OSNET

40 iR-TEC 1982~2022

A Simpler and Smarter Wireless Lighting Control Solution

Flexibility • Functionality • Simplicity

iR-TEC
Specializing in Building Sensors

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FOREWORD

Bringing sophisticated lighting controls to non-residential buildings typically meant extra set of control wire networking, labor intensive device installation, complicated wiring connections among system devices, luminaires and central control unit, learning proprietary management software, time-consuming commissioning and troubleshooting. All above end up not only more wiring schematics, time getting up-and-down the ladder, and facility management challenges, but also higher ownership cost.

With the availability of advanced wireless communication technologies, such as Zigbee, Bluetooth and many others, wireless undoubtedly becomes the only feasible approach for non-residential buildings to enable smart lighting controls without the shortcomings above mentioned. However, most wireless lighting control solutions available in the market are still complicated for general lighting designers/ specifiers, installers/contractors, and commissioning agents to learn, comprehend, and execute all the works required to deliver a code-compliant smart lighting control for commercial and industrial applications.

Developing a “real simpler” wireless lighting control solution for non-residential buildings is easier said than done. It not only has to fulfill the latest requirements from evolving energy codes, but also provides versatile controls to ensure high comfort level for occupants. In addition, reducing the device types and total SKU is also important for a solution to be claimed simple.

This brochure highlights all elemental information of OS-NET, a simpler and smarter wireless lighting control solution featuring second-to-none flexibility, functionality, and simplicity.

About OS-NET

- **Achieving sophisticated control with unparalleled simplicity**
- **Fully code compliant with the ASHRAE 90.1 and CA Title 24**
- **Enable Luminaire Level Lighting Control (LLLC) with ease**
- **A robust system without any Single Point Of Failure (SPOF)**
- **Universal control platform available for all types of luminaires**
- **Simplified system device types with flexible mounting options**
- **Effortlessly deploys an IoT adaptable wireless mesh network**
- **Independent system operation ensures highest security level**
- **Suitable for commercial, industrial and institutional buildings**
- **Ideal for new building or existed lighting renovation projects**

Achieving Smart Lighting Control with Real Ease

Introducing the OS-NET, a simpler and smarter wireless solution developed to enable Networked Lighting Control (NLC) with unsurpassed level of Flexibility, Functionality and Simplicity.

Through simply installing the OS-NET enabled luminaires, lighting circuits, and plug loads at all applicable areas, an innovative Zigbee based wireless mesh network can be effortlessly deployed and easily configured to execute a variety of smart lighting controls, including numerous occupancy or vacancy sensing controls with multi-level StepDIM or continuous SmartDIM for commercial and industrial lighting systems.

The OS-NET system is mainly formed by OS-NET Sensors, Buttons, and Power Packs. With some easy and intuitive settings via a 2-way handheld remote programmer, all OS-NET devices can be wirelessly linked and grouped to execute code-compliant, smart lighting control based on an innovative “individual sensing control, group coordinated activation” control concept. If necessary, an operating OS-NET enabled lighting can be easily re-configured with different control or re-assigned to different group without complicated setting.

IR-TEC’s OS-NET is not only a simple solution for OEM manufacturers to easily enable their fixtures with Luminaire Level Lighting Control (LLLC), but also a perfect solution for renovating the legacy lighting with solid state lighting featuring maximum energy savings from human-centric smart controls.

Unparalleled Flexibility, Functionality and Simplicity

Deploy an IoT wireless mesh network effortlessly

A Zigbee based wireless mesh network can be effortlessly deployed while installing lighting and control devices for commercial and industrial environments. A wireless mesh network broadly established throughout the entire space will be a valuable infrastructure for Internet of Things.

Flexible device integration allows easy installation

The OS-NET Sensors can be flexibly integrated with OEM luminaires or mounted on the ceiling for lighting circuit control. Unparalleled integration flexibility allows installing the OS-NET enabled lighting system just like installing the conventional luminaires, occupancy sensors and wall switches.

All functionalities in one and one for all controls

Each OS-NET Sensor is packed with multiple sensing and control functionalities for meeting different control requirements. Specific control scheme be easily programmed to execute even the most sophisticated control to the connected lights without complicated device installation and commissioning.

Individual sensing control with group activation

When a specific grouped OS-NET Sensor detects the presence of occupant, the sensor not only controls the connected lighting as set according to the local condition, but also broadcasts an “occupied” command to other devices of the group for activating the programmed controls respectively.

Single device can be member of multiple groups

A single OS-NET device can be assigned as member of up to 4 groups. This allows multiple lighting groups to be activated simultaneously by the sensor located at the spot with multi-directional traffics. Advanced group control setting enables pre-lighting or directional guide lighting at public areas.

