


THE SMART LUMINTELL™ NODE ACTS AS A LIGHT CONTROL UNIT AND A CLUSTER CONTROL UNIT


Based on the NEMA socket connector, the new Lumintell™ Node is the plug-and-play and cost-effective solution for smart street lighting and Smart City applications. Adaptable to existing street lighting infrastructure, scalable and immediately operable, the Lumintell™ Node acts as a wireless Light Control Unit (LCU) and a wireless Cluster Control Unit (CCU or Gateway) mounted to a NEMA socket. Each Node can be installed on any existing or new LED lighting fixture, with or without a NEMA socket, no matter the model or manufacturer.

The Lumintell™ system connects a Light Control Unit (LCU) with a custom Zigbee-based wireless network. The mesh network routes all of its data through a Cluster Control Unit (CCU or Gateway) and transmits it to the internet using a 3G or 4G data connection. The LCU controls on/off/dimming of the luminaire and measures power consumption and electrical parameters of the streetlight – thus enabling its monitoring and preventive maintenance.

LIGHT CONTROL UNIT (LCU)			
<p>LCU Node</p> 	MESH NETWORK DATA		
	Interface	Zigbee - 2,4 GHz IEEE802.15.4	
	Receiver Sensitivity	-100 dBm	
	Output Power	Programmable up to 19 dBm	
	Max. Data Throughput	250 Kbps	
	Security	AES 128/ 256, SHA2, ECC 128/ 256, RSA	
	Adjacent Interference Rejection	44 dB	
	MCU	ARM Cortex-M3, 24 MHz	
	LED Light Interface	Max. LED Driver Current	5.0A
		LED Driver Interface	DC Control Signal (0, 1-10V)
Power Supply	110-240VAC +/- 15%, 50/60 Hz		
Environmental Limits	Altitude up to 4,000 meters		
	Temperature: -40 to 75°C		
	Ambient Relative Humidity: 5 to 95% (non condensing)		

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The CCU houses an on-board wireless GSM modem with a built-in e-sim card. The CCUs are installed in the same way as the LCUs, using a NEMA socket. The CCU functions as a light-controlling unit, as well as a cluster-controlling unit. Typically, implementations of Lumintell™ will require one CCU per 150 LCUs, depending on geography and other physical interference (buildings, mountains, etc).

CLUSTER CONTROL UNIT (CCU) <i>also known as Gateway or Bridge</i>		
<p>CCU Node (Gateway)</p> 	UPLINK DATA	
	Interface	Quad-Band GSM/GPRS/EDGE
	EDGE Class	Max. 236.8Kbps (DL) Max. 118Kbps (UL)
	GPRS	Max. 85.6Kbps (DL) Max. 42.8Kbps (UL)
	CSD	GSM data rate 14.4 Kbps WCDMA data rate 57.6 Kbps WCDMA 64 Kbps CSD for Video call
	UPLINK OUTPUT POWER	
	GSM850/GSM900	2W
	DCS1800/PCS1900	1W
	Mesh Network	Same technical specifications as Light Control Unit (LCU)
	LED Light Interface	Same technical specifications as Light Control Unit (LCU)
Power Supply	110-240VAC +/- 15%, 50/60 Hz	
Environmental Limits	Altitude up to 4,000 meters	
	Temperature: -40 to 75°C	
	Ambient Relative Humidity: 5 to 95% (non condensing)	
Certifications & Standards	EMC	ETSI EN 301 489-1 ETSI EN 301 489-3 ETSI EN 301 489-19 ETSI EN 301 489-52
	Radio	EN 300 328
	GPS	EN 303 413 V1.11
	Safety	EN 60950-1:2006 EN 62311
	RoHS	EN 50581
	Cellular (CCU version only)	EN 301 511 V12