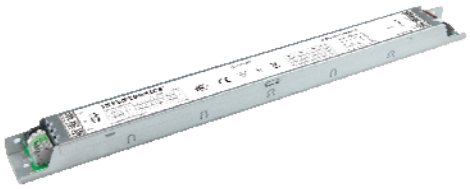
Features

- Non-Isolated Design with Low residual output voltage < 2 kV
- Resistant to Corrosive Gases
- Ultra High Efficiency (Up to 96.5%)
- Adjustable Output Current (AOC) with External Resistor
- Full Power at Wide Output Current Range (Constant Power)
- Flicker- Free
- Non-dimming Control
- Long Lifetime Over 100,000 Hours at 70°C Case Temperature
- Input Surge Protection: DM 2 kV, CM 4 kV
- Suitable for Luminaires with Protection Class I
- 5 Year Warranty



Description

The *LNT-350SxxxSTF* series is a 350W, constant-current LED driver that operates from 342-457 Vac input with excellent power factor. It is created for many lighting applications including high bay and horticulture, 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)	Typical Power Factor (3)	Model Number
850-1500mA	1050-1500mA	<850mA	342~457Vac	140-333Vdc	350W	96.5%	0.98	LNT-350S150STF

Notes: (1) Output current range with constant power at 350W
(2) Certified voltage range: 380-415Vac
(3) Measured at 100% load and 400Vac input (see below "General Specifications" for details).

Input Specifications

Parameter	Min.	Typ.	Max.	Notes
Input Voltage	342 Vac	-	457 Vac	
Input Frequency	47 Hz	-	63 Hz	
Leakage Current	-	-	0.70 mA	IEC60598-1; 400Vac/ 60Hz, grounding effectively
Input AC Current	-	-	1.0 A	Measured at 100% load and 400 Vac input.
Inrush Current(I^2t)	-	-	0.09 A^2s	At 400Vac input, 25°C Cold Start, Duration =4.36 ms, 10%Ipk-10%Ipk. See Inrush Current Waveform for the details.
PF	0.90	-	-	At 380-415Vac, 50-60Hz, 60%-100% Load (210-350W)
THD	-	-	20%	
THD	-	-	10%	At 380-415Vac, 50-60Hz, 75%-100% Load (263-350W)

Output Specifications

Parameter	Min.	Typ.	Max.	Notes
Output Current Tolerance	-5%Ioset	-	5%Ioset	At 100% load condition
Output Current Setting(Ioset) Range	850 mA	-	1500 mA	
Output Current Setting Range with Constant Power	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	-	-	450 V	
Line Regulation	-	-	±1%	Measured at 100% load
Load Regulation	-	-	±5%	
Turn-on Delay Time	-	-	0.5 s	Measured at 380-415Vac input, 60%-100%load
Temperature Coefficient of Ioset	-	0.06%/°C	-	Case temperature = 0°C~Tc max

General Specifications

Parameter	Min.	Typ.	Max.	Notes
Efficiency at 400 Vac input: LNT-350S150STF Io=1050 mA Io=1500 mA	 94.5% 94.0%	 96.5% 96.0%	 - -	Measured at 100% load and steady-state temperature in 25°C ambient; (Efficiency will be about 2% lower if measured immediately after startup.)
MTBF	-	239,000 Hours	-	Measured at 400Vac input, 80%Load and 25°C ambient temperature (MIL-HDBK-217F)
Lifetime	-	123,000 Hours	-	Measured at 400Vac 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)	16.74 × 1.58 × 1.18 425 × 40 × 30			
Net Weight	-	560 g	-	

