

EcoSystem® H-Series LED Driver

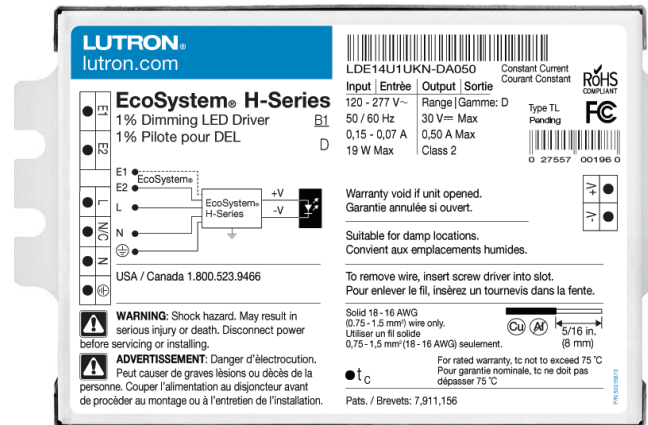
EcoSystem® H-Series LED Drivers provide a high-performance solution for any space, in any application. They provide smooth, continuous dimming down to 1% of output current, and fade smoothly between 0% and 1% when turned on and off.

Features

- Fades smoothly between 0% and 1% when turned on and off.
- Continuous, flicker-free dimming from 100% to 1%¹.
- Guaranteed dimming performance when used with Lutron® controls.
- Guaranteed compatibility with Energi Savr Node™ units with EcoSystem®, GRAFIK Eye® QS with EcoSystem®, PowPak® dimming module with EcoSystem®, and Quantum® systems, allowing for integration into a planned or existing EcoSystem® lighting control solution.
- Protected from miswires of input power to EcoSystem® control inputs up to 277 V~.
- Rated lifetime of 50,000 hours at 75 °C (167 °F) calibration point (t_c).
- Type TL Rated.
- FCC Part 15 compliant for commercial applications at 120–277 V~.
- 100% performance tested at factory.
- RoHS compliant.
- Non-volatile memory restores all settings after power failure.
- For more information please visit:
www.lutron.com/EcoSystemHseriesLED

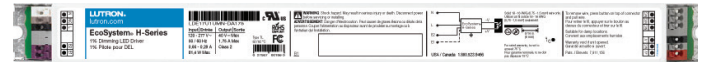
EcoSystem® Features

- Simpler to wire and more reliable than 0–10 V~.
- Guarantees compatibility between Lutron® controls, drivers, and sensors.
- Accommodates zone changing without rewiring.
- Link to Lutron® Quantum® Total Light Management System to monitor lighting power consumption.



EcoSystem® H-Series LED Driver, case type K

3.00 in (76 mm) W x 1.00 in (25 mm) H x
4.90 in (124 mm) L



EcoSystem® H-Series LED Driver, case type M

1.18 in (30 mm) W x 1.00 in (25 mm) H x
14.13 in (359 mm) L

¹ Light output at 1% depends on the efficacy of the light engine used with the driver.

Job Name:

Model Numbers:

Job Number:

Specifications

Regulatory Approvals and Compliance

- Lutron® Quality Systems registered to ISO 9001.2008
- Manufacturing facilities employ ESD reduction practices that comply with the requirements of ANSI/ESD S20.20
- Meets ANSI C62.41 category A surge protection standards up to and including 4 kV
- FCC Part 15 compliant for commercial applications at 120–277 V~
- Meets UL® 8750, “Light Emitting Diode (LED) Equipment For Use in Lighting Products”
- Type TL rated
- Class 2 output
- K-case type meets LED driver requirements for Energy Star version 1.2 in designated areas
- M-case type meets Power Factor and THD: requirements of DLC (version 9/27/13) above 50% of maximum rated output power

Performance

- Fades smoothly between 0% and 1% when turning on and off.
- Dimming Range: 100% to 1%¹
- Operating Voltage: 120 V~ to 277 V~ at 50/60 Hz
- Lifetime: 50,000 hours when calibration point (t_c) at 75 °C (167 °F)²
- For rated warranty, t_c not to exceed 75 °C (167 °F) (maximum rated temperature)²
- Patented thermal fold back protection
- LED lighting turns on to any dimmed level without flashing to full brightness
- Non-volatile memory restores all driver settings after power failure
- Typical standby power consumption: 0.2 W at 120 V~ and 0.3 W at 277 V~

- Open-circuit protected output
- Short-circuit and overload-protected output
- Class 2 output designed to withstand hot swap
- Inrush current less than NEMA 410-2011 limit
- Dimming Method:
 - Constant-current reduction dimming provides video-friendly dimming
 - PWM dimming below 5% (240 Hz)

Environmental

- Sound rated: Class A inaudible in 24 dBA ambient
- Relative Humidity: maximum 90% non-condensing
- Minimum Operating Ambient Temperature: $t_a = 0\text{ °C}$ (32 °F)³
- Indoor use only
- Rated for dry and damp locations

