

APMZ050C135UD LED Drivers

Replacement BU Voltage driver for use on the following Appleton™ LED Luminaires: 3,500 and 5,500 Lumen Mercmaster™ Generation 3 Zone 1 LED and 3000, 4000, 5000 and 7000 Lumen FELED Series Nonmetallic LED Luminaires

Features

- Input voltage: 120–277 Vac
- Built-in active PFC function: 0.98Typ.
- Built-in lightning protection
- High efficiency: 87% Typ.
- Waterproof (IP66)
- Constant Current / 0–10V Dimming
- Protection: OVP, SCP, OTP

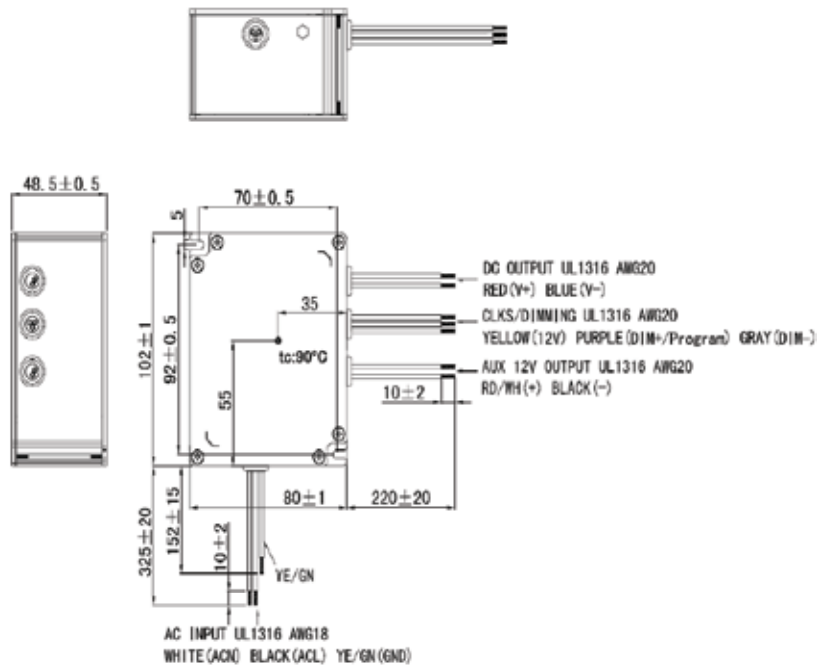


NEC/CEC/IEC Compliances

- UL8750; UL1012; CAN/CSA-C22.2 No.107-01
- IEC/EN61347-1; IEC/EN61347-2-13; IEC60079-0, IEC60079-18

| Output Current | Input Voltage | Max. Output Power | Typical Efficiency | Typical Power Factor | Used in BH Luminaire Models | Part Number |
|----------------|---------------------------|-------------------|--------------------|----------------------|-----------------------------|-----------------|
| 500 mA | 120-277 Vac / 170-300 Vdc | 50 W | 82% | 0.9 | MGZxL3xxxBU | APMZ050C135UD50 |
| 550 mA | 120-277 Vac / 170-300 Vdc | 50 W | 82% | 0.9 | FELED3 | APMZ050C135UD55 |
| 675 mA | 120-277 Vac / 170-300 Vdc | 50 W | 85% | 0.9 | FELED7 | APMZ050C135UD67 |
| 780 mA | 120-277 Vac / 170-300 Vdc | 50 W | 86% | 0.92 | MGZxL5xxxBU | APMZ050C135UD78 |
| 800 mA | 120-277 Vac / 170-300 Vdc | 50 W | 86% | 0.92 | FELED4 | APMZ050C135UD80 |
| 950 mA | 120-277 Vac / 170-300 Vdc | 50 W | 86% | 0.92 | FELED5 | APMZ050C135UD95 |

Dimensions in Millimeters (Inches)