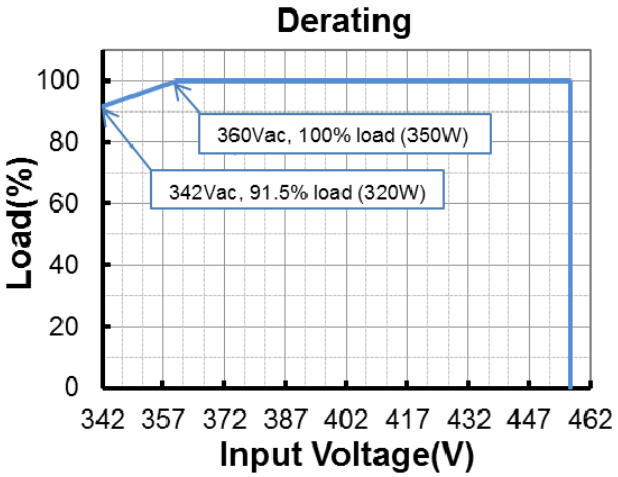
Safety & EMC Compliance

Safety Category	Standard
ENEC & CE	EN 61347-1, EN61347-2-13
CB	IEC 61347-1, IEC 61347-2-13
EMI Standards	**Notes**
EN 55015(1)	Conducted emission Test &Radiated emission Test
EN 61000-3-2	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 4kV(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

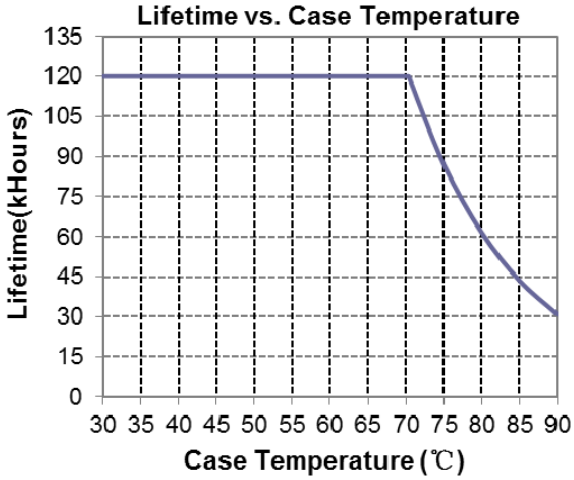
Notes: (1) This LED driver meets the EMI specifications above, but EMI performance of a luminaire that contains it depends also on the other devices connected to the driver and on the fixture itself.

(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.

