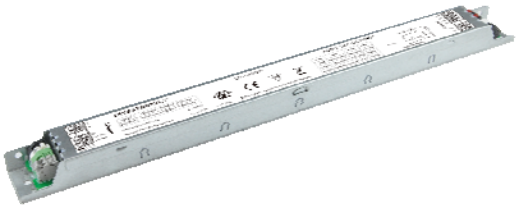
Features

- Non-Isolated Design with Low residual output voltage < 2 kV
- Ultra High Efficiency (Up to 95%)
- Adjustable Output Current (AOC) with External Resistor
- Full Power at Wide Output Current Range (Constant Power)
- Flicker- Free
- Non-dimming Control
- 109,000 Hours Lifetime at 70°C Case Temperature
- Input Surge Protection: DM 2kV, CM 4kV
- Suitable for Luminaires with Protection Class I
- Complies with Zhaga Interface Specification Book 13
- 5 Year Warranty



Description

The *LMT-160SxxxSTF* series is a 160W, constant-current, IP20 LED driver that operates from 198-264 Vac input with excellent power factor. Created for many lighting applications including linear troffer and panel lighting, etc. The high efficiency of these drivers and slim metal case enables them to run cooler, significantly improving reliability and extending product life. To ensure trouble-free operation, protection is provided against over voltage, short circuit, and over temperature.

Models

Adjustable Output Current Range	Full-Power Current Range (1)	Default Output Current	Input Voltage Range(2)	Output Voltage Range	Max. Output Power	Typical Efficiency (3)	Power Factor (3)	Model Number
340-700mA	500-700mA	< 340mA	198~264 Vac 190~250 Vdc	137-320Vdc	160W	95.0%	0.98	LMT-160S070STF
500-1050mA	700-1050mA	< 500mA	198~264 Vac 190~250 Vdc	91-229Vdc	160W	94.5%	0.98	LMT-160S105STF
850-1500mA	1050-1500mA	< 850mA	198~264 Vac 190~250 Vdc	64-153Vdc	160W	94.5%	0.98	LMT-160S150STF

Notes: (1) Output current range with constant power at 160W
(2) Certified voltage range: 220-240Vac
(3) Measured at 100% load and 220Vac input (see below “General Specifications” for details).

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	198 Vac	-	264 Vac	190~250 Vdc
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 240Vac/ 60Hz

Input Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
Input AC Current	-	-	0.85 A	Measured at 100% load and 220 Vac input.
Inrush Current(I^2t)	-	-	2.85 A^2s	At 220Vac input, 25°C Cold Start, Duration =456 μs, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.90	-	-	At 220-240Vac, 50-60Hz, 70%-100% Load (112-160W)
THD	-	-	20%	
THD	-	-	10%	At 220-240Vac, 50-60Hz, 75%-100% Load (120-160W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Ioset	-	5%Ioset	At 100% load condition
Output Current Setting(Ioset) Range LMT-160S070STF LMT-160S105STF LMT-160S150STF	 340 mA 500 mA 850 mA	 - - -	 700 mA 1050 mA 1500 mA	
Output Current Setting Range with Constant Power LMT-160S070STF LMT-160S105STF LMT-160S150STF	 500 mA 700 mA 1050 mA	 - - -	 700 mA 1050 mA 1500 mA	
Total Output Current Ripple (pk-pk)	-	30%Iomax	50%Iomax	At 100% load condition
Output Current Ripple at < 200 Hz (pk-pk)	-	2%Iomax	-	At 100% load condition. Only this component of ripple is associated with visible flicker.
Startup Overshoot Current	-	-	10%Iomax	At 100% load condition
No Load Output Voltage	-	-	400 V	
Line Regulation	-	-	±1%	Measured at 100% load
Load Regulation	-	-	±5%	
Turn-on Delay Time	-	-	0.5 s	Measured at 220-240Vac input, 70%-100% load
Temperature Coefficient of Ioset	-	0.06%/°C	-	Case temperature = 0°C ~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 220 Vac input: LMT-160S070STF Io= 500 mA Io= 700 mA LMT-160S105STF Io= 700 mA Io=1050 mA LMT-160S150STF Io=1050 mA Io=1500 mA	 93.0% 92.5% 92.5% 92.0% 92.5% 91.5%	 95.0% 94.5% 94.5% 94.0% 94.5% 93.5%	 - - - - - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2% lower if measured immediately after startup.)