Driver Wiring and Mounting

- Driver is grounded by a mounting screw to the grounded fixture or by terminal connection
- Terminal blocks on the driver accept one solid wire per terminal from 18 to 16 AWG (0.75 to 1.5 mm²)
- Fixture must be grounded in accordance with local and national electrical codes
- Maximum driver-to-LED light engine wire length for:

| Wire Gauge | Maximum Lead Length | | |
|--------------------------------|---------------------|------------------|-----------------|
| | 200 mA to 700 mA | 710 mA to 1.50 A | 1.51 A to 2.10A |
| 18 AWG (0.75 mm ²) | 30 ft (9 m) | 15 ft (4.5 m) | 10 ft (3 m) |
| 16 AWG (1.5 mm ²) | 35 ft (10.5 m) | 25 ft (7.5 m) | 15 ft (4.5 m) |
| 14 AWG (2.5 mm ²)* | 50 ft (15 m) | 40 ft (12 m) | 25 ft (7.5 m) |
| 12 AWG (4.0 mm ²)* | 100 ft (30 m) | 60 ft (18 m) | 40 ft (12 m) |

* To use wire gauges larger than the terminal blocks' rated gauge of 18 to 16 AWG (0.75 mm² to 1.5 mm²), refer to **Terminal Wiring Gauges** diagram. The 18 to 16 AWG (0.75 mm² to 1.5 mm²) wires connected to the driver should be less than 3 ft (0.9 m).

¹ Light output at 1% depends on the efficacy of the light engine used with the driver.

² To maintain warranty, installer is responsible for ensuring that the driver calibration point does not exceed 75 °C (167 °F).

³ Where t_a is the temperature of the air directly surrounding the driver.

| | |
|--------------------|-----------------------|
| Job Name: | Model Numbers: |
| Job Number: | |

How to Build a Model Number, M-Case Type: EcoSystem® H-Series (up to 75 W) LED Driver



EcoSystem® H-Series LED Driver, M-case type

LDE1 U1UMN- A

example: LDE13U1UMN-BA070
 0.70 A, 15 W to 28 W, 21.5–40 V_{DC}** LED driver
 For further assistance selecting your model number, contact our LED Center of Excellence at LEDs@lutron.com

LED Load Output Range
Class 2 Constant Current
 B = 0.50 A to 1.25 A, 20–40 V_{DC}*, 15 W to 35 W
 C = 0.88 A to 1.75 A, 20–40 V_{DC}*, 25 W to 50 W
 D = 1.25 A to 2.10 A, 20–40 V_{DC}*, 35 W to 75 W
 T = 0.40 A to 0.83 A, 30–50 V_{DC}*, 15 W to 35 W
 U = 0.70 A to 1.33 A, 30–50 V_{DC}*, 25 W to 50 W
 V = 1.00 A to 1.88 A, 30–50 V_{DC}*, 40 W to 75 W

LED Load Power Range
 3 = Use when **LED Load Output Range** is “B” or “T”
 5 = Use when **LED Load Output Range** is “C” or “U”
 7 = Use when **LED Load Output Range** is “D” or “V”


Current Level (for Constant Current):
 040 = 0.40 A: . . . 210 = 2.10 A

Attention: Model numbers may appear similar to Lutron® Hi-lume® A-Series drivers, but EcoSystem® H-Series drivers are not a direct model-for-model replacement for Hi-lume® A-Series drivers. Please note the driver’s output rating and the load ratings to select the correct product for your fixture.

* Output voltage range changes with output current and according to power limits. Check driver specifications on following pages carefully to understand output voltage range of a particular SKU. Purchaser is responsible for electrical compatibility between LED driver and LED load.
 ** Minimum voltage of LDE13U1UMN-BA070 limited by 15 W minimum power.