Hybrid Switching protects from inrush current

An advanced Hybrid Switching technology is employed to protect every OS-NET Sensor from being damaged by exceptionally high inrush current while switching on the LED driver. With Hybrid Switching protection, the service lifetime of OS-NET Sensor is guaranteed longer than others.

SmartDIM constant lighting control technology

SmartDIM control can be programmed in each OS-NET Sensor to perform daylight harvesting control. This smart dimming control technology will continuously adjust the lighting output based on the ambient light level and occupancy status to maintain the overall light level within preset range.

Universal 2-way IR remote programming tool

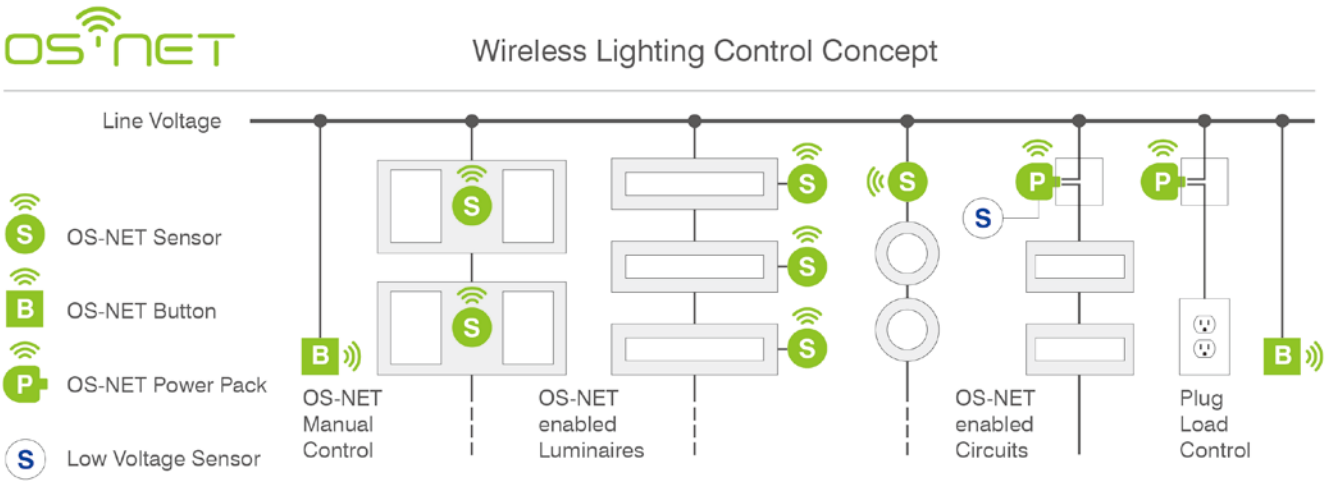
Unlike many other network control solutions, OS-NET does not require any proprietary management software, operation app or expensive hardware to make the system run. All you need is just a 2-way IR remote to set up the network, group the devices, and set the control scheme.

Latest ASHRAE 90.1 & CA Title 24 compliant

Numerous functionalities are developed and built in the OS-NET devices to comply with the latest energy codes and standards for non-residential buildings. With OS-NET system, you can easily meet most lighting control requirements via some simple remote setting operations.

Enable Sophisticated Controls with Simple Devices

An OS-NET system is formed by some simple wirelessly linked OS-NET devices; mainly include OS-NET Sensors, Buttons, and Power Packs. Each OS-NET device not only provides distinctive functionalities, but also acts as a network node to transmit, receive, and/or forward the commands and data to enable sophisticated controls.



OS-NET Devices

OS-NET Sensors					
M1	**M2**	**M2P**	**M3**	**M3P**	**T5**
			 L	 L	 M L

OS-NET Sensors	
A6	**Z7**
 L	new  L

OS-NET Buttons	
1-channel	**4-channel**
	

OS-NET Power Packs


M : Multiple mounting options L : Multiple lens options

OS-NET Sensor

OS-NET Sensors (hereinafter refer as ONS) are fundamental network devices of an OS-NET system. Each ONS is packed with multiple sensing and control functionalities, including occupancy/vacancy sensing, ambient light level, 0-10V or DALI control output, and wireless mesh network connectivity required to achieve sophisticated smart lighting control. ONS are available with several form factors for different OEM luminaire integration and ceiling installation options.

M1 ONS

The ONS with M1 form factor housing is a miniature remote OS-NET Sensor head designed for integrating with office luminaire or recess mounting on the ceiling via a 1" (25mm) look down hole. Through an easy plug-in connection with specific Power Pack Controller, you can easily enable LED panel or Troffer powered by DALI/0-10V or typical LED driver an OS-NET enabled luminaire with wireless smart control capability.