General Specifications (Continued)

Parameter	Min.	Typ.	Max.	Notes
MTBF	-	398,000 Hours	-	Measured at 220Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	109,000 Hours	-	Measured at 220Vac input, 80%Load and 70°C case temperature; See lifetime vs. Tc curve for the details
Operating Case Temperature for Safety Tc_s	-40°C		+90°C	
Operating Case Temperature for Warranty Tc_w	-40°C		+75°C	Case temperature for 5 years warranty. Humidity: 10% RH to 90% RH; No condensation.
Storage Temperature	-40°C	-	+85°C	Humidity: 5% RH to 95% RH; No condensation.
Dimensions Inches (L × W × H) Millimeters (L × W ×H)	14.18 × 1.18 × 0.83 360 × 30 × 21			
Net Weight	-	295 g	-	

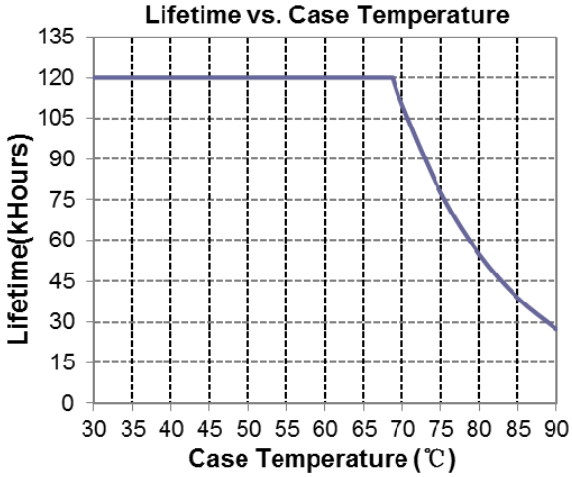
Safety & EMC Compliance

Safety Category	Standard
ENEC & CE	EN 61347-1, EN 61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
CCC	GB 19510.1, GB 19510.14
KS	KS C 7655
Performance	**Standard**
ENEC	EN 62384
EMI Standards	**Notes**
EN 55015/GB 17743(1)	Conducted emission Test &Radiated emission Test
EN 61000-3-2/GB 17625.1	Harmonic current emissions
EN 61000-3-3	Voltage fluctuations & flicker
EMS Standards	**Notes**
EN 61000-4-2	Electrostatic Discharge (ESD): 8 kV air discharge, 4 kV contact discharge
EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test-RS
EN 61000-4-4	Electrical Fast Transient / Burst-EFT
EN 61000-4-5	Surge Immunity Test: AC Power Line: Differential Mode 2 kV, Common Mode 4 kV(2)
EN 61000-4-6	Conducted Radio Frequency Disturbances Test-CS
EN 61000-4-8	Power Frequency Magnetic Field Test
EN 61000-4-11	Voltage Dips
EN 61547	Electromagnetic Immunity Requirements Applies To Lighting Equipment