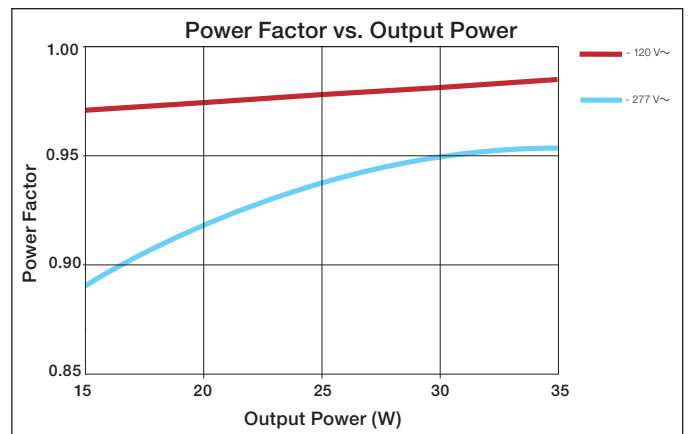
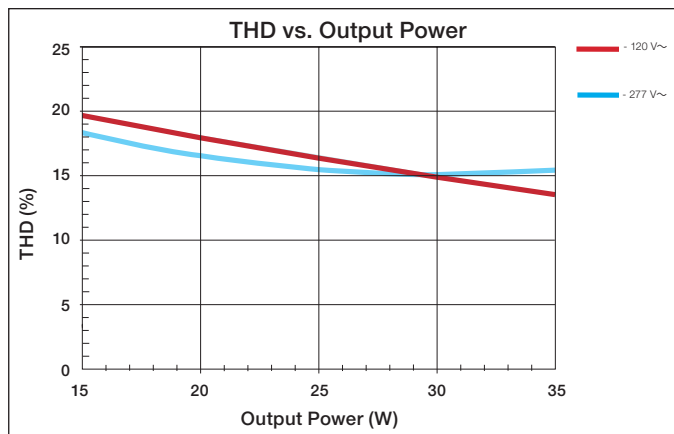
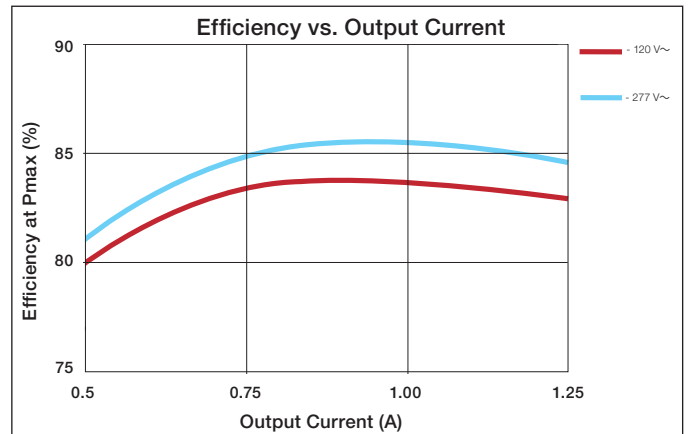
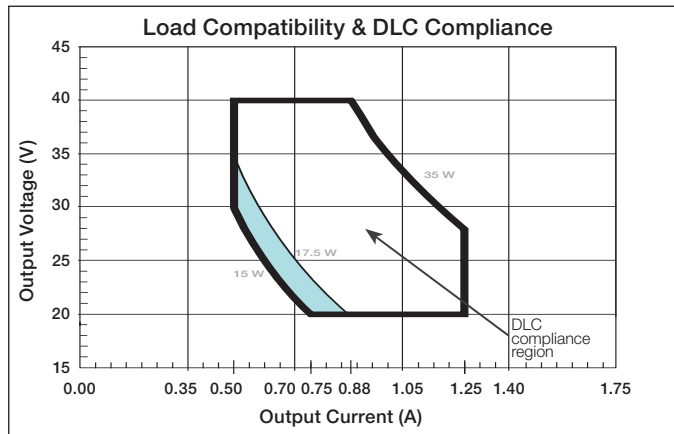
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| Job Name: | Model Numbers: |
| Job Number: | |

M-Case Model Numbers - "B" Output Range

| Driver Type | Output Voltage | Output Current | Output Power | Standards Recognition | Maximum Rated Temp. @ t_c for Warranty |
|-----------------------------------|-------------------|----------------|--------------|---|--|
| Constant Current Driver (Class 2) | 20–40 V \approx | 0.50–1.25 A | 15–35 W |  Type TL 84 °/65 °C | 75 °C |

Typical Performance Specifications:

| Parameter | Value | Test Conditions |
|-------------------|--------|--|
| Input Current | 0.15 A | $V_i = 277\text{ V}\sim$, $t_a = 25\text{ }^\circ\text{C}$, $I_o = 0.88\text{ A}$, $V_o = 40\text{ V}\approx$, Maximum Light Output LDE13U1UMN-BA088 |
| Power Factor | 0.96 | |
| THD | 15% | |
| Driver Efficiency | 85% | |



