ENDO
LIGHTING CORP.
www.endo-lighting.co.jp

Smart
LEDZ®
SYSTEM

Easy, Convenient, and Flexible

The New Standard of Lighting Control

Just install your lighting fixtures—and you're all set!
An innovative dimmer application that flexibly "fits"
your needs and the needs of your space.

No Additional Cost to Start

Start anytime

You can control your lighting without construction work just by installing compatible lighting fixtures.
No special equipment necessary.
Customize your lighting easily using your smartphone or tablet.

Flexibly make changes later

Flexibly adaptable to layout changes and fixture additions.
The system allows settings to be freely changed according to the method of use.

Rapid Setup In 3 Steps

No major construction necessary

A simple system that lets you get started just by installing the fixtures.

STEP 1
Install wireless dimmer compatible fixtures

Built-in wireless module

Built-in wireless module

Install lighting fixtures as you usually would.

STEP 2
Download specialized app and perform settings
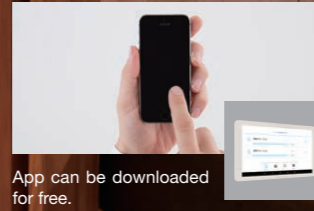
App can be downloaded for free.

STEP 3
You're all set!
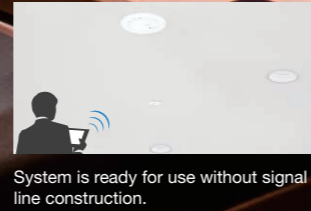
System is ready for use without signal line construction.

Easily Connectable Up to 250 units

One system supports up to 250 units.

Using the gateway, Smart LEDZ Fit can control up to 250 fixtures per system*. Also, intercommunication (2.4 GHz mesh) between lighting fixtures allows for more stable operation.

*Sensors and remote controls included in the 250 fixtures.

1 Finger Operation

Easy and intuitive operation at the touch of a finger

Specialized app (free to download) that supports commercially available tablets and smartphones. Its intuitively usable interface allows anyone to access a diverse variety of dimming features, such as individual control and scene switching, at the touch of a finger, without any special training.

What is Smart & Fit ?

More Useful and Affordable than Manual Dimmers!

Costs less than using manual dimmers, even if you employ a Gateway for automatic operation.

Gateway

PWM Light Controller
(X-239WB)

One unit covers all and has an automatic operation feature.

One needed for each circuit

A great "fit" even for those who want to "start small."

■ Initial cost comparison between wired dimmer system and Smart LEDZ Fit

Construction works for wired signals + signal wiring

Dimmer cost

Wired dimmer system
+
Lighting fixtures for wired dimmers

Costs for lighting fixtures for wired dimmers

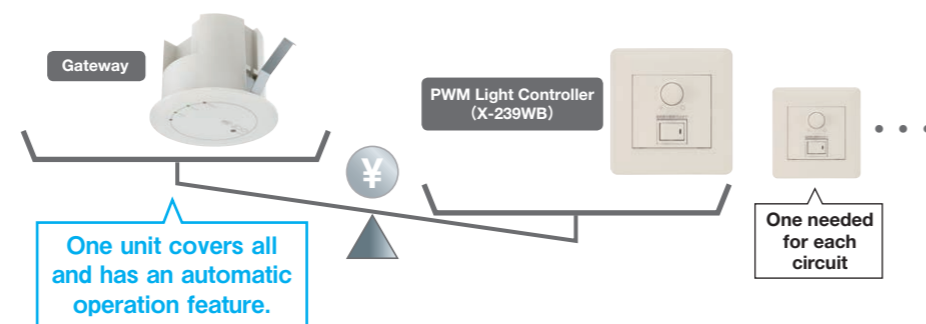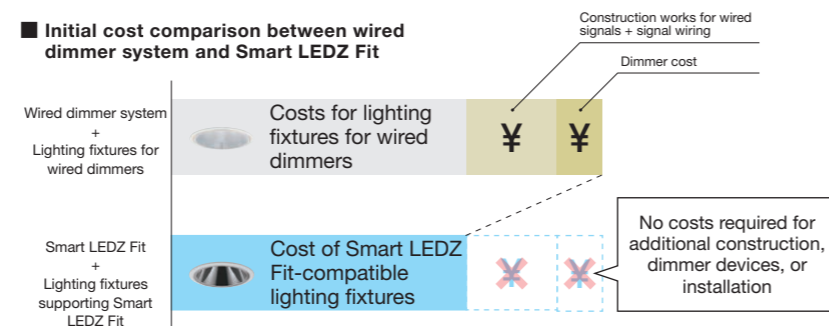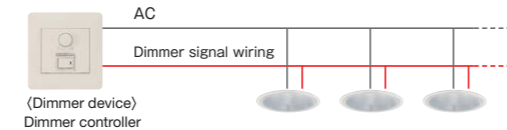¥ ¥