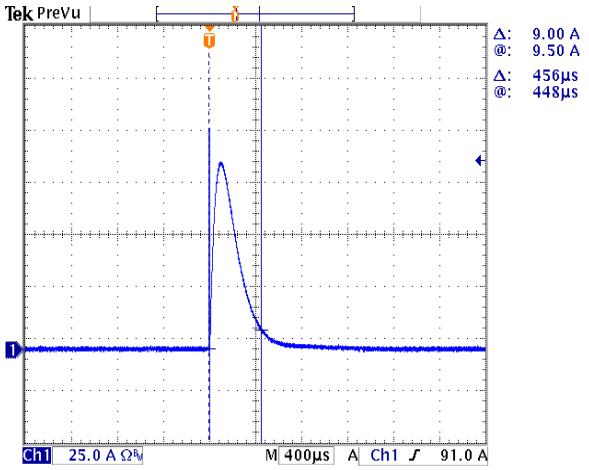
Notes: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(2) To perform electric strength (hi-pot) testing, a shunt between the two CM-SRG connectors should be removed temporarily to prevent the internal gas discharge tube from conducting (as allowed by IEC 60598-1 Clause 10.2). After testing is completed, this shunt must be reinstalled to restore line-to-earth surge protection.

Lifetime vs. Case Temperature

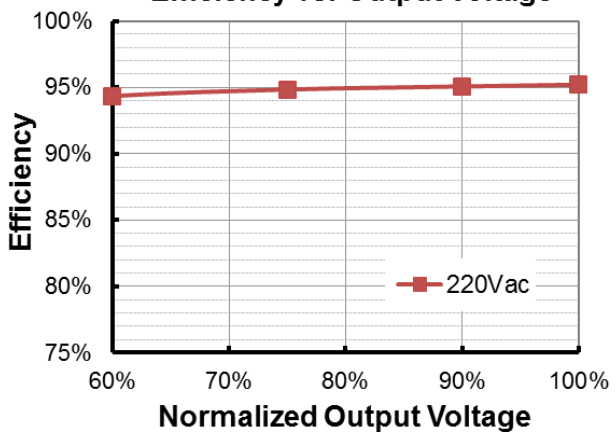


Inrush Current Waveform

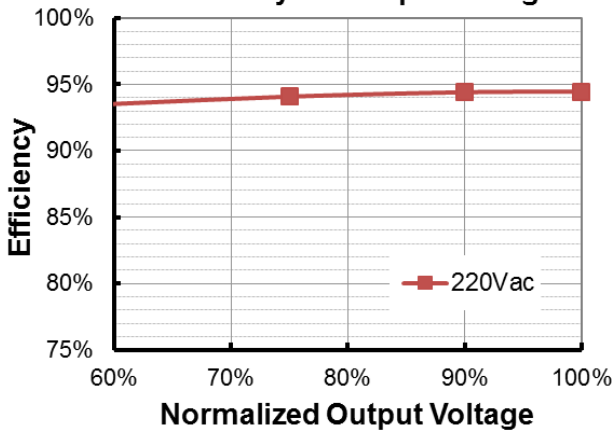


Efficiency vs. Load

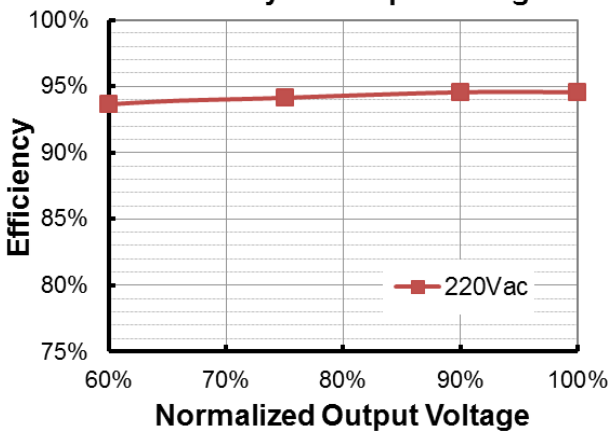
LMT-160S070STF(Io=500mA)