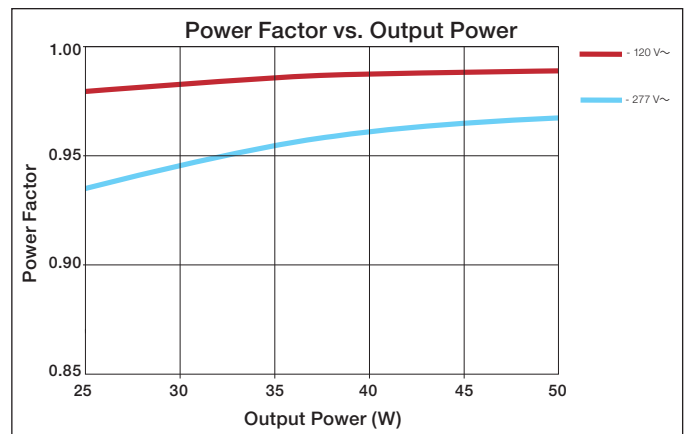
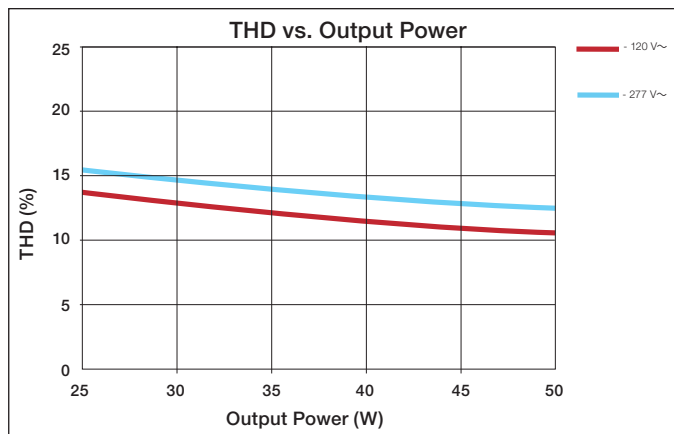
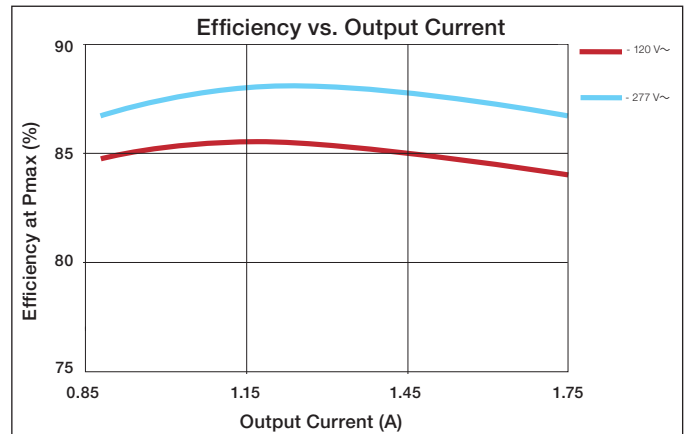
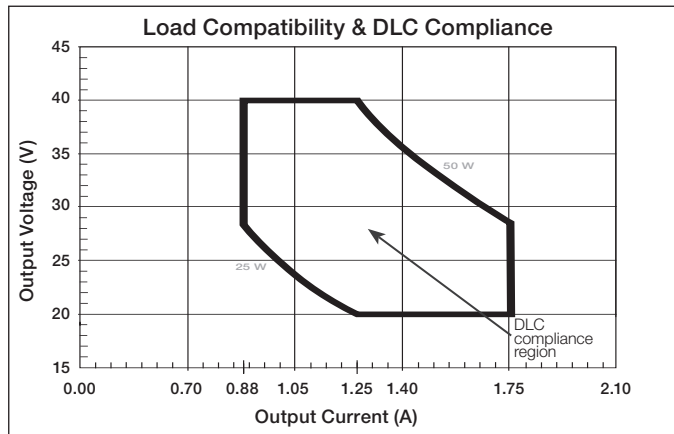
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| Job Name: | Model Numbers: |
| Job Number: | |

M-Case Model Numbers - "C" Output Range

| Driver Type | Output Voltage | Output Current | Output Power | Standards Recognition | Maximum Rated Temp. @ t_c for Warranty |
|-----------------------------------|-------------------|----------------|--------------|--|--|
| Constant Current Driver (Class 2) | 20–40 V \approx | 0.88–1.75 A | 25–50 W | c UL US Type TL 80 °/76 °C | 75 °C |

Typical Performance Specifications:

| Parameter | Value | Test Conditions |
|-------------------|--------|--|
| Input Current | 0.21 A | $V_i = 277\text{ V}\sim$, $t_a = 25\text{ }^\circ\text{C}$, $I_o = 1.25\text{ A}$, $V_o = 40\text{ V}\approx$, Maximum Light Output LDE15U1UMN-CA125 |
| Power Factor | 0.97 | |
| THD | 13% | |
| Driver Efficiency | 88% | |