	Model	Power Input	Control Output	Mounting
	**ON-MRD-124S**	DALI bus	DALI	Luminaire integrated Ceiling recess mount

Power Pack Controller

	Model	Power Input	Control Output	Remarks
	**ON-PPU-100DP**	120/277VAC	DALI	Manual control input available
	**ON-PPU-109DA**	120/277VAC	DALI, 0-10V, Switched live	

M2/M2P ONS

The ONS with M2 form factor housing is a compact OS-NET Sensor available for integrating with general commercial luminaire via a 1” (25mm) look down hole. M2P ONS is designed for attaching with linear luminaires via a 1/2” knockout hole.

	Model	Power Input	Control Output	Mounting
	**ON-LRD-209S**	120/277VAC	0-10V, Switched live	Luminaire integrated
	ON-MRD-210S	120/277 VAC, DALI bus	DALI	
	**ON-LRD-209SP**	120/277VAC	0-10V, Switched live	1/2" knockout hole
	ON-MRD-200SP	120/277 VAC, DALI bus	DALI	

M3/M3P ONS

The ONS with M3 form factor housing is designed for integrating with OEM luminaire via a 1.34”(34mm) look down hole. M3P ONS can be attached with linear luminaires via a 1/2” knockout hole. Multiple lens options are available for the sensor to provide distinctive detection coverage for different mounting height.

	Model	Power Input	Control Output	Mounting	Lens available
	**ON-LRD-309S**	120/277VAC	0-10V, Switched live	Luminaire integrated	**a/b/c/d/f/g/h/l**
	**ON-LRD-309SP**	120/277VAC	0-10V, Switched live	1/2" knockout hole	**a/b/c/d/f/g/h/l**

NOTE: Lens is separately sold item.

T5 ONS

The ONS with T5 form factor housing offers second-to-none flexibility for OEM luminaire integration and ceiling installation with multiple mounting and lens options for your selection.

Model	Power Input	Control Output	Mount	Lens
ON-BRD-500S	12-24VDC	0-10V, Digital output	**F/W/E/P/ S/C/R**	**A/B/C/D/ F/G/H/L**
ON-LRD-509S	120/277VAC	0-10V, Switched live		
ON-MRD-510S	120/277VAC, DALI bus	DALI		

NOTE: While ordering the T5 ONS, please specify the Model No. with mount and lens codes.

A6 ONS

The ONS with A6 form factor housing is an IP66 OS-NET Sensor designed for attaching with circular OEM high bay luminaires to enable state-of-the-art wireless smart control capability. Multiple lens options are available for providing distinctive detection coverage at different mounting heights.

Model	Power Input	Control Output	Mount	Lens
ON-LRD-609S	120/277VAC	0-10V, Switched live	**A**	**A/B/C/D/ F/G/H/L**
ON-MRD-600S	120/277VAC, DALI bus	0-10V, Switched live		

NOTE: While ordering the A6 ONS, please specify the Model No. with mount and lens codes.

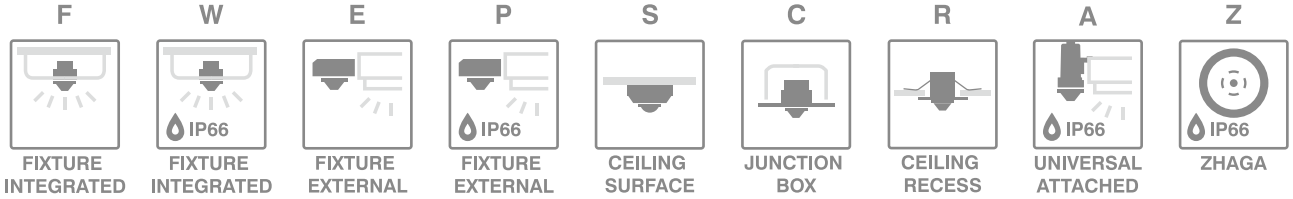
Z7 ONS

The ONS with Z7 form factor housing is an IP66 OS-NET Sensor exclusively designed for outdoor luminaire with Zhaga Book 18 socket. Multiple lens options are available for providing distinctive detection coverage at different mounting heights.

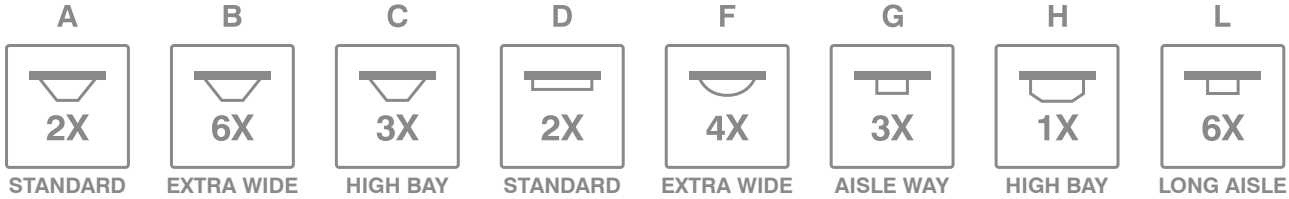
Model	Power Input	Control Output	Mount	Lens
ON-BRD-734S	12-24VDC	0-10V, Digital output	**Z**	**A/B/C/D/ F/G/H/L**
ON-MRD-734S	Aux (+24V)	DALI		

NOTE: While ordering the Z7 ONS, please specify the Model No. with mount and lens codes.

