

## 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
- 13W Cree LED
- Up to 1140lm from source (IES files available upon request)
- Available in Warm White (2700K), Soft White (3000K), and Cool White (4000K)
- 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
- 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: 720g (1.58lbs)
- Operating Temperature: -10°C - 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
- 1140lm source light output
- 2-step SDCM ellipse
- Color rendering index (CRI) min. 90
- Integral microprocessor controlled thermal protection

### Electrical Specifications

24V DC Input (Class 2, 13W 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 (or) 0-10V / DALI / Phase Dim available
- Recommended wire, min. 16 AWG plenum rated (CMP, when required) up to 150ft from remote transformer

12V DC Input (Class 2, 13W 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 100ft 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.
- The Minus series is not suitable for installation within steam rooms or saunas!

### Listings

- UL Listed, CE Listed
- Suitable for dry and damp locations

### Installation Instructions/ Video

Scan QR Code or visit at [apure-system.com/resources](http://apure-system.com/resources)



## 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)  
 40 - Cool White (4000K)

### COLOR RENDERING INDEX

- 90 - ≥90

### OPTICS (DEGREE)

- S - Spot (20°)  
 F - Flood (40°)

### DIMMING PROTOCOL

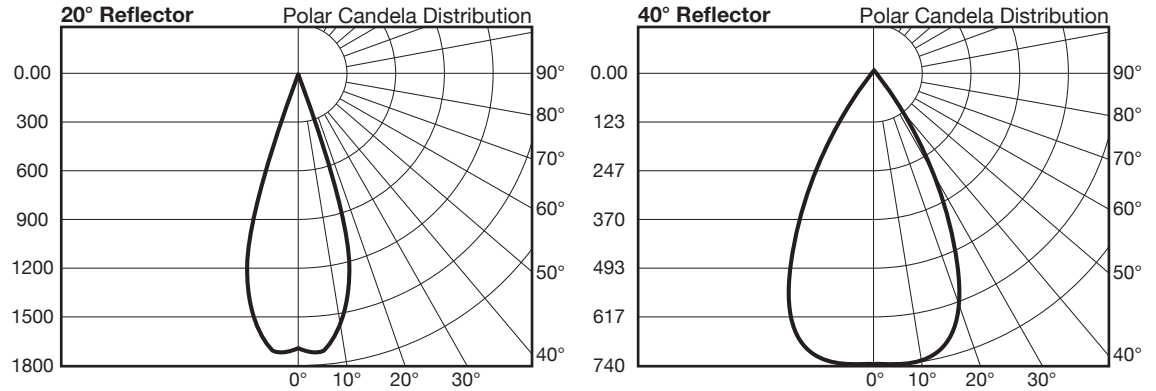
- A - Magnetic Low Voltage (MLV)\*  
 L - Lutron 3-Wire Hi-Lume 0.1%\*  
 EU - 0-10V / DALI / Phase Dim

\*remote powered fixture, power supply required

### ORDERING EXAMPLE

AM21F3090FA

## LED Photometrics



Drywall Accessories	Part Number	Thickness	Requirement
Universal Drywall Bracket	AM2BRKU10	10mm	Drywall Installations
Universal Drywall Bracket	AM2BRKU12	12.5mm	Drywall Installations
Universal Drywall Bracket	AM2BRKU15	15mm	Drywall Installations
Universal Drywall Bracket - (US Standard)	AM2BRKU18	18mm	Drywall Installations
Remote Power Supply for MLV Variant - [A]	Part Number	Input Voltage	Listings
Magnitude Power Supply (96W 24VDC)	AA3096M	120Vac	ETL
Remote Power Supply for Lutron Variant - [L]	Part Number	Input Voltage	Listings
Lutron 3-wire Hi-Lume Premier Eco Driver**	L3D0-96W24V-U	120-277V	UL
Remote Power Supply for EU Variant - [EU]	Part Number	Input Voltage	Listings
Magnitude AFLEX Power Supply (1000mA 60W)*	AA3010M	120-277Vac	UL Recognized
Apure Phase Dimmable (1000mA 29W)	AA32202DEU	220-240Vac	CE
Apure Phase Dimmable (1000mA 30-65W)	AA32205DEU	220-240Vac	CE
Apure DALI, Push, 1-10V (1000mA 30-65W)*	AA3DALIDEU	110-240Vac	CE

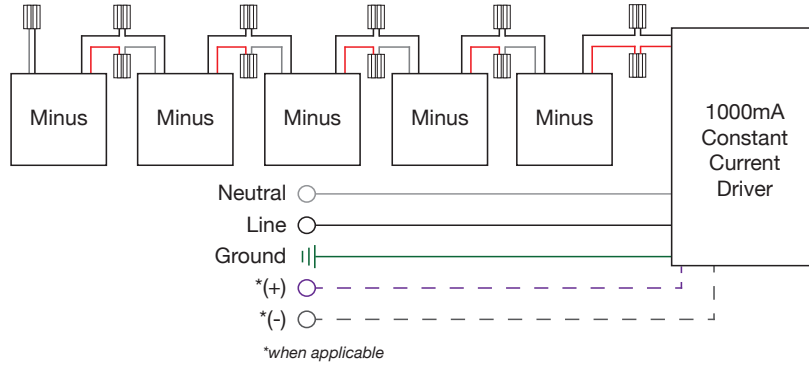
\*Driver enclosure required where applicable.

\*\*Discontinued Lutron product from 2022.

### 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 6 inches (15cm) 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 12V Minus Products - [EU]



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

**Fixture Leads Out**  
Black with Black  
White with Red

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

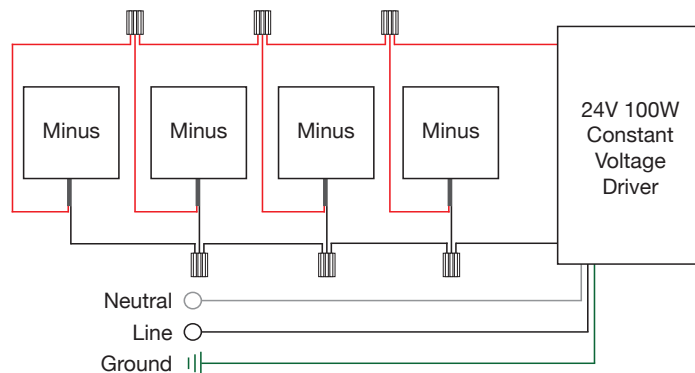
### Additional Considerations

The above wiring diagram applies only to 12V 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 Power Supply (1000mA 60W) 1-4 Minus 16AWG - 100ft (45m)
- Apure Phase Dimmable (1000mA 29W) 1-2 Minus 16AWG - 100ft (45m)
- Apure Phase Dimmable (1000mA 30-65W) 3-5 Minus 16AWG - 100ft (45m)
- Apure DALI, Push, 1-10V (1000mA 30-65W) 1-5 Minus 16AWG - 100ft (45m)

**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.

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



**Fixture Leads**  
Red (+)  
Black (-)

### 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 Constant Voltage Driver (96W 24VDC) 1-4 Minus ≤16AWG - 150ft (45m)
- Lutron Hi-Lume Constant Voltage Driver (96W 24VDC) 1-4 Minus ≤16AWG - 150ft (45m)

**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.