

APMS050C135UD 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: 90-305 Vac
- Built-in active PFC function: 0.99 Typ.
- High efficiency: 87% Typ.
- Constant current / 0-10V dimming / clock dimming (CLK) / PWM dimming
- Full power at 65%Io max ~ 100%Io max (constant power)
- High surge immunity

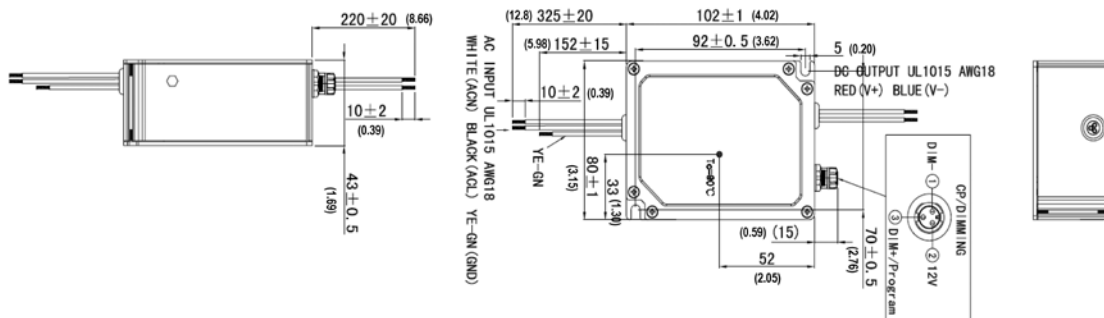
NEC/CEC Compliances

- UL8750, UL1310
- EN61347-1, EN61347-2-13



Output Current	Input Voltage	Max. Output Power	Typical Efficiency	Typical Power Factor	Used in BH Luminaire Models	Part Number
415 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	MLLED2 (Emergency)	APMS050C135UD41
500 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	MLGL3, CMLED10	APMS050C135UD50
510 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	CLED03, CLED06	APMS050C135UD51
550 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	MLLED3 (Emergency)	APMS050C135UD55
600 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	RM*2, IRM*2, ERM*2, CLED07	APM050C135UD060
690 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	MLLED4 (Emergency), CLED04, CLED08	APMS050C135UD69
700 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	NEC rated LLEDA12, LLEDA15, LLEDA17 ②	APMS050C135UD70
720 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	MLLED2	APMS050C135UD72
750 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	CMLED15	APMS050C135UD75
780 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	MLGL5	APMS050C135UD78
900 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	CLED05, CLED10	APMS050C135UD90
1000 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	MLLED3	APMS050C135UD10
1040 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	RM*4, IRM*4, ERM*4	APM050C135UD104
1300 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	MLLED4	APMS050C135UD13
1300 mA	90-305 Vac / 125-300 Vdc	50 W	86%	0.98	CJLL3	APMSO50C135UD

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.

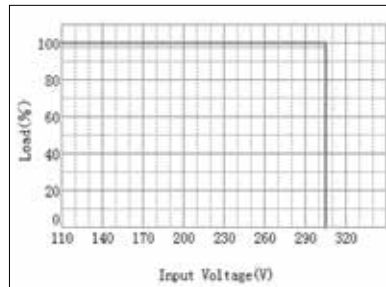
② Viamaster LLEDA17 model requires a quantity of two LED drivers listed above.

APMS050C135UD LED Drivers

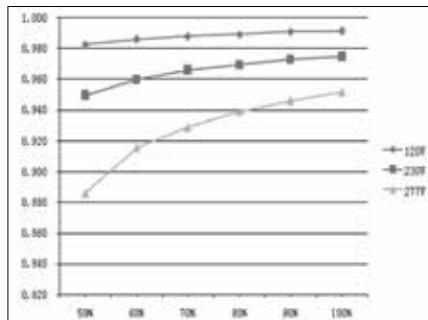
BH Voltage driver for use on the following Appleton™ LED Luminaires: 3500, 4400 and 5500 Lumen Mercmaster™ LED Low Profile and Industrial Mercmaster LED Low Profile; 3500 and 5500 Lumen Mercmaster LED Generation 3 and Industrial Mercmaster LED Generation 3; 3700 and 5400 Lumen Code•Master™ LED, 5150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