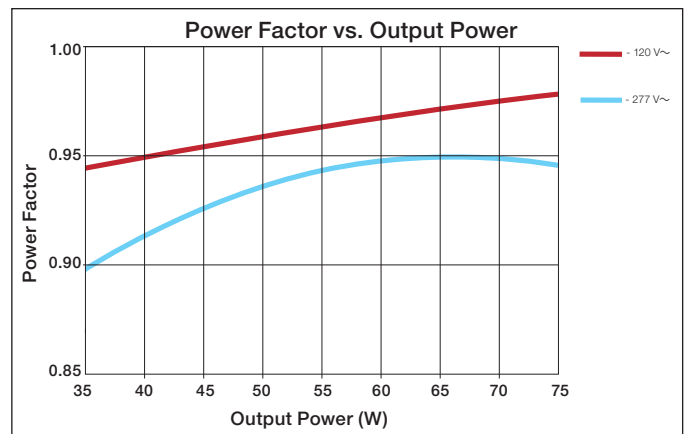
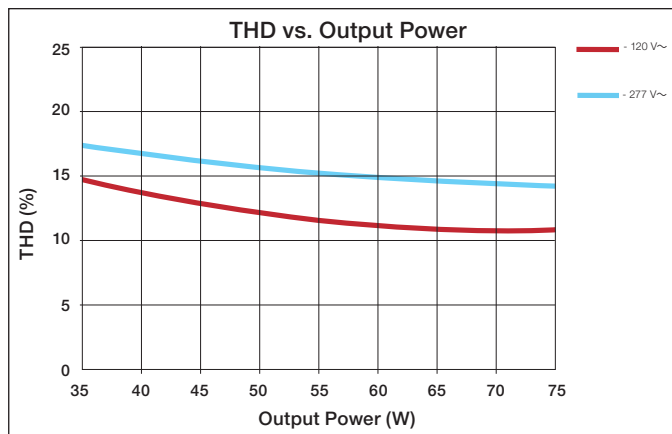
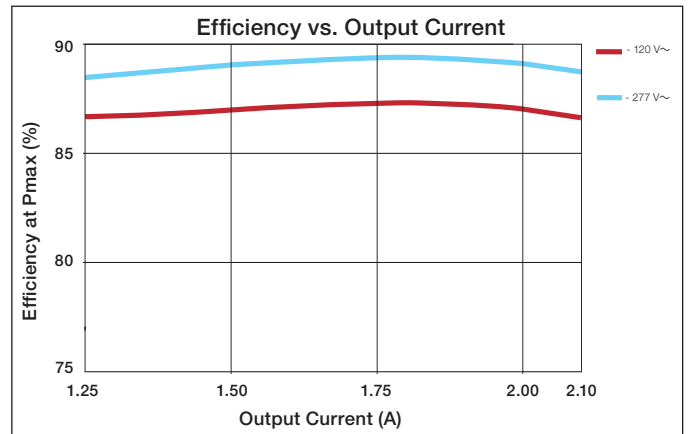
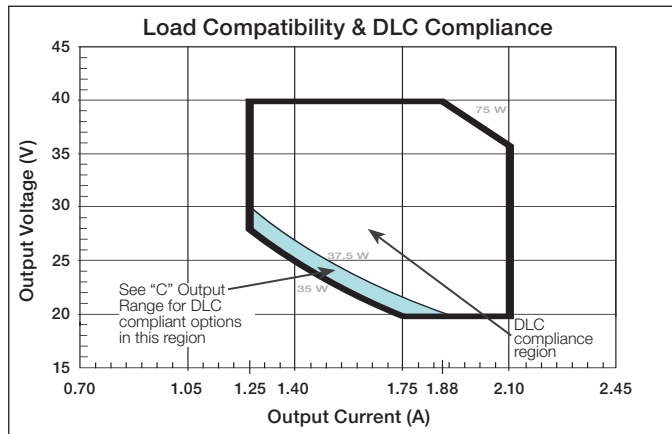
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| Job Name: | Model Numbers: |
| Job Number: | |

M-Case Model Numbers - "D" Output Range

| Driver Type | Output Voltage | Output Current | Output Power | Standards Recognition | Maximum Rated Temp. @ t_c for Warranty |
|-----------------------------------|-------------------|----------------|--------------|---------------------------------|--|
| Constant Current Driver (Class 2) | 20–40 V \approx | 1.25–2.10 A | 35–75 W | UL Type TL 82 °/82 °C | 75 °C |

Typical Performance Specifications:

| Parameter | Value | Test Conditions |
|-------------------|--------|--|
| Input Current | 0.31 A | $V_i = 277\text{ V}\sim$ $t_a = 25\text{ }^\circ\text{C}$, $I_o = 1.88\text{ A}$, $V_o = 40\text{ V}\approx$, Maximum Light Output LDE17U1UMN-DA188 |
| Power Factor | 0.95 | |
| THD | 13% | |
| Driver Efficiency | 89% | |



