APMS050C135HD LED Drivers

BH Voltage driver for use on the following Appleton™ LED Luminaires: 3500, 4400 and 5500 Lumen Mercmaster™ LED Low Profile and Industrial Mercmaster LED Low Profile; 3500 and 5500 Lumen Mercmaster LED Generation 3 and Industrial Mercmaster LED Generation 3; 3700 and 5400 Lumen Code•Master™ LED, 5150 Lumen Code•Master Jr. LED and Hazardous Rigmaster™ LED, Industrial Rigmaster LED, Explosionproof Rigmaster LED, and NEC/CEC Viamaster™ LED. ①

Features

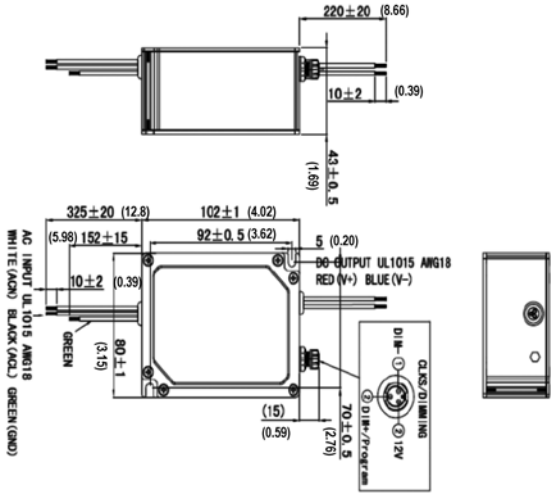
- Input voltage: 347-480 Vac
- Built-in active PFC function: 0.98 Typ.
- Built-in Lightning protection.
- High efficiency: 87% Typ.
- Waterproof (IP66)
- Constant Current / 0-10V Dimming
- Clock Dimming (CLK) / PWM Dimming
- Protection: OVP, SCP, OTP
- Full Power at 65% Io max ~ 100% Io max (Constant Power)
- UL Type HL

NEC/CEC Compliances

- UL8750, UL1310
- CSA 250.13

Output Current	Input Voltage	Max. Output Power	Typical Efficiency	Typical Power Factor	Used in BH Luminaire Models	Part Number
500 mA	347-480 Vac	50 W	87%	0.98	MLGL3, CMLED10	**APMS050C135HD50**
600 mA	347-480 Vac	50 W	87%	0.98	RM*2, IRM*2, ERM*2	**APM050C135HD060**
700 mA	347-480 Vac	50 W	87%	0.98	NEC rated LLEDA12, LLEDA15, LLEDA17 ②	**APMS050C135HD70**
720 mA	347-480 Vac	50 W	87%	0.98	MLLED2	**APMS050C135HD72**
750 mA	347-480 Vac	50 W	87%	0.98	CMLED15	**APMS050C135HD75**
780 mA	347-480 Vac	50 W	87%	0.98	MLGL5, CMLED15	**APMS050C135HD78**
1000 mA	347-480 Vac	50 W	87%	0.98	MLLED3	**APMS050C135HD10**
1040 mA	347-480 Vac	50 W	87%	0.98	RM*4, IRM*4, ERM*4	**APM050C135HD104**
1300 mA	347-480 Vac	50 W	87%	0.98	MLLED4	**APMS050C135HD13**
1350 mA	347-480 Vac	50 W	87%	0.98	CJLL3	**APMSO50C135HD**

Dimensions in Millimeters (Inches)



① All drivers are user replaceable in the LED fixtures except for the driver used in the CJLL3 fixture which is not user replaceable.
② Viamaster LLEDA17 model requires a quantity of two LED drivers listed above.

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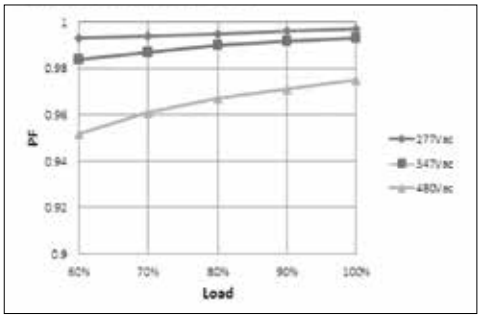
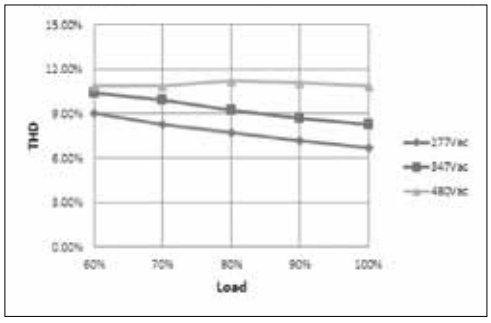
Diagrams

