



# Igor® PoE Emergency Mode Linear Network Node—Max

Model: NP60-99-T-F-EM

Igor Network and Device Nodes provide the data connectivity and power distribution architecture to create a fully functioning PoE lighting control system. The Igor Gateway software communicates bi-directionally with the Nodes to control lighting for each Space, as well as to receive signals from sensors and other devices to improve occupant comfort and optimize energy savings.

## Emergency Mode Linear Network Nodes

Igor Emergency Network Nodes (\*-EM) are a key component to installing a Power over Ethernet emergency lighting system. These Nodes are UL 924-FTBR listed for use as emergency LED drivers. When combined with a central emergency power source such as a generator, inverter or UPS, they provide a fully code compliant emergency lighting solution. During normal operation, these Nodes offer full range dimming and control of the LED fixtures and automatically switch into emergency lighting mode when normal building power is lost.

In addition to the emergency lighting functionality, Linear Network Nodes act as an intelligent hub for the PoE lighting network. They receive power and data from the PoE network switch, interact with connected devices, and pass power and data downstream to any daisy-chained Device Nodes via the Igor Bus. As LED fixtures and sensors are connected and configured, the Node will automatically report those devices back to the Igor Gateway software for easy plug and play functionality. Each Network Node is also DHCP-enabled and will automatically receive an IP address from the local network to simplify installation and setup.



# Product Specifications

**Specifications subject to change without notice.**

Item	Model: NP60-99-T-F-EM	Igor PoE Emergency Linear Network Node—Max
Electrical	PoE PD Interface	IEEE 802.3bt PD Type 4, Class 8 compliant input with LLDP extensions for negotiating power above 30W using 4 pairs
	Input Voltage	44-57VDC
	Peak Operating Power	99W max
	Nominal Standby Power	2.0W
	Igor Input Connection	Unshielded female RJ45 jack for use with CAT5e/6/6A cable to PSE device
	Igor Bus Connection	Unshielded female RJ45 jack for use with CAT5e/6/6A cable to Igor Device Node
	Node Power Monitoring	Node energy data is automatically sampled every minute and stored in the Igor Cloud Portal. Accuracy: $\pm 3\%$
	Device Type	Class 2 electrical device
LED Driver Outputs	Output Channels	Flexible configuration options for up to two (2) individual white fixtures or one (1) tunable white fixture
	Driver Design	Constant current LED driver design, programmable in 10mA increments from 100mA to 2000mA.
	Dimming	Full Range dimming control from 1% to 100% in increments as fine as 0.01%. Multiple dimming modes including Analog CCR (constant current reduction), PWM and Hybrid (CCR & PWM) mode.
	Output Voltage Range	12-48VDC
	Rated Output Power	75W per channel; 80W max total for both channels
	Protection	Short circuit and open circuit protection
	Connections	Spring cage terminals accept 16-24 AWG conductors. Luminaire LED engine circuits MUST be isolated; MUST NOT have an electrical path to Ground or to the luminaire housing. Common anode and common cathode circuit designs are not supported by this node model's LED drivers.
Emergency Operation	LED Driver Output	Default Level: 100% (adj.)
Sensor I/O Connections	Power Supply	One +24VDC terminal for powering external sensors, 150mA total capacity shared between Sensor I/O and RS-485 Serial Bus connections

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Sensor I/O Connections (Cont.)	Sensor Inputs	Three inputs, which can be individually configured via software, for the following signal types: Analog: 0-10VDC NPN: Dry contact PNP: 24VDC Active-Hi
	Connections	Spring cage terminals accept 16-24 AWG conductors
USB Connection	Electrical Ratings	+5VDC / 0.5A / 2.5W
	Data Rate Supported	12Mbit/sec
	Connection	USB 2.0 Type A Female
RS-485 Serial Bus Connection	Power Supply	+24VDC, 150mA total capacity shared between RS-485 Serial Bus and Sensor I/O connections
	Communication	RS-485, Half-Duplex, 115.2Kbaud
	Characteristic Impedance	120 Ω
	Connection	Molex Micro-Latch™ 53254 Male Pin (mating plug is Molex 51065-0400)
PoE Power	Electrical Ratings	44-57 VDC / 2.0A / 99W
	Connection	JST VH-Series B2P-VH-FB-B(LF)(SN) or equivalent
Environment	For indoor use only	
	IP Rating	IP20
	Sound Rating	Class A
	Maximum Case Temp.	85°C
	Operating Temperature	0°C to 70°C
	Operating Humidity	10% to 80% RH non-condensing
	Storage Temperature	-20°C to 85°C
	Storage Humidity	5% to 95% RH non-condensing
Safety & EMC	Safety Standards	UL 2108, CAN/CSA C22.2 No. 9 UL 1598C, CAN/CSA C22.2 No. 250.0-08, CSA B-79A UL 2043, Suitable for Use in Air Handling Spaces (Plenum Rated) UL 924, CAN/CSA C.22.2 No. 141-15 - Emergency Lighting* *Emergency power source equipment must be UL 924 listed and adequately sized to provide minimum 90-minute runtime based on lighting load.
	Flicker	Compliance with IEEE 1789-2015 Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers. (Also see the " <a href="#">Flicker-Free LED Lighting Control</a> " description, page 4.)
	EMC Emissions	Compliance to EN 55015:2013
	EMC Immunity	Compliance to EN 61547:2009