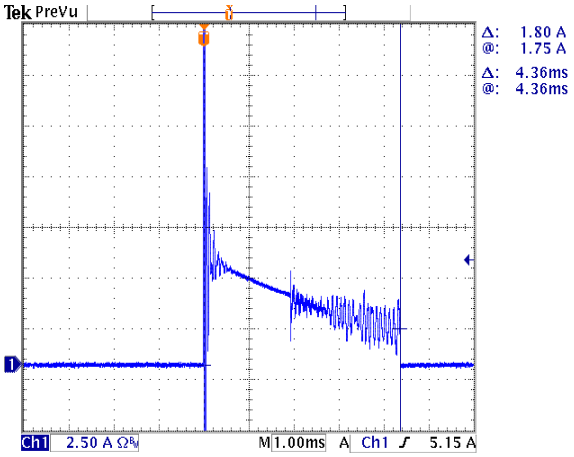
Derating



Lifetime vs. Case Temperature

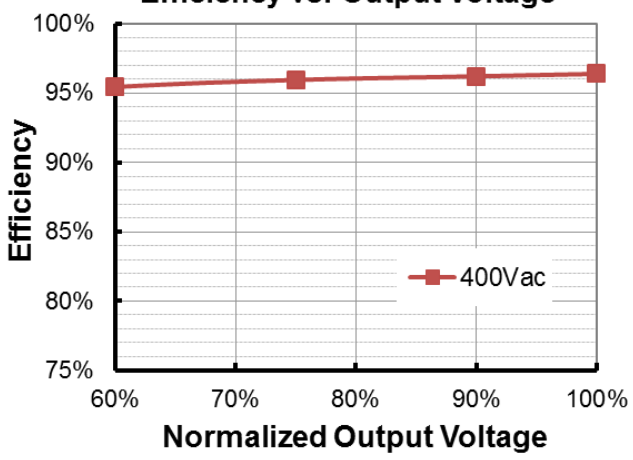


Inrush Current Waveform

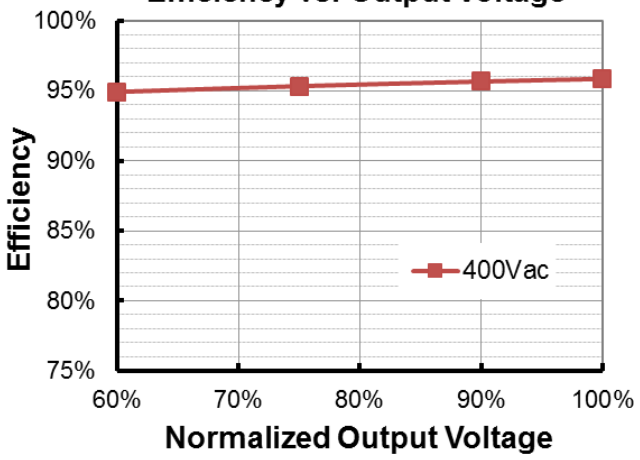


Efficiency vs. Load

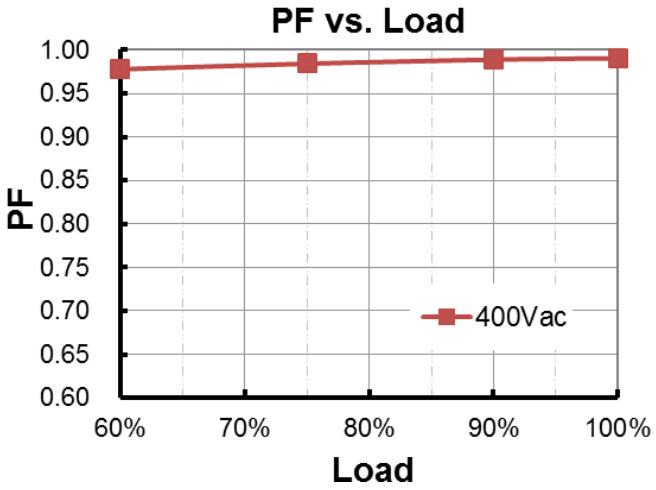
LNT-350S150STF(Io=1050mA)



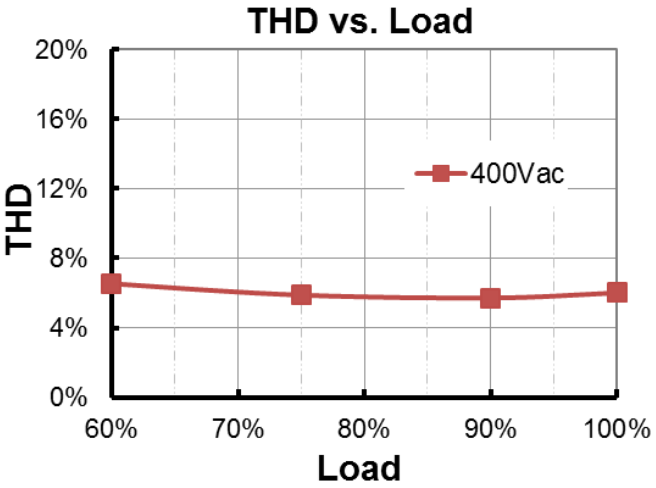
LNT-350S150STF(Io=1500mA)