Mounting Options



Lens Options



OS-NET Buttons

The OS-NET Buttons are optional wireless network devices designed for mounting into standard NEMA wall box to provide manual ON/OFF and dimming control for the assigned lighting groups.

Model No.	Channel	Power Input	Mounting
ON-PBD-705W	1	120/277VAC	NEMA wall box
ON-PBD-708W	4	120/277VAC	NEMA wall box

ON-PBD-705W

ON-PBD-708W

OS-NET Power Packs & Controllers

The ON-PPU Power Packs and Controllers are OS-NET enabled power supply and control devices for various control requirements. Following models are available to offer unprecedented flexibility for many of your control needs.

Model No.	Description	Functional Application
ON-PPU-301	OS-NET Power Pack & Load Controller	Allow adding wireless connectivity to any of IR-TEC's low voltage sensors with grouping control. Can be programmed to execute auto-on, manual-on, or plug load control.
ON-PPU-302	OS-NET Power Pack w/ 0-10V Dim Control	Enable grouping control IR-TEC's low voltage sensors wirelessly while also provides line voltage load switching control up to 20A and 0-10V output for a variety of dimming controls.
ON-PPU-303	OS-NET Demand Response Controller	Transmit a force-off command to shut off the associated OS-NET controlled lighting upon receiving the DRC contact signal from BMS/EMS panel. Resume normal after the DRC disengaged.
ON-PPU-304	OS-NET Override Controller	Upon receiving signal from associated BMS/LMS, it not only turns on the connected load up to 20A, but also transmits a force-on command to the associated OS-NET controlled lighting.

OS-NET Remote Programmer

The SRP-281 is a 2-way remote programming tool for configuring the entire OS-NET enabled lighting system; include creating a network, adding devices to the network and grouping, setting sensor control scheme and parameters, and all other management associated tasks.

Model No.	Power Input
SRP-281	2x AAA Battery

Mounting Options

The OS-NET Sensors are designed for integrating with OEM luminaires and/or mounting on the ceiling for sensing presence, controlling light while also operating as network nodes. Following table highlights mounting brackets and accessories available for the OS-NET Sensors with T5 form factor. Detailed information is available on the mounting datasheet from www.irtec.com.

Mounting option	Code	Bracket #	Appearance	Application Description
Fixture Integrated	**F**	---		F-mount is the original form factor of T5 ONS for integrating with OEM luminaire through a 2" hole or mounting on ceiling with different brackets.
IP66 Fixture Integrated	**W**	---		W-mount is the original form factor of T5 ONS for IP66 fixture integration through a 2" hole or with a PMB-500.
Fixture External	**E**	EMB-500		The EMB-500 is a bracket for mounting the F-mount T5 ONS with indoor luminaire through a 1/2" hole.
IP66 Fixture External	**P**	PMB-500		The PMB-500 is a bracket for mounting the W-mount T5 ONS with IP66 luminaire through a 1/2" hole.
Ceiling Surface	**S**	SMB-500		The SMB-500 is a bracket for mounting the F-mount T5 ONS on the surface of luminaire and hard lid ceiling with or without junction box.
Junction Box	**C**	CMB-500		The CMB-500 is a bracket for mounting the F-mount T5 ONS with an octagonal or square junction box.
Ceiling Recess	**R**	RMB-500		The RMB-500 is a bracket for recess mounting the low voltage T5 ONS through a 2.8" hole.

Accessories
Following accessories can be applied to extend or change sensor position for the OS-NET Sensor with E/P mount.

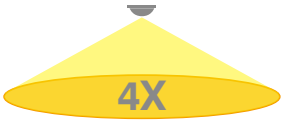
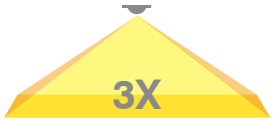
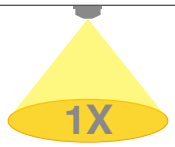
EJ-30F
30 mm extension joint

EJ-50F
50 mm extension joint

EL-40F
40 mm elbow joint

Lens Options

Every PIR sensor requires an optical lens to collect infrared energy emitted from human/vehicle. Lenses with different Fresnel segment designs provide different detection patterns and for different mounting heights. Following lenses are available for the OS-NET Sensors with T5, A6, and Z7 form factors. For more details, please refer the lens datasheet available from www.irtec.com.