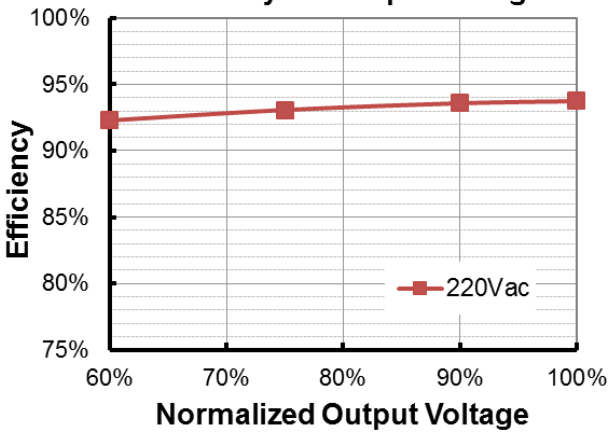
LMT-160S070STF(Io=700mA)



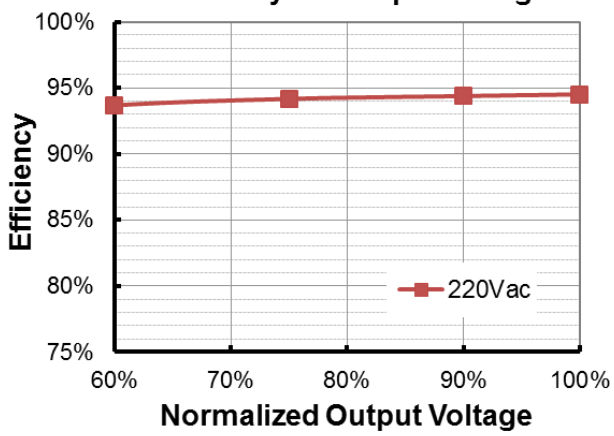
LMT-160S105STF(Io=700mA)



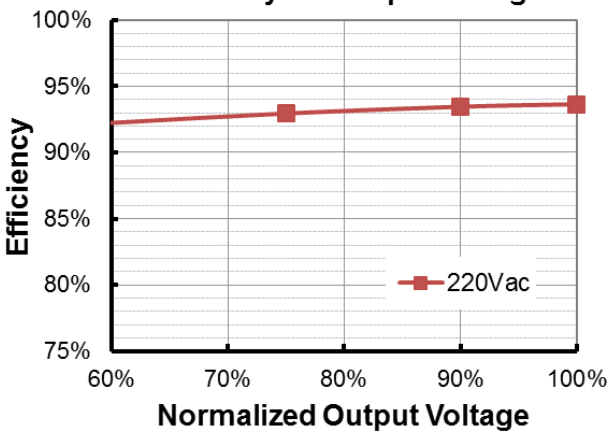
LMT-160S105STF(Io=1050mA)



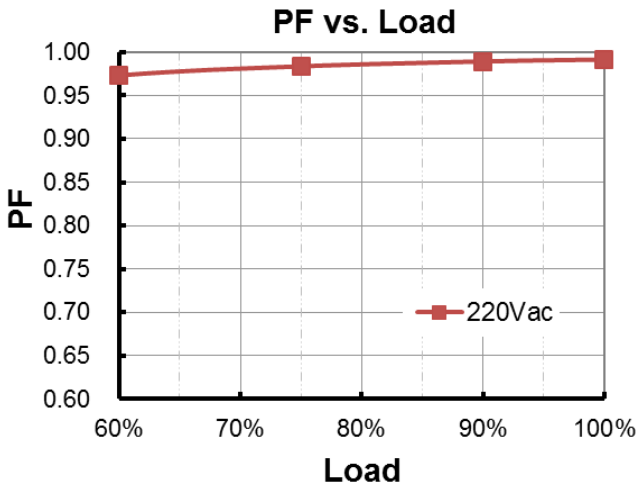
LMT-160S150STF(Io=1050mA)