Diagrams

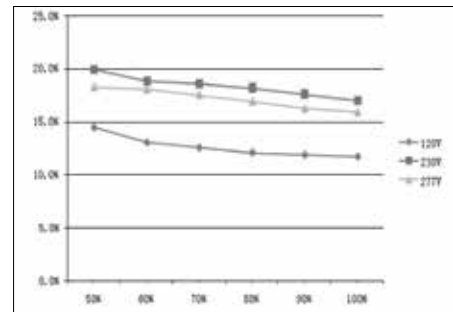
Derating Curve



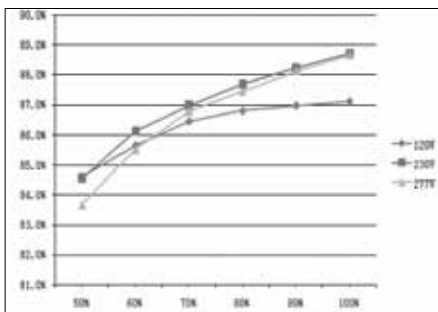
Power Factor vs. Load Curve



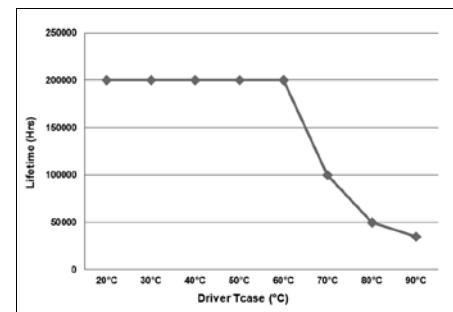
THD Curve



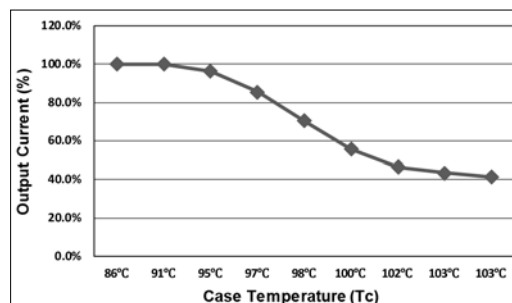
Efficiency vs. Load Curve



Lifetime vs. Driver Tcase



OTP



① All drivers are user replaceable in the LED fixtures except for the driver used in the CJLL3 fixture which is not user replaceable.

APMS050C135UD 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

Specifications ②

Input	Efficiency (120 Vac) ③	86% (Typical), >84% @ full load
	Efficiency (230 Vac) ③	87% (Typical), >85% @ full load
	Voltage Range (V)	108 ~ 305 Vac
	Voltage Rated (V)	120 ~ 277 Vac, or 125-300 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	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
	Output Current Settable Range	0.45-1.35 A dc
	Constant Power Output Set Range	65%-100% of I _{o_max}
	Ripple Current	10% of I _{o_max} . ((PK-AV) / AV), full load)
	Current Tolerance	5%
	Line Regulation	1%
	Load Regulation	3%
	Turn On Delay Time	<1s, at 120 Vac; <0.5s, at 230 Vac
Dimming Control	12 Vdc Output Voltage (Vdc)	10.8-13.2
	12 Vdc Output Current (mA)	20 (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	Default is 0-10 V dimming mode. Other dimming ways like PWM / CLK dimming can be set by software configuration.
Protection	Over Voltage (V) (Typ.)	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 T _c reaches +100 °C + / - 10 °(+212 °F + / - 10 °), the output current decrease to approximate 50% of rated value. (See OTP plot.)

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 All parameters NOT specially mentioned are measured at 230 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).

APMS050C135UD 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

Specifications ②

Environment	Operating Humidity	20 ~ 95% RH
	Tc	-40 ~ +90 °C (-40 ~ +194 °F) max.
	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	UL8750, UL1310, CAN/CSA-C22.2 No. 223-M91, IEC61347-1, IEC61347-2-13
	Withstand Voltage	I / P-O / P:3.75k Vac, I / P-FG:1.875k Vac, O / P-FG:1.5k Vac
	Isolation Resistance	I / P-O / P:100M Ohms (500 Vdc / +25 °C [+77 °F] / 70%RH)
	EMC Emission	FCC Part 15 Class A, 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
	Lifetime	100,000 Hours at Tc +70 °C (+158 °F) (Refer to "Life Time VS. Tcase (Ref.)" Refer to plot.
	Dimension	102 x 80 x 43 (mm) (LxWxH); (4.02 x 3.15 x 1.69 inches)
	Weight (Typ.)	710 g (1.56 lb)

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 All parameters NOT specially mentioned are measured at 230 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).