Code	Lens	Coverage & Mounting Height	Feature and Application Notes
A	 Cone	8~15 ft (2.4~4.5 m) 	Lens A is a standard lens with 2X height coverage. It can be used to cover small to medium areas with major and walking motions.
B	 Cone	8~10 ft (2.4~3.0 m) 	Lens B is a wide angle lens with 6X mounting height coverage. It provides good detection to the major motions across the detection zones.
C	 Cone	15~30 ft (4.5~9.0 m) 	Lens C is a high bay lens with coverage up to 3X mounting height for using at warehouse or area up to 30 ft high.
D	 Round flat	8~20 ft (2.4~6.0 m) 	Lens D is a flat round lens with 2X height coverage. This lens provides better minor motion detection for using at office areas.
F	 Dome	8~20 ft (2.4~6.0 m) 	Lens F is a wide-angle lens with 4X height coverage ideal for general application. It has good picking up for major and minor motions.
G	 Arch	8~40 ft (2.4~12.0 m) 	Lens G is a universal aisle way lens with 3X height coverage ideal for aisle way detection. This lens can be rotated to align with the direction of aisle.
H	 Dome	30~50 ft (9.0~15.0 m) 	Lens H is a high bay lens with 1X height coverage. This diamond cut lens is specially designed for high bay application.
L	 Arch	8~10 ft (2.4~3.0 m) 	Lens L is a wide-angle lens with 6X height coverage designed for long corridor. This lens can be rotated to align with the direction of corridor.

NOTES
1. Coverage data is based on walking across the detection zones at 77°F. Higher temperature or walking toward the sensor will result in smaller coverage.
2. Mounting heights are recommended for obtaining optimal detection. Using at higher or lower is possible.
3. Lens C/G/H may be used up to 40/50/60 ft at the areas with motions of large objects, such as forklift or trucks. To use the sensor higher than the recommended maximum height, please first ensure that the sensor with specific lens can pick up the motion at desired mounting height.
4. Lens G/L are not IP66 rated.

Simplicity is the Ultimate Sophistication

Each OS-NET Sensor features sophisticated sensing, control and networking capabilities which help creating the simplicity of OS-NET. Each ONS can be set to control the associated lighting in one of the following schemes derived from occupancy, vacancy and daylight sensing control strategies.

<table>
<tr><th>Scheme</th><th>Status</th><th>Day*</th><th>Night*</th><th>Operation Description</th></tr>
<tr><td rowspan="2">ON/OFF</td><td>Vacant</td><td colspan="2">OFF</td><td rowspan="2">Lighting will be inhibited when the ambient light level is higher than the set threshold, regardless of occupancy or vacancy. When the ambient light level is lower than the set threshold, the controlled light will be turned on when sensor detects the presence of occupant. Sensor will turn off the light after the delay time elapsed.

NOTE: This is a typical occupancy sensing control scheme for dimmable or non-dimmable lighting, but not HID.</td></tr>
<tr><td>Occupied</td><td>OFF</td><td>ON</td></tr>
<tr><td rowspan="3">OSO</td><td>Vacant</td><td colspan="2">Low Dim</td><td rowspan="3">When space is vacant, the lights will be maintained at Low Dim level. Whenever space is occupied, lighting output will be increased to High Dim level or continuously regulated to maintain within the pre-set range by SmartDIM control.

NOTE: This is an occupancy sensing control scheme suitable for areas that require 24-hour lighting.
Do NOT use with non-dimmable lighting.</td></tr>
<tr><td rowspan="2">Occupied</td><td colspan="2">High Dim</td></tr>
<tr><td colspan="2">SmartDIM</td></tr>
<tr><td rowspan="3">OSLA</td><td>Vacant</td><td>OFF</td><td>Low Dim</td><td rowspan="3">Lighting will be inhibited if the ambient light level is higher than the set threshold, regardless of occupancy or vacancy. When the ambient light level is lower than the set threshold, the sensor will automatically control the light at Low Dim level. When sensor detects the presence of an occupant, lighting output will be increased to the High Dim level or continuously regulated within the pre-set range by SmartDIM control. After the delay time elapsed, lighting output will be reduced to Low Dim level or shut off if the ambient light is higher than the set threshold.

NOTE: This is an occupancy sensing control scheme to be applied in spaces that require automatic lighting whenever ambient light level is lower than the set threshold.
Do NOT use with non-dimmable lighting.</td></tr>
<tr><td rowspan="2">Occupied</td><td>OFF</td><td>High Dim</td></tr>
<tr><td colspan="2">SmartDIM</td></tr>
<tr><td rowspan="3">OSLATO</td><td>Vacant</td><td>OFF</td><td>Low Dim & OFF</td><td rowspan="3">Lighting will be inhibited if the ambient light level is higher than the set threshold, regardless of occupancy or vacancy. When the ambient light level is lower than the set threshold, and any sensor detects the presence of occupant, lighting output will be increased to High Dim level or continuously regulated to maintain overall lighting level within the pre-set range by SmartDIM control. After the delay time elapsed, lighting output will be reduced to Low Dim level for a period of TIME OFF delay before shut off.

