V/Push/DALI (or) Phase Dimming drivers available
- Recommended wire, min. 16 AWG plenum rated (CMP, when required) up to 82ft from remote transformer

Installation Types

- Drywall installation for new construction and retrofit installations possible with the Universal Drywall Bracket, available for various drywall thicknesses.
- Custom installations for wood, metal and stone ceilings. Requires shop drawings available per request by Apure.
- Profile installation in the LINIAR System. See the LINIAR System cutsheet for more details.
- The Minus series is not suitable for installation within steam rooms or saunas!

Listings

- UL Listed, CE Conform, Type IC Rated, Plenum Rated, Airtight Rated
- Suitable for dry, damp and wet locations (IP43)

Resources / Installation Videos

Scan QR Code or visit at [apurelighting.com/resources/](https://apurelighting.com/resources/)



Resources



Videos



ORDERING INFORMATION

SERIES

- ☐ AM - Minus Series

MODEL

- ☐ 2 - Minus Two

TYPE

- ☐ 1 - LED

ORIENTATION

- ☐ F - Fixed

TEMPERATURE (CCT)

- ☐ 27 - Warm White (2700K)
- ☐ 30 - Soft White (3000K)

COLOR RENDERING INDEX

- ☐ 90 - ≥90

OPTICS (DEGREE)

- ☐ S - Spot (20°)
- ☐ F - Flood (40°)

DIMMING PROTOCOL

- ☐ A - Magnetic Low Voltage (MLV) (24V)\*
- ☐ L - Lutron 3-Wire Hi-Lume 0.1% (24V)\*
- ☐ CC\*\* - 0-10V / DALI / Phase Dim (1000mA Constant Current, 12VDC)\*

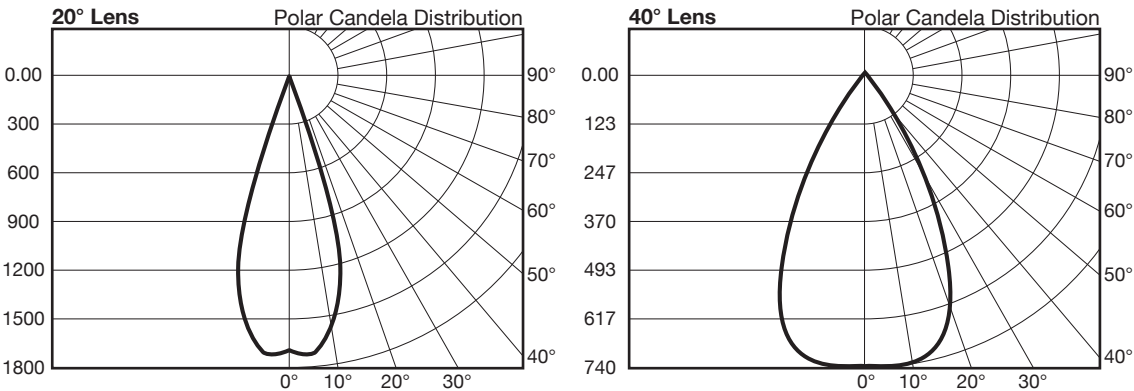
\*remote power supply required

\*\*Also cataloged as “EU”