Smart LEDZ Fit
+
Lighting fixtures supporting Smart LEDZ Fit

Cost of Smart LEDZ Fit-compatible lighting fixtures

No costs required for additional construction, dimmer devices, or installation

■ Configuration for wired dimmer lighting systems

AC

Dimmer signal wiring

〈Dimmer device〉
Dimmer controller
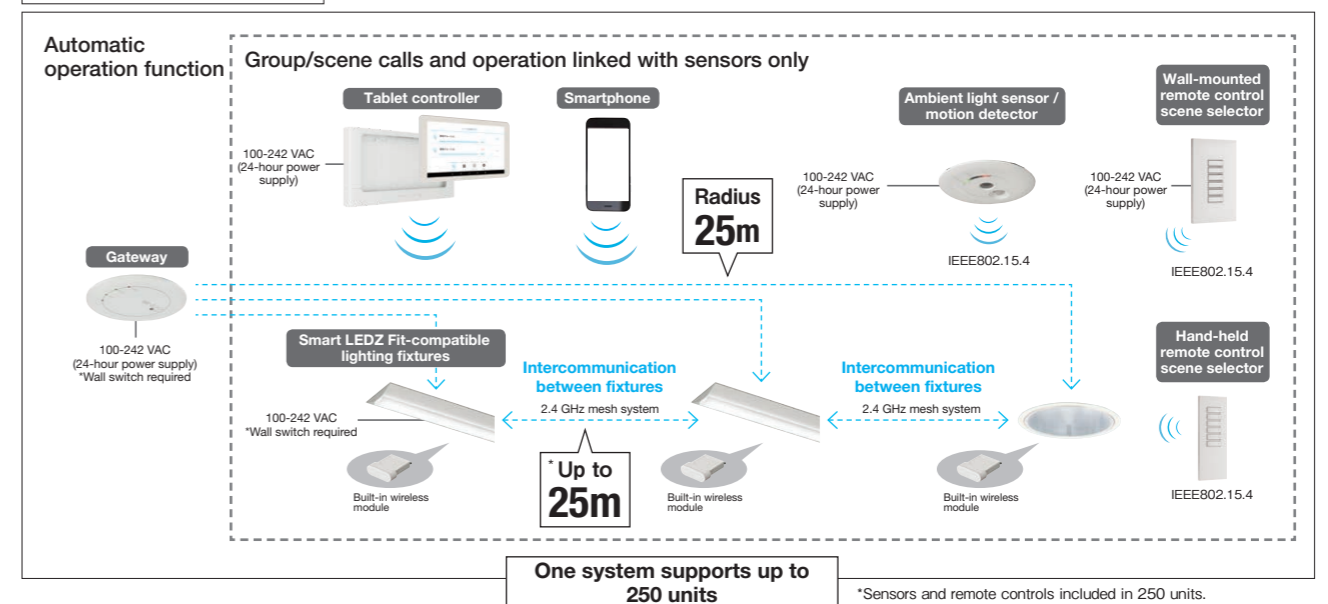
■ Configuration for Smart LEDZ Fit

AC

Dimmer signal wiring

Free smartphone app
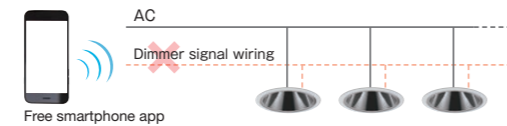
Scalable to suit your needs

A simple system configuration coupled with versatile setup features. A rich array of useful features such as set data saving and copying.

System Configuration

Automatic operation function

Group/scene calls and operation linked with sensors only

Tablet controller

Smartphone

Ambient light sensor / motion detector

Wall-mounted remote control scene selector

100-242 VAC (24-hour power supply)

100-242 VAC (24-hour power supply)

100-242 VAC (24-hour power supply)

Radius **25m**

Gateway

100-242 VAC (24-hour power supply)
*Wall switch required

IEEE802.15.4

IEEE802.15.4

Smart LEDZ Fit-compatible lighting fixtures

Intercommunication between fixtures
2.4 GHz mesh system

Intercommunication between fixtures
2.4 GHz mesh system

Hand-held remote control scene selector

100-242 VAC
*Wall switch required

* Up to **25m**

Built-in wireless module

Built-in wireless module

Built-in wireless module

IEEE802.15.4

One system supports up to 250 units

*Sensors and remote controls included in 250 units.
*Maximum communication distances may vary according to fixture structure; please check the specifications diagram.

A New, More Reliable Communication System

Newly adopted intercommunication method where signals are relayed, enabling them to go around obstacles, making it easier to connect than in conventional systems.

Conventional system Star system

New system Intercommunication system (2.4 GHz mesh)

Area where signals are hard to reach

Fixture control information sent from Gateway

Fixture control information sent from fixtures as well as Gateway
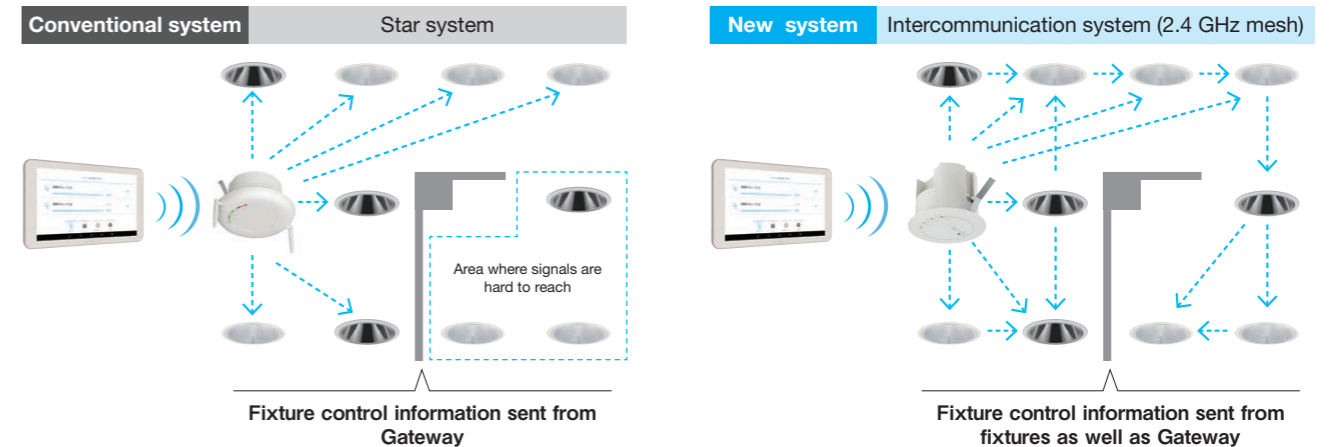
Select the system according to your purpose