NOTE: This is an occupancy sensing control scheme can be applied in spaces that require maintaining Low Dim lighting for a period of time before shutting off. This scheme requires dimmable lighting to enable dimming control. If lighting is non-dimmable, the controlled lights will be shut off after the TIME OFF delay elapsed.</td></tr>
<tr><td rowspan="2">Occupied</td><td>OFF</td><td>High Dim</td></tr>
<tr><td colspan="2">SmartDIM</td></tr>
</table>

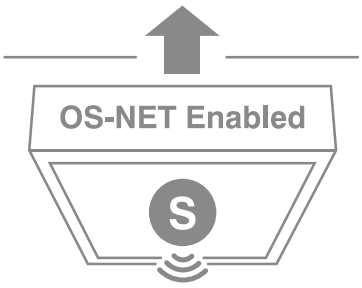
*Day/Night refers to the condition when ambient light level is higher/lower than the threshold set.

Scheme	Status	Day*	Night*	Operation Description
DSVM	Vacant	OFF	High Dim/ SmartDIM & Low Dim	Lighting will be inhibited if the ambient light level is higher than the set threshold. When the ambient light level is lower than the set threshold, the sensor will turn the light to High Dim level or continuously regulate the output to maintain overall lighting level within the pre-set range by SmartDIM control. Lighting output will be reduced to Low Dim level from a certain time before virtual midnight to a certain time after. **NOTE:** This is a **daylight sensing control** scheme to be applied in spaces that require automatically dimming the light to a low level between a certain time before and after virtual midnight. This scheme requires **dimmable** lighting to enable dimming control. If lighting is **non-dimmable**, the controlled lighting will remain full on whenever the ambient light level is lower than the set threshold.
	Occupied	OFF	High Dim/ SmartDIM & Low Dim	
DSC	Vacant	OFF	High Dim/ SmartDIM	The sensor will automatically turn on the light to High Dim level or continuously regulate the output to maintain overall lighting level within the pre-set range by SmartDIM control when the ambient light level is lower than the set threshold, and automatically turn off the light when the ambient light level is higher than the set threshold. **NOTE:** This is a **daylight sensing control scheme** to be applied in spaces that require automatic lighting whenever the ambient light is lower than the set threshold. This scheme requires **dimmable** lighting to enable dimming control. If lighting is **non-dimmable**, all lights will remain full on whenever ambient light level is lower than the threshold.
	Occupied	OFF	High Dim/ SmartDIM	
VSC	Vacant	OFF		The occupant would have to press the OS-NET Button to turn on the lighting group assigned. The sensor will control the lights at High Dim level or continuously regulate the output to maintain overall lighting level within the pre-set range by SmartDIM control. The sensor will control the connected lighting as per OSLATO. **NOTE:** This is a **vacancy sensing control** scheme to be applied in spaces that require users to manually turn on the light, and have the sensor turn off automatically. This scheme requires **dimmable** lighting to enable dimming control. If lighting is **non-dimmable**, the controlled lighting will be shut off after the TIME OFF delay elapsed.
	Occupied	Manual ON		
OSB	Vacant	OFF	OFF/ Low Dim	Lighting will be inhibited if the ambient light level is higher than the set threshold, regardless of occupancy or vacancy. When the ambient light level is lower than the set threshold and the first occupant is detected by a grouped sensor, the output of sensor connected light will be increased to High Dim level or continuously regulated within the pre-set range by SmartDIM control during occupancy, and the unoccupied areas of entire lighting group will brighten up to Low Dim level as background light. The entire lighting group turns off after the last person leaves and delay time elapsed. **NOTE:** This is an advanced **occupancy sensing control** scheme to be applied in open offices to provide background light level before the area of entire lighting group is vacant. Do **NOT** use this scheme to control **non-dimmable** lighting.
	Occupied	OFF	High Dim	
		SmartDIM		
OFF	Vacant	OFF		Once this scheme is set, **ALL** controlled lighting will remain OFF until another scheme is selected **NOTE:** This is a manual control scheme can be used to keep the lights off for a certain period of time.
	Occupied	OFF		

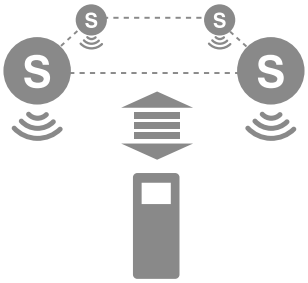
Delivering Smart Lighting Control with **3 Easy Steps**

Not all wireless lighting control solutions featuring the simplicity as you would expect. In fact, many can still frustrate lighting professionals due to different aspect of complication and complexity. OS-NET is a real simple solution that allows you to deliver a commercial/industrial lighting system with code-compliant, smart networked control. No router, no hub, no fixture controller, no room controller, no central control panel, no PC, no management software. All you need is an installation tool box with a SRP-281 remote programmer.