ORDERING EXAMPLE

AM21F3090FCC

LED Photometrics



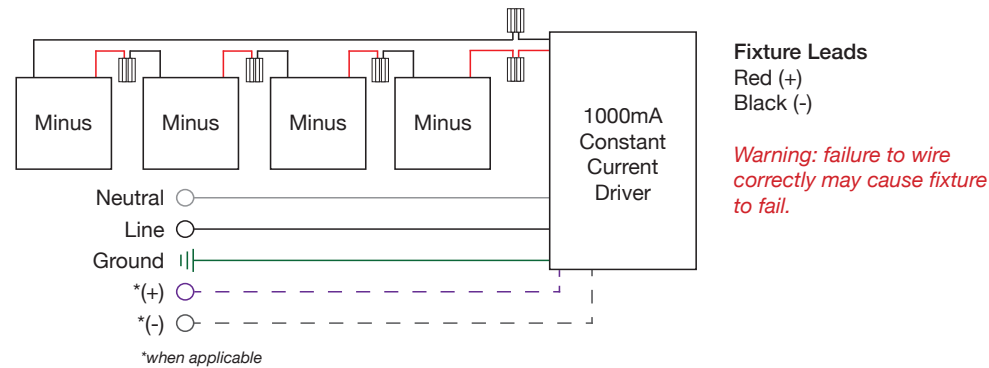
<b>Drywall Accessories</b> Universal Drywall Bracket Universal Drywall Bracket Universal Drywall Bracket - <i>(US Standard)</i>	<b>Part Number</b> AM2BRKU10 AM2BRKU12 AM2BRKU15	<b>Thickness</b> 10mm 12.5mm 15mm	<b>Requirement</b> Drywall Installations Drywall Installations Drywall Installations
<b>Profile System</b> LINIAR System*	<b>Part Number</b> LS01XX	<b>Thickness</b> 15mm	<b>Requirement</b> Drywall Installations
<b>Remote Power Supply for MLV Variant - [A]</b> Magnitude M-Series Power Supply (96W 24VDC)	<b>Part Number</b> AA3096M	<b>Input Voltage</b> 120Vac	<b>Listings</b> ETL
<b>Remote Power Supply for Lutron Variant - [L]</b> Lutron 3-wire Hi-Lume Premier Eco Driver (by others) Lutron 3-wire HomeWorks Digital Control (by others)	<b>Part Number</b> L3D0-96W24V-U LHD0-96W24V-U	<b>Input Voltage</b> 120-277V 120-277V	<b>Listings</b> UL UL
<b>Remote Power Supply for CC or EU Variant - [CC]</b> Magnitude AFLEX Power Supply (1000mA 60W)** Magnitude AFLEX JBZN Series (1000mA 60W)*** Hatch FTX 0-10V (1000mA 50W)** Hatch XTC (1000mA 32W)** Apure Phase Dimmable (1000mA 26W) Apure Phase Dimmable (1000mA 65W) KGP DALI 2 NFC Touch Dim (500-1000mA 53.2W)**	<b>Part Number</b> AA3010M1000 AA3010MJBXX AA3FTXH1000 AA3XTCH1000 AA32202DEU AA32205DEU AA3DALI2EU	<b>Input Voltage</b> 120-277Vac 120-277Vac 120-277Vac 120-277Vac 220-240Vac 220-240Vac 220-240Vac	<b>Listings</b> UL Listed UL Listed UL Listed UL Recognized CE CE CE

\*Refer to LINIAR cutsheet for more information  
\*\*Driver enclosure required where applicable  
\*\*\*Refer to reseller for more information

Custom Installation Types

- The universal bracket (AM2BRKUXX) is intended only for drywall installations.
- System ceilings, stone, wood and metal ceiling integrations are accomplished through custom fabrication by others. Please note, not all materials are suitable for installation. However, Apure will make every effort to accommodate custom integrations. Please contact your authorized Minus reseller for more information regarding custom ceiling integrations.
- Fixtures must have a minimum clearance of 12 inches (30cm) below or horizontally from the light source at all times!
- Observe and follow all local and national installation codes for all installation types.
- Test and make sure that all fixtures are working properly before any mudding, painting or finishing occurs!
- Read and adhere to all instructions supplied with each power supply and fixture.
- Follow all instructions supplied by power supply / driver manufacturer!

Wiring Diagram for Constant Current Minus products - [CC]



Additional Considerations

The above wiring diagram applies only to Constant Current Minus products with product ordering codes ending with “CC”. The diagram above shows the typical wiring schematic, however the total number of fixtures per driver is driver specific.

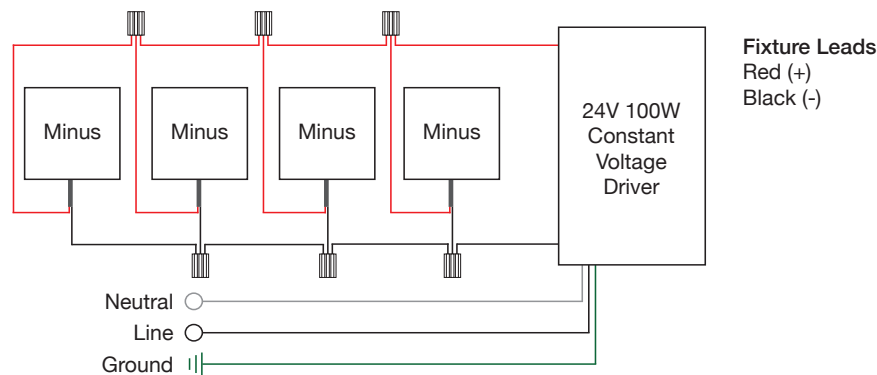
• Magnitude AFLEX 0-10V Driver (1000mA 60W)	1-4 Minus	16AWG - 82ft (25m)	US/CAN
• Hatch FTX 0-10V (1000mA 50W)	2-3 Minus	16AWG - 82ft (25m)	US/CAN
• Hatch XTC34 Phase Dimmable (1000mA 32W)	1-2 Minus	16AWG - 82ft (25m)	US/CAN
• Apure Phase Dimmable (1000mA 26W)	1-2 Minus	16AWG - 82ft (25m)	EU/INT'L
• Apure Phase Dimmable (1000mA 65W)	3-5 Minus	16AWG - 82ft (25m)	EU/INT'L
• KGP DALI 2 NFC Touch Dim (500-1000mA 53.2W)	1-4 Minus	16AWG - 82ft (25m)	EU/INT'L

**WARNING:** The power supply must operate within the range of minimum to maximum fixtures. Operation with less or more fixtures from the specified amount will result in damage to the power supply and/or lighting fixture. Incorrectly wiring the Constant Current lighting fixture may cause luminaire to fail.