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Safety & EMC (Cont.)	FCC	Compliance to Title 47 Part 15 Subpart B Section 15.109
	EU	RoHS Compliant
Other	Dimensions Overall	14.13" (359mm) Length x 1.19" (31mm) Width x 0.69" (18mm) Height
	Mounting Options	Enclosure design allows for multiple mounting orientations via two pairs of mounting holes at 90° angle from each other. Mounting holes are spaced 350mm apart.
	Origin	Made in USA

## Flicker-Free LED Lighting Control

IEEE 1789-2015 contains the IEEE Recommended Practices for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers and essentially sets the standard for flicker-free lighting. Flicker can be caused by PWM dimming of the light source, including LEDs. Igor PoE Node LED drivers can be programmed for multiple dimming modes, including PWM dimming. Igor drivers implement their PWM dimming mode at a frequency of 1250Hz, which is within the IEEE 1789-2015 standard's "Recommended Operating Area."

Other Igor driver dimming modes include Analog CCR (Constant Current Reduction) dimming, which doesn't cause any flicker of the light source; and Hybrid dimming mode, which utilizes both Analog CCR and PWM dimming. In Hybrid mode, Analog CCR dimming is used at dimming levels >10% and PWM is used at levels <10% to offer very precise low level lighting control and smooth fade on/fade off functionality.

## Remote Mounting

Applications that call for remote mounting of the Igor Nodes separate from the LED fixture are acceptable. Please follow the maximum wiring distances listed in Table A below when selecting an appropriate cable wire gauge.

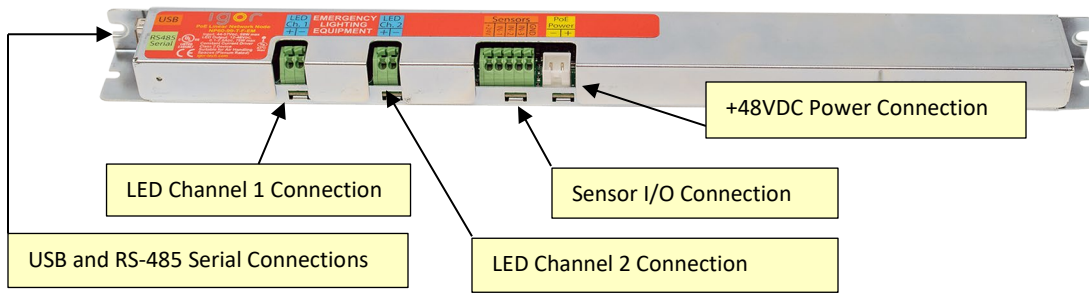
		AWG Wire Size						
		12	14	16	18	20	22	
Output Current (mA)	350	900	566	356	224	141	89	Max Cable Length (ft)
	500	630	396	249	157	99	62	
	700	450	283	178	112	70	44	
	1000	315	198	125	78	49	31	
	1100	286	180	113	71	45	28	
	1400	225	141	89	56	35	22	
	1750	180	113	71	45	28	18	

**Table A.** Max cable length (ft.) between node and LED fixture (based on 1V drop)

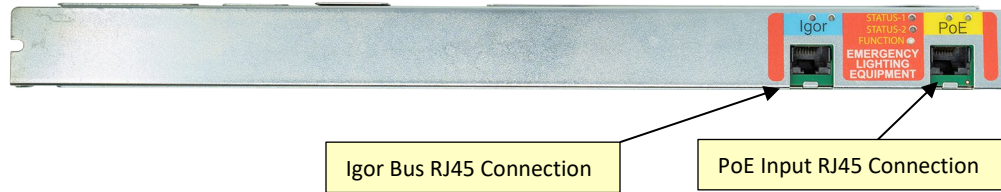
## Node Connections

### Linear Network Emergency Max Node Top:

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## Linear Network Emergency Max Node Bottom:



END.