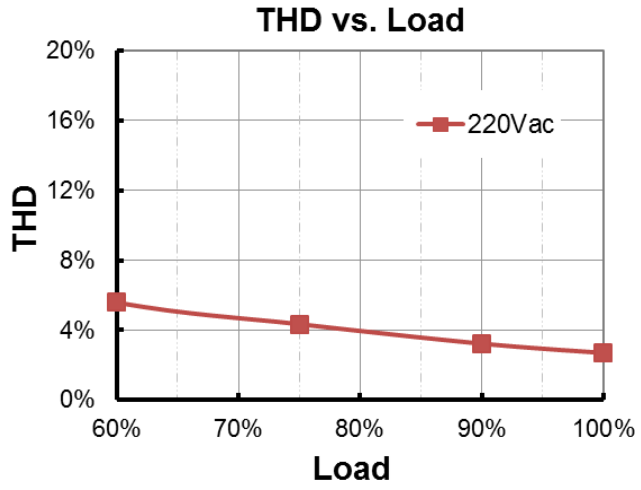
LMT-160S150STF(Io=1500mA)



Power Factor



Total Harmonic Distortion



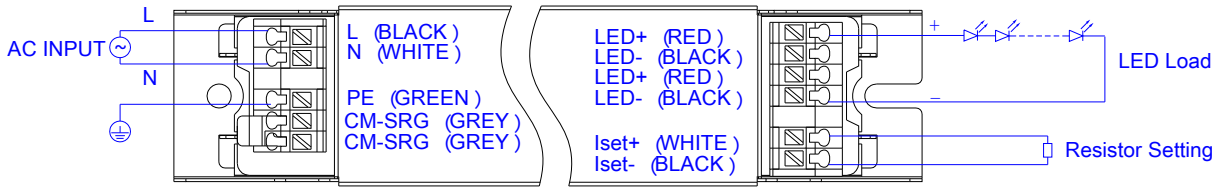
Protection Functions

Parameter	Notes
Over Temperature Protection	Decreases output current, returning to normal after over temperature is removed.
Short Circuit Protection	Auto Recovery. No damage will occur when any output is short circuited. The output shall return to normal when the fault condition is removed.
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.

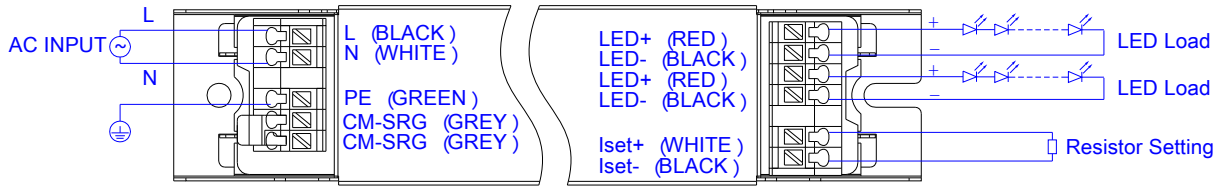
Wire Connection

Parameter		Min.	Typ.	Max.	Notes
L, N, ⏚	Wire Cross-section	0.5 mm^2	-	1.5 mm^2	Push-in at 45° angle, solid and stranded wire
		20 AWG	-	16 AWG	
	Strip Length	8 mm	-	9 mm	
LED+, LED-, LED+, LED-, Iset+, Iset- CM-SRG CM-SRG	Wire Cross-section	0.5 mm^2	-	1.5 mm^2	Push-in at 45° angle, solid and stranded wire
		20 AWG	-	16 AWG	
	Strip Length	8 mm	-	9 mm	

Wire Connection 1



Wire Connection 2



Output Current vs. Resistor Setting (Iset)

● **LMT-160S070STF**

Resistor Setting (Iset)	Output Current	Output Voltage Range		Notes
Typ.	Typ.	Min.	Max.	/
7.14 kΩ	700mA	137V	229V	Output Current Setting with Constant Power.
7.58 kΩ	660mA	137V	243V	
8.06 kΩ	620mA	137V	258V	
8.62 kΩ	580mA	138V	276V	
9.26 kΩ	540mA	149V	297V	
10.00 kΩ	500mA	160V	320V	
10.87 kΩ	460mA	174V	320V	Output Current Setting with Power Derating.
11.90 kΩ	420mA	191V	320V	
13.16 kΩ	380mA	211V	320V	
14.71 kΩ	340mA	236V	320V	