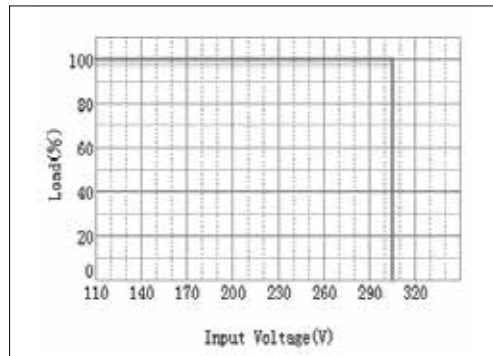


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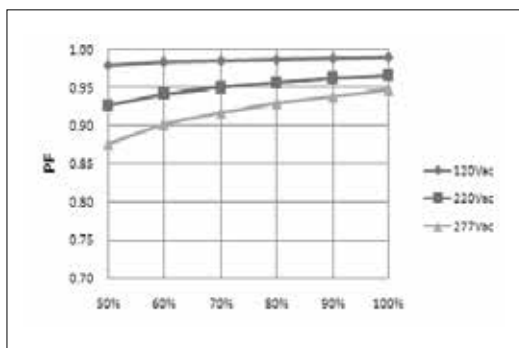
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Diagrams

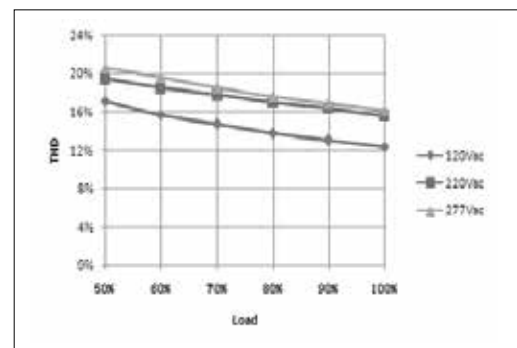
Derating Curve



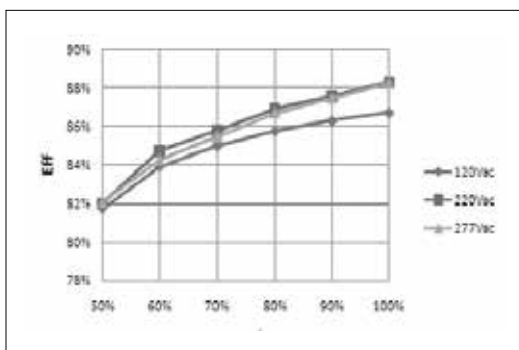
Power Factor vs. Load Curve



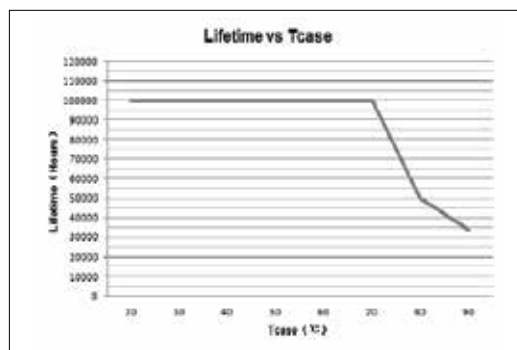
THD Curve



Efficiency vs. Load Curve



Lifetime vs. Driver Tcase



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Specifications (at +25 °C [+77 °F] ambient unless specified otherwise) ①