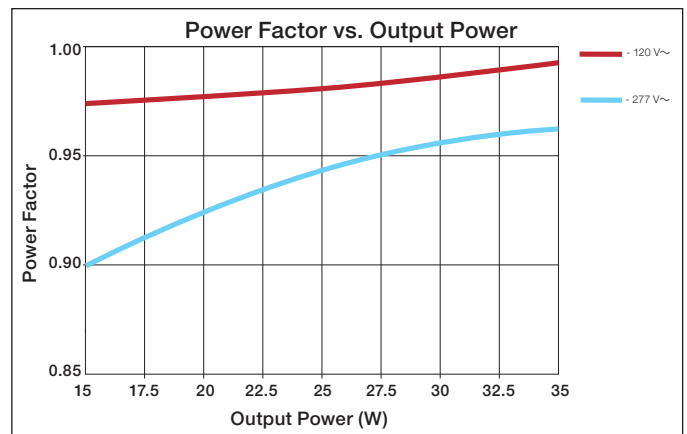
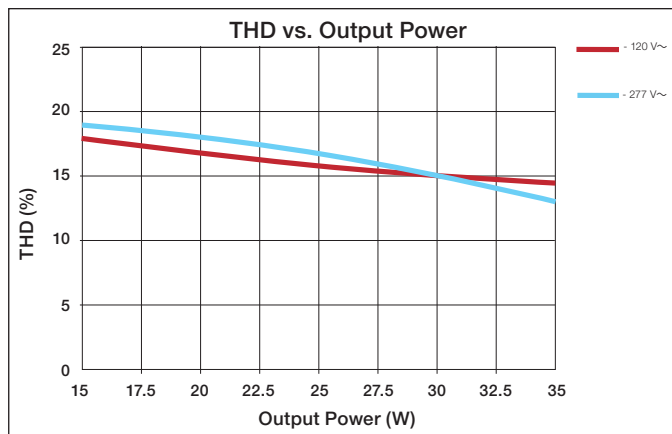
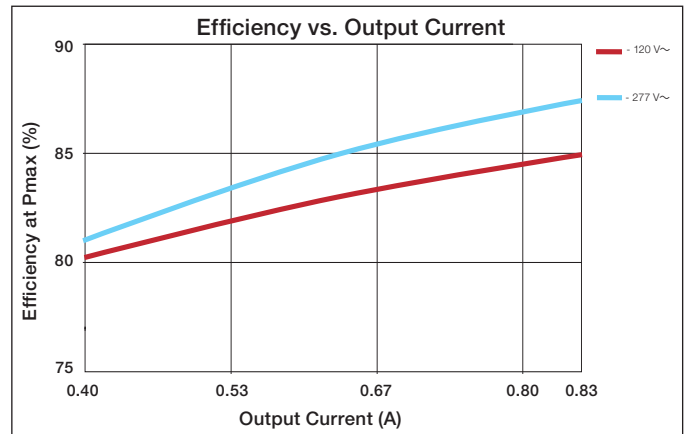
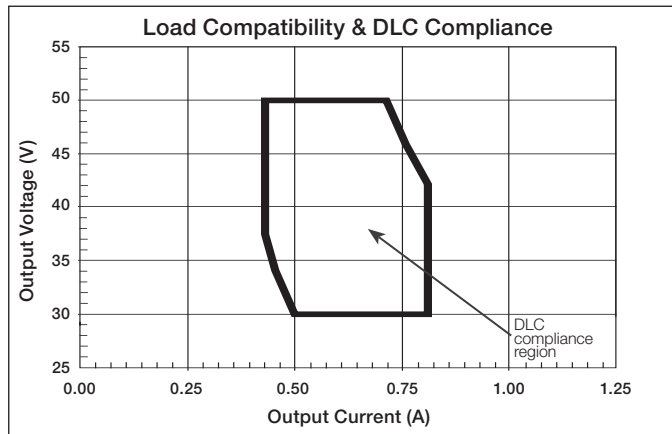
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| Job Name: | Model Numbers: |
| Job Number: | |

M-Case Model Numbers - "T" Output Range

| Driver Type | Output Voltage | Output Current | Output Power | Standards Recognition | Maximum Rated Temp. @ t_c for Warranty |
|-----------------------------------|---------------------------------|----------------|--------------|-----------------------|--|
| Constant Current Driver (Class 2) | 30—50 V $\overline{\text{---}}$ | 0.40—0.83 A | 15—35 W | Type TL pending | 75 °C |

Typical Performance Specifications:

| Parameter | Value | Test Conditions |
|-------------------|--------|--|
| Input Current | 0.15 A | $V_i = 277 \text{ V}\sim$, $t_a = 25 \text{ }^\circ\text{C}$, $I_o = 0.70 \text{ A}$, $V_o = 50 \text{ V}\overline{\text{---}}$, Maximum Light Output LDE13U1UMN-TA070 |
| Power Factor | 0.97 | |
| THD | 15% | |
| Driver Efficiency | 86% | |