Dimmer Compatibility

Driver manufacturers perform extensive compatibility testing with various dimmers and LED loads. Dimming performance may vary based on driver type, load, wiring, and dimmer model. Apure recommends verifying system performance prior to installation. Refer to the LED driver specification sheet for detailed dimming data.

Wiring Diagram for 24V Minus Products - [A] MLV or [L] Lutron



Additional Considerations

The above wiring diagram applies only to 24V Minus products with product ordering codes ending with “A” or “L”. The diagram above shows the typical wiring schematic, however the total number of fixtures per driver is driver specific.

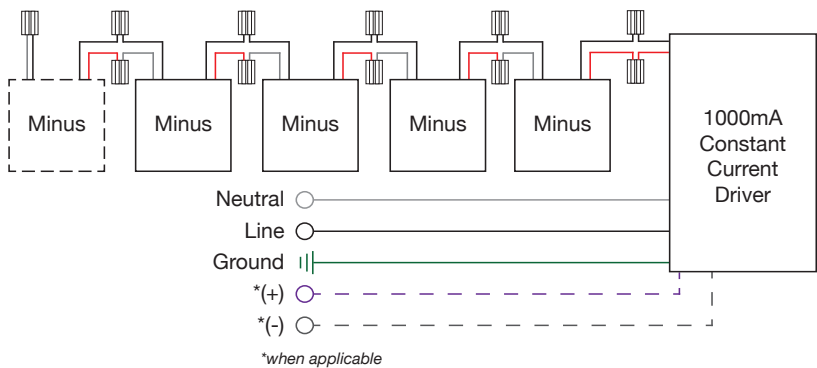
• Magnitude M-Series Constant Voltage Driver (96W 24VDC)	1-4 Minus	≤16AWG - 150ft (45m)	US/CAN
• Lutron Hi-Lume Constant Voltage Driver (96W 24VDC)	1-4 Minus	≤16AWG - 150ft (45m)	US/CAN
• Lutron HomeWorks Constant Voltage Driver (96W 24VDC)	1-4 Minus	≤16AWG - 150ft (45m)	US/CAN

**WARNING:** The power supply must operate within the range of minimum to maximum fixtures. Operation with less or more fixtures from the specified amount will result in damage to the power supply and/or lighting fixture.

Dimmer Compatibility

Driver manufacturers perform extensive compatibility testing with various dimmers and LED loads. Dimming performance may vary based on driver type, load, wiring, and dimmer model. Apure recommends verifying system performance prior to installation. Refer to the LED driver specification sheet for detailed dimming data.

Wiring Diagram for Constant Current Minus products - [EU]



Fixture Leads In  
Red with Red (+)  
Black with Black (-)

Fixture Leads Out  
Black with Black  
White with Red

*Warning: failure to wire correctly may cause fixture to fail.*

*Note: The white and black cables of the last fixture in the series must be bridged together!*

Additional Considerations

The above wiring diagram applies only to Constant Current Minus products with product ordering codes ending with "EU". The diagram above shows the typical wiring schematic, however the total number of fixtures per driver is driver specific.

• Magnitude AFLEX 0-10V Driver (1000mA 60W)	1-4 Minus	16AWG - 82ft (25m)	US/CAN
• Hatch FTX 0-10V (1000mA 50W)	2-3 Minus	16AWG - 82ft (25m)	US/CAN
• Hatch XTC34 Phase Dimmable (1000mA 32W)	1-2 Minus	16AWG - 82ft (25m)	US/CAN
• Apure Phase Dimmable (1000mA 26W)	1-2 Minus	16AWG - 82ft (25m)	EU/INT'L
• Apure Phase Dimmable (1000mA 65W)	3-5 Minus	16AWG - 82ft (25m)	EU/INT'L
• KGP DALI 2 NFC Touch Dim (500-1000mA 53.2W)	1-4 Minus	16AWG - 82ft (25m)	EU/INT'L

**WARNING:** The power supply must operate within the range of minimum to maximum fixtures. Operation with less or more fixtures from the specified amount will result in damage to the power supply and/or lighting fixture. Incorrectly wiring the Constant Current lighting fixture may cause luminaire to fail.

Dimmer Compatibility

Driver manufacturers perform extensive compatibility testing with various dimmers and LED loads. Dimming performance may vary based on driver type, load, wiring, and dimmer model. Apure recommends verifying system performance prior to installation. Refer to the LED driver specification sheet for detailed dimming data.

Fixture Dimensions