You can choose an affordable "investment" to suit your purpose.

Smart **LEDZ Fit** MAX 250 UNITS			Smart **LEDZ Fit Plus** MAX 30,000 UNITS	
1	2	3	4	5
Easy to start!	Easy to start without using a personal smartphone	Automatic timed control	Control numerous lighting fixtures	Control numerous lighting fixtures linked with other equipment

*The same lighting fixtures are used for both Fit and Fit Plus.

Smartphone/tablet app	Tablet	Smartphone/ tablet app — Tablet	Tablet	Tablet
—	—	Dedicated gateway for Smart LEDZ Fit (Up to 1 unit)	Dedicated gateway for Smart LEDZ Fit Plus (Up to 12 units)	Dedicated gateway for Smart LEDZ Fit Plus (Up to 12 units)
—	—	—	—	Centralized management software / EMS unit

Expand features by adding options!

Handy remote controller scene selector	Wall-mounted remote control scene selector	Ambient light sensor / motion detector	Non-voltage a-contact unit	PWM signal unit
Allows you to switch scenes with the touch of a button		Controls lighting fixtures according to ambient brightness and how people move	Enables wireless control of lighting fixtures without dimming control*	Enables wireless control of PWM lighting fixtures

*Requires remote control breaker with a-contact input. Dimming not supported; lights can only be turned on or off. See specifications diagram for details.

Basic features	Basic features	Basic features	Basic features	Basic features
Feature expansion options	Feature expansion options	Feature expansion options	Feature expansion options	Feature expansion options
			System expansion options	System expansion options

- Individual control
- Scene switching
- Illuminance scheduling
- Maintains appropriate illuminance
- Expansion of controllable units
- Maintains illuminance by utilizing daylight
- Lighting fixture layout
- Illuminance control using motion sensor
- Centralized control
- Linked with external equipment

Setting and operation are intuitive!

The location of the lighting fixtures is displayed on the tablet, therefore grouping and manipulation of the lighting fixtures are intuitive. Since grouping can be performed in advance, it is possible to shorten the setting time at the site.

Main Features

Individual control

Allows you to control each lighting fixture individually to fine-tune your lighting environment.

100% brightness   95% brightness   15% brightness
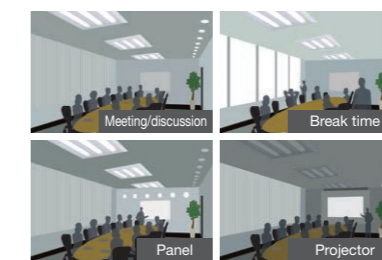
Flexible individual control!!
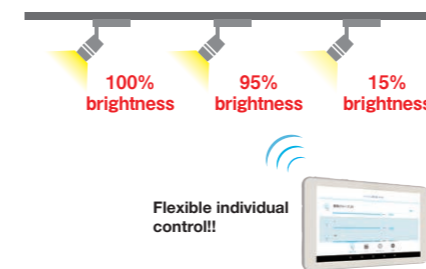
Scene switching

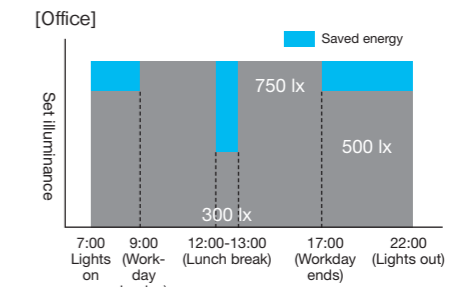Allows you to call the scene that best suits your settings.

*In closed-off spaces such as conference rooms and office rooms, remote controls are convenient. Up to 6 scenes can be set and registered on a single remote control.

Meeting/discussion   Break time   Panel   Projector

Scheduling

Different brightness settings can be set for different times of the day or according to your weekly schedule.

[Office]

Saved energy

Set illuminance

750 lx
500 lx
300 lx

7:00 Lights on / 9:00 (Workday begins) / 12:00-13:00 (Lunch break) / 17:00 (Workday ends) / 22:00 (Lights out)
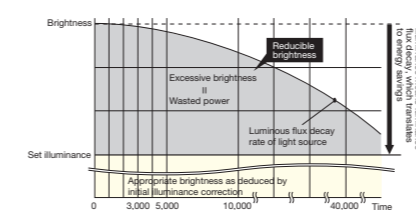
Maintaining appropriate illuminance

Ambient light sensor detects brightness to automatically make adjustments to match your illuminance settings. Energy saving is realized through maintaining appropriate illuminance.