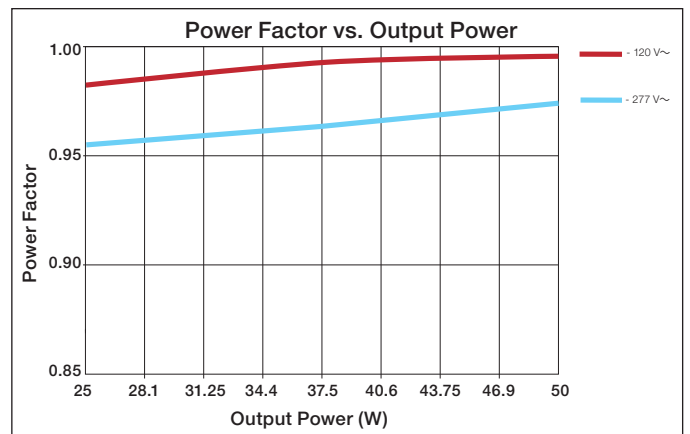
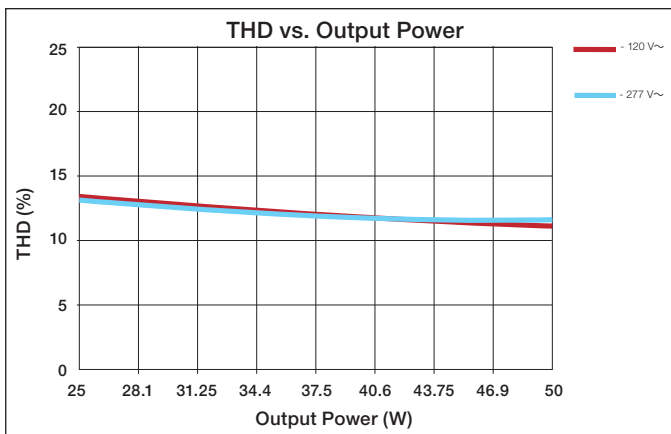
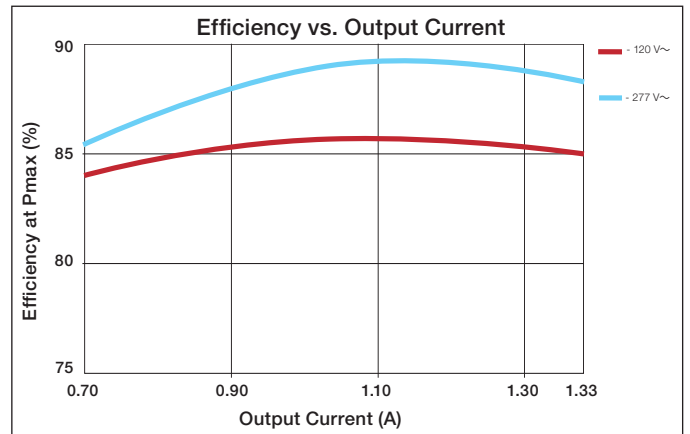
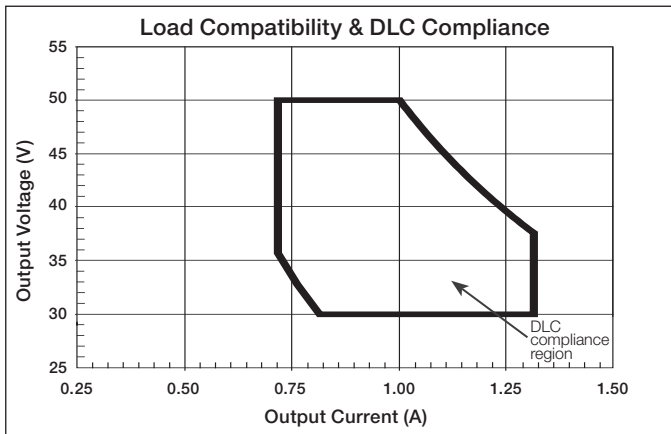
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| Job Name: | Model Numbers: |
| Job Number: | |

M-Case Model Numbers - “U” Output Range

| Driver Type | Output Voltage | Output Current | Output Power | Standards Recognition | Maximum Rated Temp. @ t_c for Warranty |
|-----------------------------------|------------------------|----------------|--------------|-----------------------|--|
| Constant Current Driver (Class 2) | 30–50 V $\overline{=}$ | 0.70–1.33 A | 25–50 W | Type TL pending | 75 °C |

Typical Performance Specifications:

| Parameter | Value | Test Conditions |
|-------------------|--------|--|
| Input Current | 0.21 A | $V_i = 277\text{ V}\sim$, $t_a = 25\text{ }^\circ\text{C}$, $I_o = 1.0\text{ A}$, $V_o = 50\text{ V}\overline{=}$, Maximum Light Output LDE15U1UMN-UA100 |
| Power Factor | 0.97 | |
| THD | 11% | |
| Driver Efficiency | 86% | |