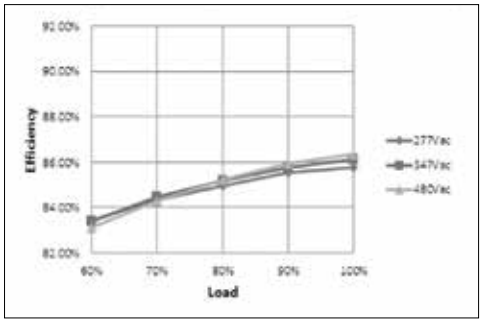
Power Factor vs. Load Curve



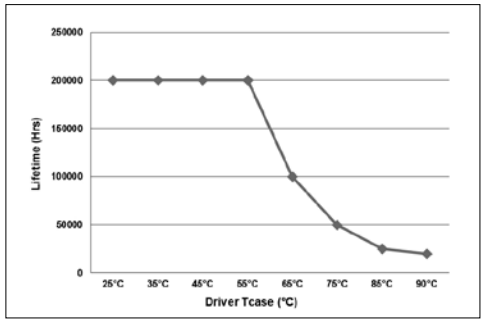
THD Curve



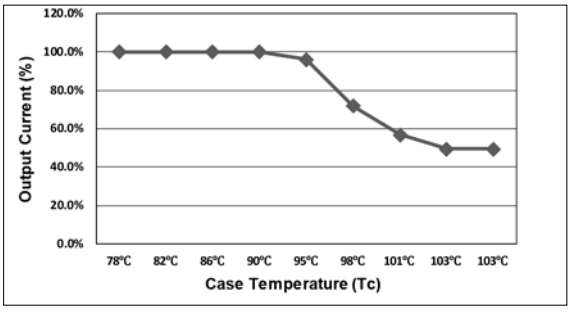
Efficiency vs. Load Curve



Lifetime vs. Driver Tcase



OTP



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APMS050C135HD LED Drivers

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Specifications ②

Input	Efficiency (277 Vac) ③	85% Typical, >83% at full load
	Efficiency (480 Vac) ③	87%, Typical, >85% at full load
	Voltage Range (V)	249–528 Vac
	Voltage Rated (V)	277–480 Vac
	Frequency Range (Hz)	47 ~ 63
	Power Factor	0.96 Typical, at 480 Vac full load
		>0.9 with 50% ~ 100% load, at 277 ~ 480 Vac
	THD	<15% with 80% ~ 100% load, at 277 ~ 480 Vac
		<20% with 50% ~ 100% load, at 277 ~ 480 Vac
	AC Current (Max.)	0.3A MAX at 277 Vac
	Inrush Current (Max.)	65 Amp at 480 Vac input +25 °C (+77 °F) Cold Start (time wide=500 uS, measured at 50% Ipeak.)
	Leakage Current (Max.)	0.75 mA at 480 Vac, 60 Hz
Output	Output Voltage Range (V)	56-22
	Output Current Range (mA)	90-1350
	Rated Power (W)	50 (max.)
	Output Current Settable Range	0.45 - 1.35 A dc
	Constant Power Output Settable Range	65%Io_max ~ 100% Io_max
	Ripple Current	<10% ([PK-AV] / AV), full load
	Current Tolerance	5%
	Line Regulation	3%
	Load Regulation	5%
	Turn On Delay Time	2s (typ.), measured at 277 Vac input
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. Dimming module diagram and dimming curve
Protection	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.)

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② All parameters NOT specially mentioned are measured at 480 Vac input, rated load and +25 °C (+77 °F) of ambient temperature.
③ 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 ②

Environment	Tc	-40 ~ +90 °C (-40 ~ +194 °F) max.
	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	Safety Standard	UL1310 Class 2, UL8750, CSA 250.13
	Withstand Voltage	I / P-O / P:3.75K Vac I / P-FG:2KV O / P-FG:1.5KV
	Isolation Resistance	I / P-O / P:100M Ohms (500 Vdc / +25 °C [+77 °F] / 70%RH)
	EMC Emission	Conducted Emission: FCC PART 15 Class A, Radiated Emission: FCC PART 15 Class A
	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 43 mm (LxWxH); (4.02 x 3.15 x 1.69 inches)
	Weight (Typ.)	710 g (1.57 lb)

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