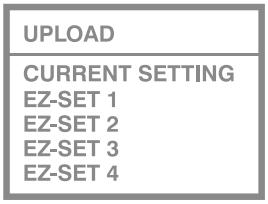
1 **Install the OS-NET enabled luminaires and devices**



2 **Link and group the OS-NET devices to the network**



3 **Set the control scheme and parameters as desired**



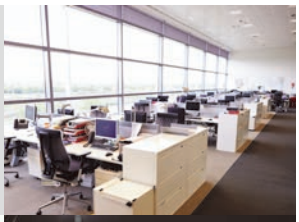
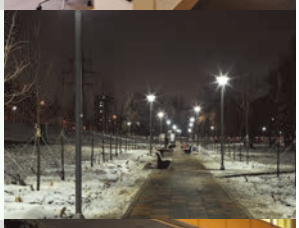
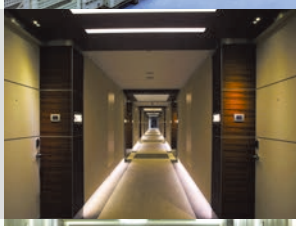
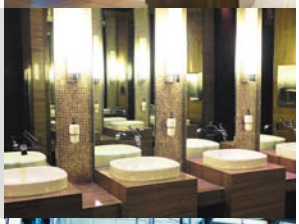
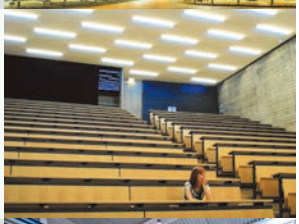
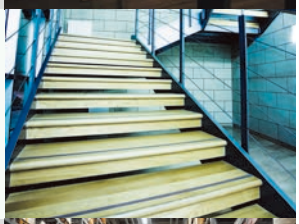
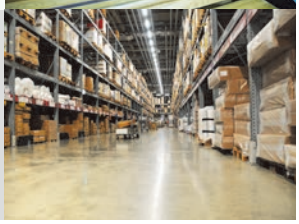
An Optimized Solution with Clearly Better Edges

OS-NET is an optimized wireless solution with clearly better competitive edges in many aspects that no other single solution in the market can match.

Terms	OS-NET	Other Solutions
Device Simplicity	All sensing, control, and networking can be done with OS-NET Sensors. OS-NET Buttons and Power Packs are non-essential extra.	Most require complex devices, including Sensors, Fixture/Load Controllers, Switches, Dimmers, and Hubs/Gateways.
Integration Flexibility	OS-NET Sensors feature different form factors for flexible integration with OEM luminaires and lighting circuit controls.	Many require extra wiring connection between sensors and controllers. Only limited options available for LLLC.
Ease of Installation	Installing OS-NET enabled devices are virtually same as typical luminaires, sensors and wall switches.	Many consist of complex devices which result in more installation time and higher labor cost.
Operation Software	Requires no any management software to run the system. Each OS-NET device is a self-contained network control unit.	Many require proprietary management software to run the system.
System Security	Individual sensing control and operation under a standalone network ensures the highest system security.	PC-based or WiFi accessible system is more vulnerable to hostile threats or cyber attacks.
Control Functionality	Each OS-NET device can be programmed to provide specific sensing and control function with individual settings.	Sensing and control functionalities are determined by different devices or central controls.
Ease of Commissioning	Use a handheld remote to configure network, group, and device control scheme settings.	Most require complicated commissioning procedures via PC, special hardware and/or software tool.
Ease of Maintenance	Maintenance is exactly same as conventional lighting and sensor. Just replace the faulty and add the new device to the network.	Most require professional engineer to execute necessary maintenance. Removing the device can be complicated.
Application Range	Available for most indoor and outdoor applications of commercial and industrial lightings.	Many are only available for indoor lighting with limited applications and ceiling heights.
Freedom of Supply	Not binding with specific fixture manufacturer. Available with luminaires from different manufacturers.	Some may require luminaires with specific devices from certain manufacturers certified.
Future Scalability	Just require an easy remote operation to add the new OS-NET enabled lighting or device to the target network and group.	Adding new devices to the system normally would require the original installing and commissioning staff to get the job done.
Ownership Cost	Lower project and ownership costs effectively shorten the ROI.	Higher project and ownership costs prolong the ROI.

Scalable Intelligent Lighting for All Applications

The OS-NET solution can be used indoors or outdoors in most applications of commercial, industrial, and institutional lighting environments to maximize energy efficiency through a wirelessly interconnected, versatile, simple to use, intelligent lighting control network.

