

# APMS050C135UD LED Drivers

BU 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 Codemaster 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

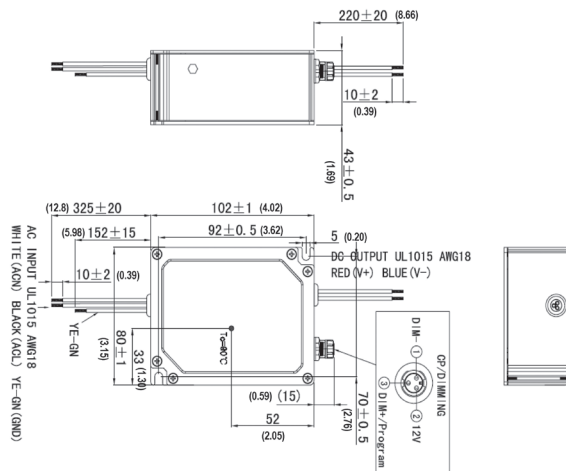
## NEC/CEC Compliances

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



Output Current	Input Voltage	Max. Output Power	Typical Efficiency	Typical Power Factor	Used in BU 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
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	APM050C135UD060
690 mA	90-305 Vac 125-300 Vdc	50 W	86%	0.98	MLLED4 (Emergency)	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
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	APMS050C135UD①

## Dimensions in Millimeters (Inches)



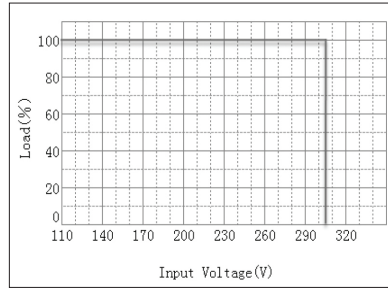
① All drivers are user replaceable in the LED fixtures except for the driver used with the CJLL3 fixtures it is not user replaceable.  
 ② Viamaster LLEDA17 model requires a quantity of two LED drivers listed above.

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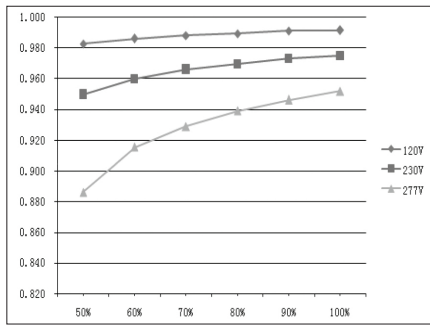
Replacement BU Voltage driver for use on the following Appleton™ LED Luminaires: 3500, 4400 and 5500 Lumen Mercmaster™ LED Low Profile and Industrial Mercmaster LED Low Profile; 3500 and 5500 Lumen Mercmaster LED Generation 3 and Industrial Mercmaster LED Generation 3; 3700 and 5400 Lumen Code•Master™ LED

## Diagrams

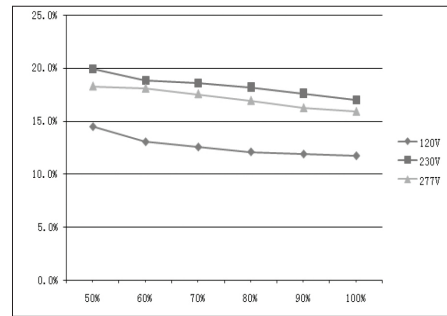
**Derating Curve**



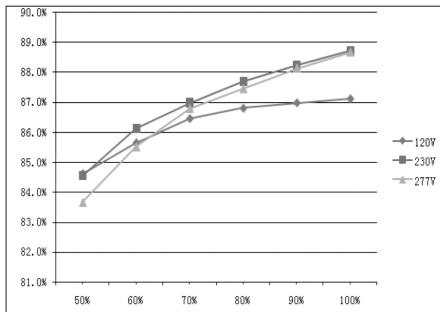
**Power Factor vs. Load Curve**



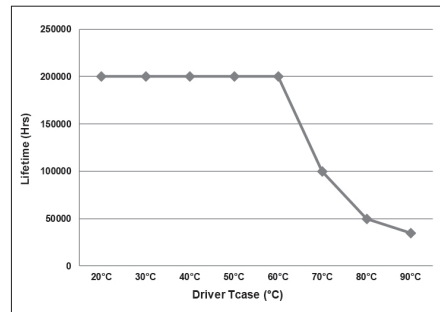
**THD Curve**



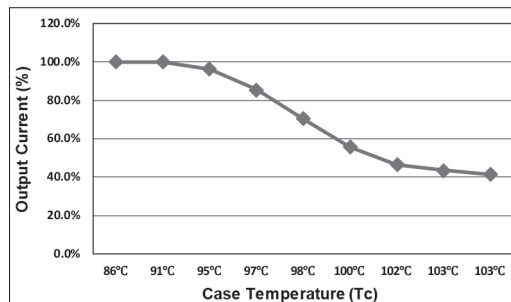
**Efficiency vs. Load Curve**



**Lifetime vs. Driver Tcase**



**OTP**



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Specifications ①		
Input	Efficiency (120 Vac) ②	86% (Typical), >84% @ full load
	Efficiency (230 Vac) ②	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, 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 <sub>o_max</sub>
	Ripple Current	10% of I <sub>o_max</sub> . ((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/DIM+ Voltage	Absolute maximum voltage -10 V min ~ 20 V max
	0 ~ 10V/DIM+ 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.

① All parameters NOT specially mentioned are measured at 230 Vac input, rated load and 25 °C of ambient temperature

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

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## Specifications ①

<b>Protection</b>	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 Tc reaches +100 °C +/- +10 °C, the output current decrease to approximate 50% of rated value. (See OTP plot.)
<b>Environment</b>	Operating Humidity	20 ~ 95% RH
	Tc	-40 °C to +90 °C (max.)
	Storage Temp., Humidity	-40 ~ +85 °C, 10-95% RH
	Vibration	10-500 Hz, 5G 12 min/cycle, period for 72 min each along X, Y, Z axes
<b>Safety &amp; EMC</b>	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 (500VDC/25°C/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:±6kV; Line to GND:±6kV; Neutral to GND: ±6kV.IEEE / ANSI C62.41.2 Transient Surge Requirements, combi wave 2 ohm source impedance.
<b>Others</b>	MTBF	300,000 Hours, measured at full load, +25 °C ambient temperature
	Lifetime	100,000 Hours at Tc +70 °C (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 parameters NOT specially mentioned are measured at 230 Vac input, rated load and 25 °C of ambient temperature

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