Power Factor



Total Harmonic Distortion

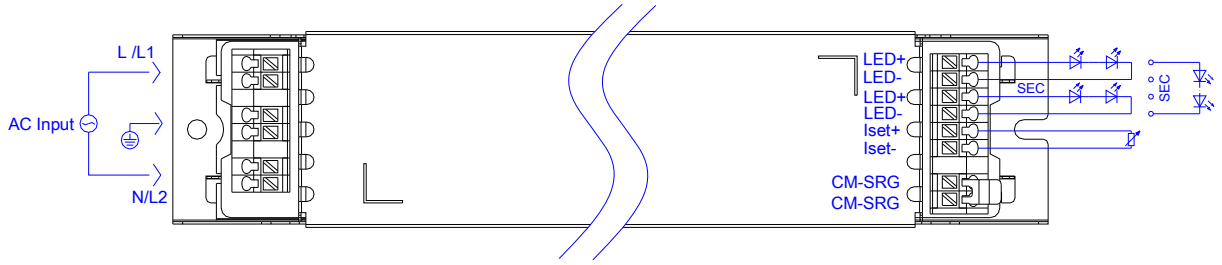


Protection Functions

Parameter	Notes
Over Voltage Protection	Limits output voltage at no load and in case the normal voltage limit fails.
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 Temperature Protection	Decreases output current, returning to normal after over temperature is removed.

Wire Connection

Parameter		Min.	Typ.	Max.	Notes
L/L1, N/L2 ⏚	Wire Cross-section	0.5 mm^2	-	1.5 mm^2	Push-in at 45° angle, solid and stranded wire (WAGO 250)
		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 (WAGO 250)
		20 AWG	-	16 AWG	
	Strip Length	8 mm	-	9 mm	

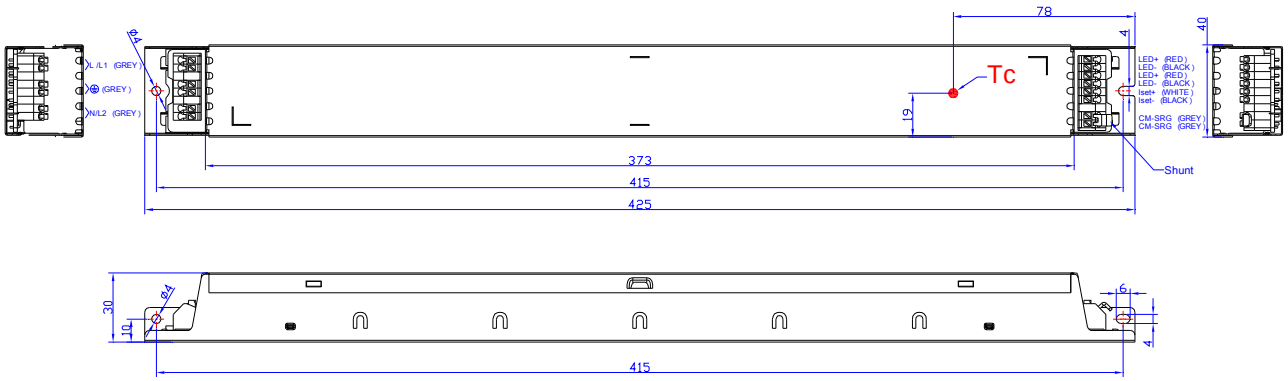


Output Current vs. Resistor Setting (Iset)

Resistor Setting (Iset)	Output Current	Output Voltage Range		Notes
Typ.	Typ.	Min.	Max.	/
3.33 kΩ	1500mA	140V	233V	Output Current Setting with Constant Power.
3.45 kΩ	1450mA	140V	241V	
3.57 kΩ	1400mA	140V	250V	
3.70 kΩ	1350mA	140V	259V	
3.85 kΩ	1300mA	140V	269V	
4.00 kΩ	1250mA	140V	280V	
4.17 kΩ	1200mA	146V	292V	
4.35 kΩ	1150mA	152V	304V	
4.55 kΩ	1100mA	159V	318V	
4.76 kΩ	1050mA	167V	333V	
5.00 kΩ	1000mA	175V	333V	Output Current Setting with Power Derating.
5.26 kΩ	950mA	185V	333V	
5.56 kΩ	900mA	195V	333V	
5.88 kΩ	850mA	206V	333V	

Note: An external resistor must be set in the setting range as specified to insure the driver operates as expected.

Mechanical Outline



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
2020-07-16	A	Datasheet Release	/	/