*Cannot be used together with scene/scheduling features

Brightness

Excessive brightness = Wasted power
Reducible brightness
Luminous flux decay rate of light source
Appropriate brightness as deduced by initial illuminance correction
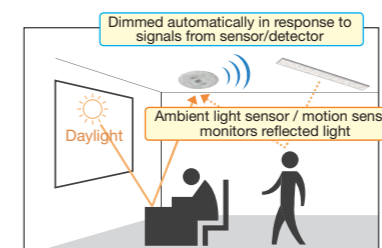Set illuminance

0   3,000 5,000   10,000   40,000   Time

Maintaining appropriate illuminance by utilizing daylight

Ambient light sensor / motion sensor automatically detects the brightness of natural light to maintain appropriate illuminance, both day and night.

*Cannot be used together with scene/scheduling features

Dimmed automatically in response to signals from sensor/detector

Daylight

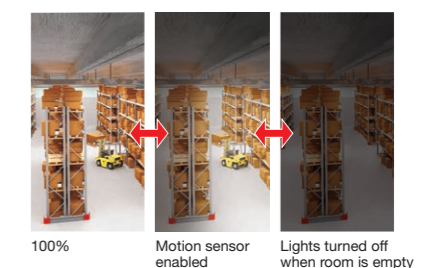Ambient light sensor / motion sensor monitors reflected light

Illuminance control using motion sensor

Saves energy by setting brightness according to space usage conditions.

*Cannot be used together with scene/scheduling features

100%   Motion sensor enabled   Lights turned off when room is empty

10,000 use cases

Employed and favorably received in many projects

Morning

Olinas Mall Core

Owner: CapitaLand (Japan) Kabushiki Kaisha
Environmental Design: Bauhaus Maruei Co., Ltd.
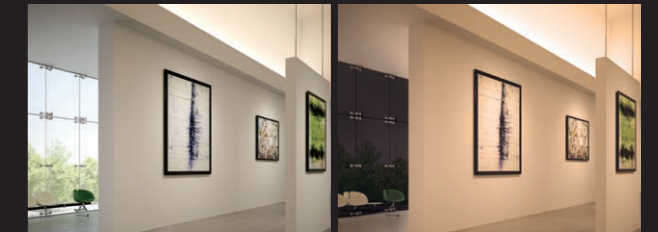**Construction**: Tokyu Construction Co., Ltd.

Daytime

Night

You can feel sky through indirect lighting fixtures

Color temperature changes in conjunction with light from outside.
The effects tailored to the time zone make the ceiling freedom like sky. In addition, it is possible to create effects that people can feel the time lapse on the wall surface of room.

Morning : 5000K

Evening : 2700K

You can emphasize the object by color tuning

Illuminating at a color temperature slightly higher than the surrounding environment makes the object prominent and increases visibility from remote locations.
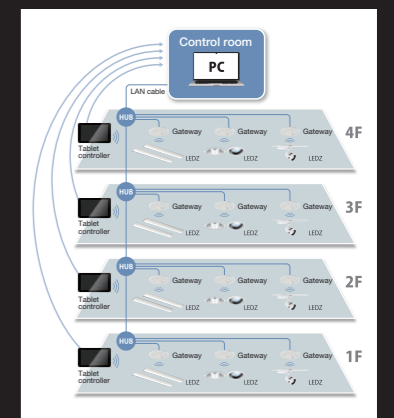

No dimming : All 3500K

Dimming : VIP effect 4000K

You can control lighting fixtures with general PC at a low cost. It is possible to control and operate 30,000 lightings fixtures.

By using central control software, maximum 30,000 lighting fixtures for 10 systems can be controlled and operated by general PC. Complicated systems and personal computers are not required, therefore the cost of installation can be drastically reduced and operators can enhance efficiency of operation.

So far...

It is hard to control lightings on a floor by floor basis!

Smart**LEDZ** Central control software···

All the lighting fixtures in the whole building can be controlled at a place!	You can dim lighting fixtures installed on specific floors!
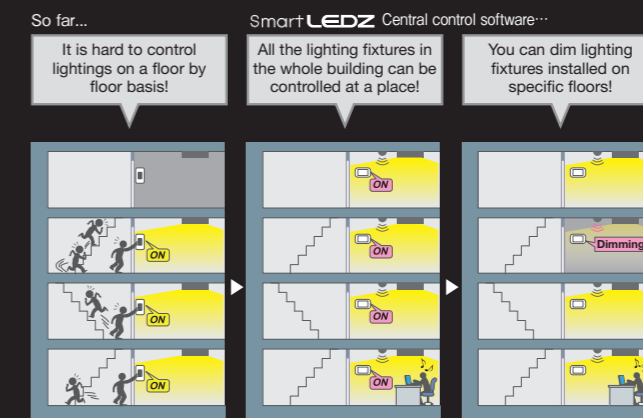
Projects

Prism Hall, Tokyo Dome City

Place: Bunkyo-ku, Tokyo
Owner: Tokyo Dome Corporation
Design: PARCO Space Systems Co., Ltd.