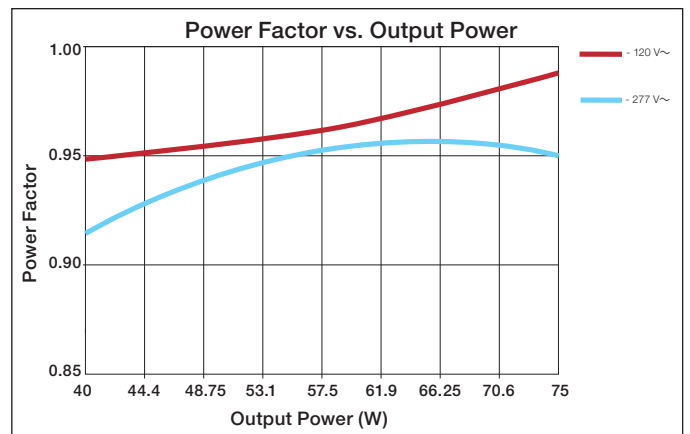
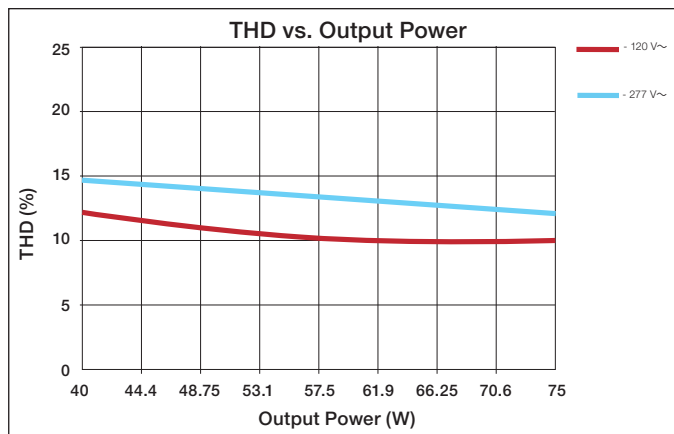
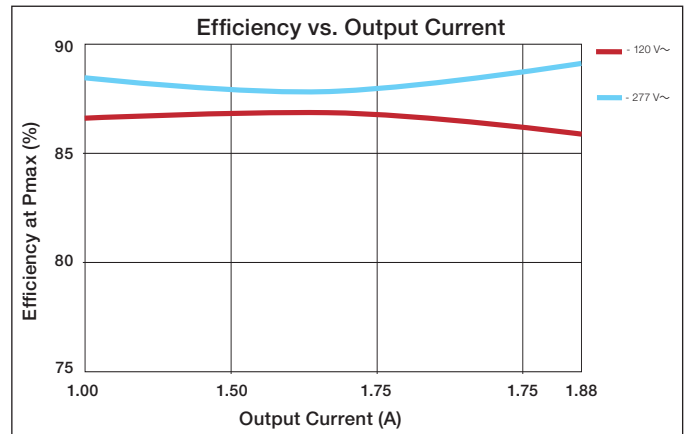
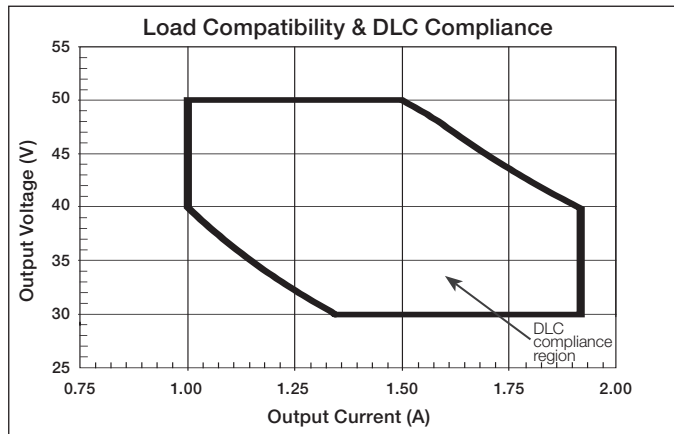
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| Job Name: | Model Numbers: |
| Job Number: | |

M-Case Model Numbers - “V” Output Range

| Driver Type | Output Voltage | Output Current | Output Power | Standards Recognition | Maximum Rated Temp. @ t_c for Warranty |
|-----------------------------------|-------------------|----------------|--------------|-----------------------|--|
| Constant Current Driver (Class 2) | 30–50 V \approx | 1.00–1.88 A | 40–75 W | Type TL pending | 75 °C |

Typical Performance Specifications:

| Parameter | Value | Test Conditions |
|-------------------|--------|---|
| Input Current | 0.32 A | $V_i = 277\text{ V}\sim$, $t_a = 25\text{ }^\circ\text{C}$, $I_o = 1.5\text{ A}$, $V_o = 50\text{ V}\approx$, Maximum Light Output LDE17U1UMN-VA150 |
| Power Factor | 0.98 | |
| THD | 13% | |
| Driver Efficiency | 88% | |



| | |
|-------------|----------------|
| Job Name: | Model Numbers: |
| Job Number: | |