Classroom		Office	
Cold storage		Outdoor	
Corridor/hallway		Parking garage	
Emergency exit		Retail	
Hazardous/ chemical area		Public restroom	
Lecture hall		Stairwell	
Manufacturing		Warehouse	

A Simple Solution
Benefits All Parties

The OS-NET is capable of providing top-notch energy efficient, code-compliant, sophisticated multi-scheme controls without requiring extra sets of control wire networking to each luminaire and circuit. These controls include occupancy, vacancy, and daylight sensing based for on-off switching, bi-level StepDIM and continuous SmartDIM to the connected lighting in an individual or a group basis. With above capabilities, it can help lighting industry achieve smart controls with unsurpassed level of Flexibility, Functionality, and Simplicity.

OEM Lighting Manufacturer

With OS-NET, an OEM lighting manufacturer can easily deliver smart lighting via integrating OS-NET sensors with luminaires. All OS-NET enabled luminaires can be easily grouped and intuitively set to execute smart LLLC through wireless mesh network via a handheld remote.

Lighting Designer/Specifier

With OS-NET, designing a smart lighting system featuring code-compliant controls will be same as selecting general luminaires and ceiling sensors. No more complicated devices required, just allocating the OS-NET enabled luminaires and other devices at proper positions.

Electrical Contractor/Installer

With OS-NET, installing an advanced lighting system featuring smart controls will be same as installing the conventional lighting and ceiling sensors. The intelligence is built in each OS-NET enabled luminaire and devices. All you need to do is installing, grouping and setting.

OS-NET SENSORS

Model No.	x - Mounting	y - Lens	Power Input	Control Output
ON-MRD-124S[1]	--	--	DALI bus	DALI
ON-LRD-209S	--	--	120/277 VAC	0-10V, Switched live
ON-MRD-210S	--	--	120/277 VAC, DALI bus	DALI
ON-LRD-209SP	--	--	120/277 VAC	0-10V, Switched live
ON-MRD-200SP	--	--	120/277 VAC, DALI bus	DALI
ON-LRD-309S[2]	--	**a/b/c/d/f/g/h/l**	120/277 VAC	0-10V, Switched live
ON-LRD-309SP[2]	--	**a/b/c/d/f/g/h/l**	120/277 VAC	0-10V, Switched live
ON-BRD-500Sxy	**F/W/E/P/S/C/R**	**A/B/C/D/F/G/H/L**	12-24VDC	0-10V, Digital output
ON-LRD-509Sxy	**F/W/E/P/S/C**	**A/B/C/D/F/G/H/L**	120/277 VAC	0-10V, Switched live
ON-MRD-510Sxy	**F/W/E/P/S/C**	**A/B/C/D/F/G/H/L**	120/277 VAC, DALI bus	DALI
ON-LRD-609Sxy	**A**	**A/B/C/D/F/G/H/L**	120/277 VAC	0-10V, Switched live
ON-MRD-600Sxy	**A**	**A/B/C/D/F/G/H/L**	120/277 VAC, DALI bus	DALI
ON-BRD-734Sxy	**Z**	**A/B/C/D/F/G/H/L**	12-24 VDC	0-10V, Digital output
ON-MRD-734Sxy	**Z**	**A/B/C/D/F/G/H/L**	Aux (+24V)	DALI

[1] PPU-100DP or PPU-109DA may be required if luminaire is not with DALI driver featuring integrated bus power.
[2] Lens is separately sold item.

OS-NET BUTTONS

Model	Power Input	Mounting	Control	Channel
ON-PBD-705W	120/277 VAC	NEMA Wall box	On, Off, Dim	1
ON-PBD-708W	120/277 VAC	NEMA Wall box	On, Off, Dim	4

OS-NET POWER PACKS & CONTROLLERS

Model	Power Input	Power Output	Control Scheme	Max. Load
ON-PPU-301	120/277 VAC	24 VDC, 100 mA	ON/OFF, VSC, PLC	20 A
ON-PPU-302	120/277 VAC	24 VDC, 100 mA	ON/OFF, OSO, OSLATO, VSC	20 A
ON-PPU-303	120/277 VAC	--	--	--
ON-PPU-304	120/277 VAC	--	--	20A

OS-NET REMOTE PROGRAMMER

Model	Power Input
SRP-281	2x AAA Battery

About IR-TEC

Found in 1982, as a pioneer of infrared motion sensing products, IR-TEC has established a solid reputation as a truly Innovative, Reliable, Technological, Efficient, and Cooperative business partner of its global customers. All IR-TEC products are designed, manufactured, and verified by a professional team under a well-maintained ISO-9001 quality management system in a state-of-the-art ISO-14001 certified manufacturing facility in Taiwan.

With decades of continuous hard work, IR-TEC has created a wide range of product portfolio, including occupancy/ vacancy sensors, daylight sensors, power packs and controllers for commercial and industrial buildings to achieve the highest level of energy savings with occupancy/vacancy sensing based smart lighting and HVAC controls, without compromising occupant's comfort.

OSNET

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