Prism Hall, Tokyo Dome City is an event hall operated by Tokyo Dome Corporation and 2,000 people can stay in the hall. It is used for a wide range of purposes such as exhibition, sales meeting, various seminars and events because of that JR Suidobashi station, Tokyo Metro Marunouchi line and several stations such as Korakuen station are close to the hall and traffic access is excellent. In the hall, central control system was introduced from the viewpoint of Smart LEDZ and management system so that it can correspond to a wide variety of application in line with conventional lighting fixtures to LED.

Large-scale individual dimming and total dimming can be easily achieved by tablet control at the site and central control by PC.
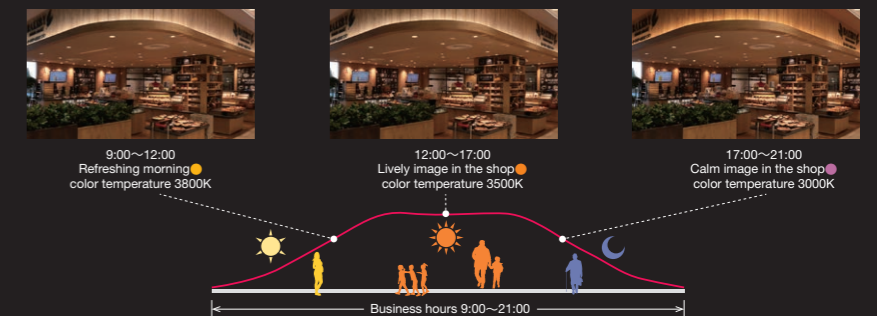
In this project, approximately 600 fluorescent lamps were replaced with 300 base-lighting fixtures and 300 ceiling-downlights. At the same time, the project adopted Smart LEDZ that allow light to be controlled without changing lighting fixtures and wires for each event. The tablet is handed over to event company in charge of the construction of each event, and lighting control in line with the concept of the event can be done at the site. In addition, the hall is divided by partitions, and there are many cases where multiple events are held. If there are Smart LEDZ, you can dim each of the areas. Furthermore, from the state that each of event companies dims lighting fixtures separately, it is possible to turn back to the state before the events by central control system in the control room. As a result, light environment wanted by event companies can be faithfully produced at the site, and lighting management such as restoration by facilities manager becomes easier.

Ito-Yokado No Yakitate Pan, Higashiyamato Store

Smart LEDZ can create a flow of light that is in harmony with the optimal light environment and human senses tailored to the day's movement.

Owner: Ito-Yokado Co., Ltd.

9:00〜12:00 Refreshing morning color temperature 3800K

12:00〜17:00 Lively image in the shop color temperature 3500K

17:00〜21:00 Calm image in the shop color temperature 3000K

Business hours 9:00〜21:00

Dimming and color tuning based on internal rhythm and external light

If you use Smart LEDZ scheduling function for dimming and color tuning in conjunction with internal rhythm (circadian rhythm), you will be able to make suitable effects in the morning, day time and night as customers can feel relaxed in the shop. As the result, wasteful power consumption is reduced, leading to reduction in power consumption throughout the year.

Reduction in power consumption by approximately **28%** compared with conventional lighting fixtures

■ Power consumption simulation

		Power consumption (W)	Annual power consumption (kWh)
LEDZ 100% lighting on	all day	3237	14,178
Smart LEDZ Schedule control	Morning		
	Daytime	2317	10,148
	Night		

Quantities and lighting times are simulations of assumptions.

Difference in electric energy 4,030kWh

Approximately 28% reduction

Lighting day per year : 365 days per year
Lighting time: 12 hours per day

Making dimming and color tuning more accessible— A proposal that "fits" your needs!
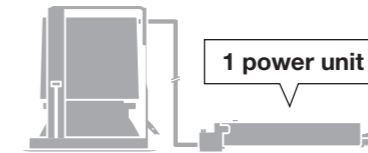
Dimming and color tuning for your entire space

Products in our new Dimming and Light Tunable Series all have a color tuning range of 6500K-2700K. This allows you to collectively adjust all fixtures in your configured group to the same color temperature and dimming rate. You can easily make dynamic spatial presentations.

6500K
100%

2700K
100%

1%　　　　　　　　　　1%
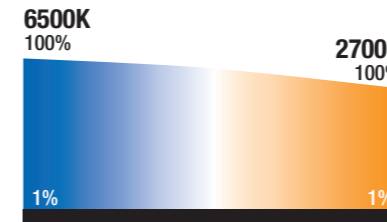
Easier construction and configuration

Previously, two power units were required for each fixture, which meant that two units needed to be registered to the controller as well. For this new product line, we made changes so that only one power unit is required per fixture, thereby improving workability and making registration and configuration easier.
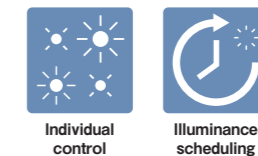
1 power unit

More intuitive operations

Dimming and color tuning can now be performed separately. Adjustments for individual fixtures, entire groups, etc. can be made intuitively and easily through on-screen operations.

Dimming operation

Color tuning operation
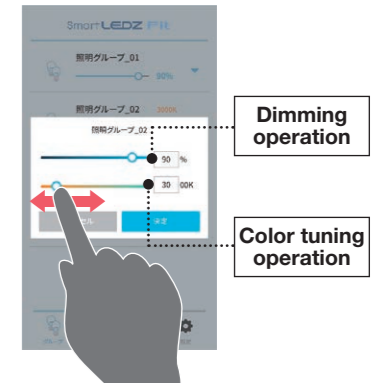
For example, at a restaurant...