| | | |
|-----------------|------------------------------|---|
| Input | Efficiency (120 Vac) ② | 86% (Typical), >86% at full load |
| | Efficiency (230 Vac) ② | 87% (Typical), >88% at full load |
| | Voltage Range (V) | 108–305 Vac |
| | Voltage Rated (V) | 120–277 Vac, or 170–300 Vdc (min.–max.) |
| | Frequency Range (Hz) | 47 ~ 63 |
| | Power Factor | 0.95 (Min.) at 120~230 Vac, with 100% load |
| | | 0.90 (Min.) at 120~277 Vac, with 60%~100% load |
| | THD | 15% (Max.) 120 Vac~220 Vac at full load |
| | | 20% (Max.) at 120 Vac~277 Vac, with 60%~100% load |
| | AC Current (Max.) | 0.6 A at 120 Vac input, 0.35 A at 230 Vac |
| | Inrush Current (Max.) | 65 A at 230 Vac input +25 °C (+77 °F) Cold Start (time wide=500 uS, measured at 50% Ipeak) |
| | Leakage Current (Max.) | 0.75 mA at 277 Vac, 60 Hz |
| Output | Output Voltage Range (V) | 56-22 |
| | Output Current Range (mA) | 90–1350 |
| | Rated Power (W) | 50 (max.) |
| | Ripple Current | <10% [(PK-AV) / AV] full load |
| | Current Tolerance | 5% |
| | Line Regulation | 1% |
| | Load Regulation | 3% |
| | Turn On Delay Time | 0.5s (typ.) |
| Dimming Control | 12 Vdc Output Voltage (Vdc) | 10.8 V min. ~ 12 V typ. ~ 13.2 V max. |
| | 12 Vdc Output Current (mA) | 0 mA ~ 20 mA max. |
| | 0 ~ 10V / DMI+ Voltage | Absolute maximum voltage - 10 V min. ~ 20 V max. |
| | 0 ~ 10V / DMI+ Short Current | 280 uA ~ 450 uA (DIM(+)=0) |
| | Dimming Function | 0 ~ 10 V / 10% Io ~ 100% Io ref. |
| Protection | | <75 |
| | Over Voltage (V) | Protection type: Voltage limiting output will not exceed the upper limit voltage, recovers automatically after fault condition is removed. |
| | Short Circuit | Protection type: Hiccup mode. Recovers automatically after short is removed. |
| | Over Temperature | Protection type: Decrease output current. When Tc reaches +100 °C + / - 10 °(+212 °F + / - 10 °), the output current decrease to approximate 50% of rated value. (See OTP plot.) |
| | Lightning Surge Protection | Per IEEE C62.41.2202 (6 kV, 1.2/50 ms, 8/20 ms combination wave with 2 ohms source impedance, L-N, L-PE, N-PE) |

① All parameters NOT specially mentioned are measured at 230 Vac input, rated load and +25 °C (+77 °F) of ambient temperature.

② Measured at full load and steady-state temperature in +25 °C (+77 °F) ambient (Efficiency will be about 2% lower if measured immediately after startup).

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Specifications (at +25 °C [+77 °F] ambient unless specified otherwise) ①

| | | |
|--------------|--------------------------|---|
| Environment | Maximum Case Temperature | +90 °C (+194 °F) |
| | Minimum Case Temperature | -40 °C (-40 °F) |
| | Operating Humidity | 20 ~ 95% RH non-condensing |
| | Storage Temp., Humidity | -40 ~ +85 °C (-40 ~ +185 °F) 10-95% RH |
| | Vibration | 10–500 Hz, 5G 12 min/cycle, period for 72 min. each along X, Y, Z axes |
| Safety & EMC | Agency Approbations | UL8750; UL1012; CAN/CSA-C22.2 No.107-01; IEC/EN61347-1; IEC/EN61347-2-13; IEC60079-0; IEC60079-18 |
| | Withstand Voltage | I / P-O / P:3.75 K Vac I / P-FG:1.875 KV O / P-FG:1.5 KV |
| | Isolation Resistance | I / P-O / P:100M Ohms (500 Vdc / +25 °C [+77 °F] / 70%RH) |
| | EMC Emission | FCC PART15 Class B, EN55015, EN61000-3-2 Class C, EN61000-3-3 |
| | EMC Immunity | EN61000-4-2,3,4,5,6,8,11, EN61000-4-5: Line to Neutral: ±6 kV ; Line to GND: ±6 kV ; Neutral to GND: ±6 kV. IEEE/ANSI C62.41.2 Transient Surge Requirements, combi wave 2 ohm source impedance. |
| Others | MTBF | 300,000 hours, measured at full load, +25 °C (+77 °F) ambient temperature, MIL-HDBK-217F (+25 °C [+77 °F]) |
| | Lifetime | Refer to plot |
| | Dimension | 102 x 80 x 48.5 (mm) (LxWxH); (4.02 x 3.15 x 1.91 inches) |
| | Weight (Typ.) | 930 g (2.05 lbs) |

① All parameters NOT specially mentioned are measured at 230 Vac input, rated load and +25 °C (+77 °F) of ambient temperature.

② Measured at full load and steady-state temperature in +25 °C (+77 °F) ambient (Efficiency will be about 2% lower if measured immediately after startup).