● LMT-160S105STF

Resistor Setting (Iset)	Output Current	Output Voltage Range		Notes
Typ.	Typ.	Min.	Max.	/
4.76 kΩ	1050mA	91V	153V	Output Current Setting with Constant Power.
5.00 kΩ	1000mA	91V	160V	
5.26 kΩ	950mA	91V	169V	
5.56 kΩ	900mA	91V	178V	
5.88 kΩ	850mA	95V	189V	
6.25 kΩ	800mA	100V	200V	
6.67 kΩ	750mA	107V	214V	
7.14 kΩ	700mA	115V	229V	
7.69 kΩ	650mA	123V	229V	Output Current Setting with Power Derating.
8.33 kΩ	600mA	134V	229V	
9.09 kΩ	550mA	146V	229V	
10.00 kΩ	500mA	160V	229V	

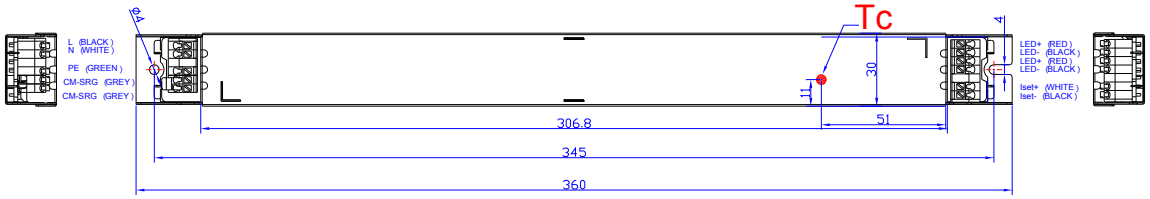
● LMT-160S150STF

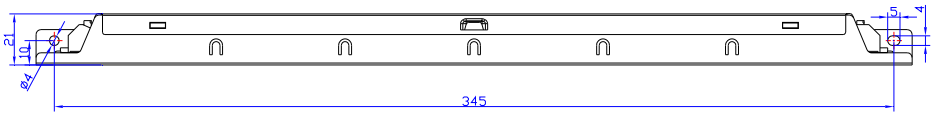
Resistor Setting (Iset)	Output Current	Output Voltage Range		Notes
Typ.	Typ.	Min.	Max.	/
3.33 kΩ	1500mA	64V	107V	Output Current Setting with Constant Power.
3.45 kΩ	1450mA	64V	110V	
3.57 kΩ	1400mA	64V	114V	
3.70 kΩ	1350mA	64V	119V	
3.85 kΩ	1300mA	64V	123V	
4.00 kΩ	1250mA	64V	128V	
4.17 kΩ	1200mA	67V	133V	
4.35 kΩ	1150mA	70V	139V	
4.55 kΩ	1100mA	73V	146V	
4.76 kΩ	1050mA	77V	153V	
5.00 kΩ	1000mA	80V	153V	Output Current Setting with Power Derating.
5.26 kΩ	950mA	84V	153V	
5.56 kΩ	900mA	89V	153V	
5.88 kΩ	850mA	94V	153V	

Notes:

1. An external resistor must be set in the setting range as specified to insure the driver operates as expected.
2. Either short circuit or open circuit is not allowed for long-term operation.

Mechanical Outline





Unspecified tolerance:±1

RoHS Compliance

Our products comply with reference to RoHS Directive (EU) 2015/863 amending 2011/65/EU, calling for the elimination of lead and other hazardous substances from electronic products.

Revision History

Change Date	Rev.	Description of Change		
		Item	From	To
2020-01-09	A	Datasheets Release	/	/