Individual control

Illuminance scheduling

A space that is hospitable any time of the day.

Brightness and color temperatures can be set according to the time of day, in accordance with the daily schedule, to deliver a comfortable atmosphere. You can also set light-up times according to the weekly schedule to fit changes in business hours, or change your settings to accommodate special events, irregular occasions, and so forth.

9:00 5000K Brightness: 90%

12:00 4000K Brightness: 100%

21:00 2700K Brightness: 60%

16:00 3000K Brightness: 80%

9:00 5000K — Clear lights in the morning to start the day in a fresh mood.

12:00 4000K — Balance color temperatures to deliver warm-colored lighting for an animating effect during hours when the restaurant is bustling with customers.

16:00 3000K — Gradually lower illuminance suited to night scenes.

21:00 2700K — A warm, soothing light to set the scene for a relaxing time.

Smart LEDZ System Product List

Ambient Light Sensor / Motion Sensor

Fit/Fit Plus Combination

FX-428W
FX-428B

Body: Plastic (white matt finish / black matt finish)
Weight: 0.2kg   Rated voltage: 100-242 VAC: φ75   Adjustable sensor sensitivity
Built-in wireless module   2 light-proof stickers included
Cannot be installed with thermal insulation
Ambient light sensor mode: Only 1 unit can be registered for each group
Motion detector mode: Up to 10 units can be registered for each group

· 24-hour power supply is required.
· This device uses intercommunication. Please install at least one system device within 25 m (line of sight). The accuracy of communication increases the more devices there are in the line of sight.
· Can be used with Smart LEDZ Fit/Fit Plus compatible fixtures.

W (white)

B (black)

NEW

Registered Design

Direct-mount Bracket for Illuminance Sensor and Human Sensor

FX-269W
FX-269B

Body: White/black

NEW

75

Handy Remote Controller Scene Selector

Fit/Fit Plus Combination

FX-431W

Body: Plastic (white)   Weight: 0.1kg
Power: 2 × AAA batteries   Built-in wireless module
With wall bracket   Switchable for up to 6 scenes
Up to 10 units can be registered per system.

· Up to 10 units can be registered in total with the Wall-mounted Remote Control Scene Selector and the Handy Remote Controller Scene Selector.
· Can be used with Smart LEDZ Fit/Fit Plus compatible fixtures.

NEW

Patented

Wall-mounted Remote Control Scene Selector

Fit/Fit Plus Combination

FX-427W

Body: Plastic (white)   Weight: 0.1kg
Rated voltage: 100-242 VAC
Compatible with commercially available JIS-compliant single switch boxes.
Built-in wireless module   Switchable for up to 6 scenes
Up to 10 units can be registered per system

· Up to 10 units can be registered in total with the Wall-mounted Remote Control Scene Selector and the Handy Remote Controller Scene Selector.
· 24-hour power supply is required.
· This device uses intercommunication. Please install at least one system device within 25 m (line of sight). The accuracy of communication increases the more devices there are in the line of sight.
· Can be used with Smart LEDZ Fit/Fit Plus compatible fixtures.

NEW

Patented

Non-voltage A-contact Unit

Fit/Fit Plus Combination

FX-440W
FX-440B

Body: Plastic (white matt finish / black matt finish)
Weight: 0.2kg   Rated voltage: 100-242 VAC: φ75   Built-in wireless module
Cannot be installed with thermal insulation
Non-voltage a-contact output   100 VAC/30 VDC

· 24-hour power supply is required.
· This device uses intercommunication. Please install at least one system device within 25 m (line of sight). The accuracy of communication increases the more devices there are in the line of sight.
· Do not install in a distribution panel.

W (white)

B (black)

NEW

75

Notes · When controlling lighting fixtures, use LED lamps only.
· To control a fixture, use a "remote control breaker (always excited, a-contact type)."
· The contact circuit voltage of this unit should not exceed 100 VAC/30 VDC.
· This unit cannot be used in conjunction with the illuminance sensor and human sensor (FX-428W/B). (Can be linked for human sensor mode.)

PWM Signal Unit

Fit/Fit Plus Combination

FX-441W
FX-441B

Body: Plastic (white matt finish / black matt finish)
Weight: 0.2kg   Rated voltage: 100-242 VAC: φ75   Built-in wireless module
Cannot be installed with thermal insulation
PWM signal output   PWM dimming signal output line (CPEV-1P/0.9) must not exceed 100 m in total wiring length.
Each Signal Unit can be connected to a maximum of 50 PWM lighting fixtures.

· 24-hour power supply is required.
· This device uses intercommunication. Please install at least one system device within 25 m (line of sight). The accuracy of communication increases the more devices there are in the line of sight.
· Do not install in a distribution panel.
· The dimming range is limited by the dimming range of the PWM lighting fixtures.

W (white)

B (black)

NEW

75

Phase Dimming Unit

Fit/Fit Plus Combination

FX-426N

Weight: 0.3kg   Input voltage: 100 VAC (50/60 Hz)
Built-in wireless module
Cannot be installed with thermal insulation
Applicable load: 4 VA to 300 VA

· A minimum 75-mm dia. opening is required for ceiling mounting.
· Must be used in combination with a Smart LEDZ Fit/Fit Plus system.

NEW

Contact Converter

For Fit Plus only

FX-304W

Power consumption: 3.0W   Body: Plastic (white)
Weight: 0.3kg   Dimensions: 30 H × 140 W × 60 D
Rated voltage: 100-242 VAC
Power adapter included: a(b) contact input

NEW

Notes · This device cannot be used alone. Use only with a Model FX-438N Smart LEDZ Fit Plus Dedicated Tablet Controller (with AC adapter) and a Model FX-430W/B Smart LEDZ Fit Plus Dedicated Gateway.
· Use only the supplied power adapter.

Centralized Management Software

For Fit Plus only

FX-439N NEW

Windows 7 and above are supported. Max. number of controllable systems: 10

Notes · When connecting to a wired LAN, use a commercially available hub.
· Computer not included; a customer-supplied unit is required.

EMS Unit

For Fit Plus only

FX-452N NEW

Smart LEDZ Fit Plus: Manages 1 system (up to 3,000 units).

Tunable LEDZ LINE UP

Downlight

	6500K-2700K	Downlight						
Brightness		(200)		(125)		(100)	(75)	
		Cone: Mirror matt finish Cut-off angle: 30°	Cone: White Cut-off angle: 20°	Cone: Mirror matt finish Cut-off angle: 30°	Cone: White Cut-off angle: 20°	Cone: Mirror matt finish Cut-off angle: 30°	Cone: White Cut-off angle: 15°	Cone: Mirror matt finish Cut-off angle: 30°
9000TYPE		●	● ▸p. 26					
7500TYPE		●	● ▸p. 26					
4000TYPE				●	● ▸p. 27			
3000TYPE						● ● ▸p. 27	●	
1400TYPE								● ● ▸p. 28
900TYPE								● ● ▸p. 28

Cone: Black/White Cut-off angle: 30° (for 75 column)

Tunable Linear Light

Brightness	6500K-2700K
2800 lm (L:1200)	**Linear 32** L:1500 / L:1200 / L:900 / L:600 ▸p. 31
1500 lm (L:1200)	**Linear T5** L:1200 / L:900 / L:600 ▸p. 33
575 lm (L:1250)	**High-powered Flexible Lighting** L:10000~300 ▸p. 34
2800 lm (L:1500)	**Linear 32** L:1500 / L:750 ▸p. 32
2500 lm (L:1200)	**Linear 32** Comfort Tunable White 3000K-2000K L:1200 / L:900 / L:600 ▸p. 32

Brightness	6500K-2700K
6300 lm (L:1200TYPE)	**Linear 50** Surface mounted type / Recessed type / Slit type / Recessed open type / Recessed open deep type / Surface-mounted/Pendant type / Surface-mounted/Pendant type / Bracket type (up and down light distribution) ▸pp. 36~37
2800 lm (L:1200TYPE)	**Linear 32** Surface mounted type / Recessed type / Slit type / Recessed open type / Wall-washer type / Surface-mounted/Pendant type / Bracket type (upper light distribution) ▸pp. 37~38 / Surface mounted type / Bracket type (upper light distribution) ▸pp. 37~38

Tunable Adjustable Downlight / Tunable Glare-less Downlight / Tunable Glare-less Adjustable Downlight

6500K-2700K Wireless Tunable White Fit/Fit+	Tunable adjustable downlight		Tunable glare-less downlight			Tunable glare-less adjustable downlight		
	(100)	(75)	(125)	(100)	(75)	(125)	(100)	(75)
Brightness	Cone: Black/White	Cone: Black/White/Mirror matt finish Cut-off angle: 30°	Cone: Mirror finish Cut-off angle: 40°	Cone: Mirror finish Cut-off angle: 35°	Cone: Mirror finish Cut-off angle: 35°	Cone: Mirror finish Cut-off angle: 40°	Cone: Mirror finish Cut-off angle: 40°	Cone: Mirror finish Cut-off angle: 40°
9000TYPE								
7500TYPE								
4000TYPE								
3000TYPE	▸p. 30		▸p. 24			▸p. 25		
1400TYPE								
900TYPE	▸p. 29		▸p. 24		▸p. 25			

Tunable Base Light: SD Series — 6500K-2700K

Brightness	Surface mounted type							Recessed		
6900 lmTYPE 5200 lmTYPE **4Feet**	V shape W: 230	V shape W: 150	Linear type W: 79	With single reflective shade W: 86	With reflective shades W: 170	Troffer type W: 250	Wall-washer type	Troffer type W: 300	Troffer type W: 220	Troffer type W: 190
	V shape W: 230 (With pull switch)	V shape W: 150 (With pull switch)	Linear type W: 79 (With pull switch)	With reflective shades W: 170 (With pull switch)				Troffer type W: 150	Troffer type W: 220 (White louver type)	Troffer type W: 150 (White louver type)

▸pp. 40–42   ▸pp. 41–42

Tunable Square Panel Light — 6500K-2700K
▸p. 39

Brightness	Surface mounted type	Recessed
11000 lmTYPE ☐ 600 Series		
6000 lmTYPE ☐ 450 Series		
2700 lmTYPE ☐ 275 Series		

Tunable LEDZ

Fit/Fit Plus Wireless Tunable White

Tunable Glare-less Downlight

Suppress unpleasant brightness with Light Distribution Control.

The combination of a light-diffusing design that minimizes visibility of the lamp in the cone and a mirror-surface cone reduces brightness. The result is a glare-less fixture that doesn't draw attention to itself.
The refined design effectively hides the edge behind the cone and eliminates unpleasant brightness.

Comparison of cone brightness

Downlight with glare-less mirrored cone
Cone average brightness: 8 cd/m²

General purpose downlight with mirrored cone (silver)
Cone average brightness: 595 cd/m²

1000cd/㎡
100cd/㎡
10cd/㎡
1cd/㎡
0.1cd/㎡

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(125) ● 3000TYPE

V Free 100-242 | Wireless Tunable White Fit/Fit+ | Glare Cut 40° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours
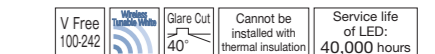
LED module included
Frame: Die-cast aluminum (matt white)
Cone: Aluminum (mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

Beam angle 49° Ultra-wide

6500K-2700K CRI85

ERD7602W
Rated luminous flux 1689lm
27.5w 61.4lm/w
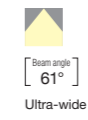✽At 5000K

Power consumption
27.5W [100-242V]

Sold separately
Dedicated separate power supply unit

Fit/Fit Plus NEW
FX-433N
Weight: 1.1kg (including body)
Dimensions H: 40 L: 257
Wireless module included
Dimming rate: 1–100%

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(100) ● 1400TYPE

V Free 100-242 | Wireless Tunable White Fit/Fit+ | Glare Cut 35° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours
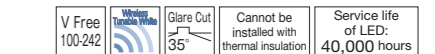
LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced
Lens/honeycomb accessories are not available

Beam angle 61° Ultra-wide

6500K-2700K CRI85

ERD8478W (white)
ERD8478B (black)
Rated luminous flux 1068lm
14.8w 72.1lm/w
✽At 5000K

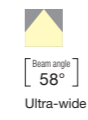Power consumption
14.8W [100-242V]

Sold separately
Dedicated separate power supply unit

Fit/Fit Plus NEW
FX-432N
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%
✽ Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

W (white)   B (black)

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(100) ● 900TYPE

V Free 100-242 | Wireless Tunable White Fit/Fit+ | Glare Cut 35° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced
Lens/honeycomb accessories are not available

Beam angle 58° Ultra-wide

6500K-2700K CRI85

ERD7603W (white)
ERD7603B (black)
Rated luminous flux 757lm
10.1w 74.9lm/w
✽At 5000K

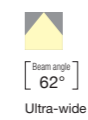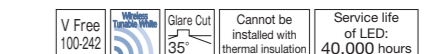Power consumption
10.1W [100-242V]
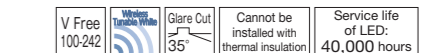
Sold separately
Dedicated separate power supply unit

Fit/Fit Plus NEW
FX-432N
Weight: 0.8kg (including body)
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%
✽ Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

W (white)   B (black)

---

(75) ● 900TYPE

V Free 100-242 | Wireless Tunable White Fit/Fit+ | Glare Cut 35° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced
Lens/honeycomb accessories are not available

Beam angle 62° Ultra-wide

6500K-2700K CRI85

ERD7608W (white)
ERD7608B (black)
Rated luminous flux 697lm
10.1w 69.0lm/w
✽At 5000K

Power consumption
10.1W [100-242V]

Sold separately
Dedicated separate power supply unit

Fit/Fit Plus NEW
FX-432N
Weight: 0.6kg (including body)
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%
✽ Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

W (white)   B (black)

Tunable LEDZ

Tunable Glare-less Adjustable Downlight

Fit / Fit Plus Wireless Tunable White

For Beautiful Night-time Scenery

Since the fixture hides the actual lamp, high-quality interiors can be designed without the lamp entering the field of view.
Reflections on window glass are minimized, adding to the beauty of evening and night-time views.

Glare-less mirrored cone
Nighttime scenery looks even more appealing thanks to the reduction of glare on the window glass.

General-purpose mirrored cone (silver)
Glare readily appears on the window glass.

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125 3000TYPE

| V Free 100-242 | Wireless Tunable White | Glare Cut 40° | 30° | 355° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours | Patented |

LED module included
Frame: Die-cast aluminum (matt white)
Cone: Aluminum (mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW
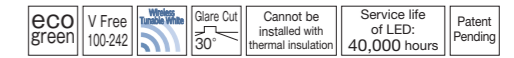
| 6500K-2700K | CRI85 |

[Beam angle 26°] Medium
ERD7604W
Rated luminous flux 1641lm
27.5w 59.6lm/w
＊At 5000K

[Beam angle 36°] Wide
ERD7605W
Rated luminous flux 2053lm
27.5w 74.6lm/w
＊At 5000K

Power consumption
27.5W [100-242V]

Sold separately
Dedicated separate power supply unit
FX-433N NEW
Weight: 1.3kg (including body)
Dimensions H: 40 L: 257
Wireless module included
Dimming rate: 1~100%

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100 1400TYPE

| V Free 100-242 | Wireless Tunable White | Glare Cut 40° | 30° | 355° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours | Patent Pending |

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white) **NEW** B (black)

| 6500K-2700K | CRI85 |

[Beam angle 28°] Medium
ERD8476W (white)
ERD8476B (black)

[Beam angle 38°] Wide
ERD8477W (white)
ERD8477B (black)
Rated luminous flux 1017lm
14.8w 68.7lm/w
＊At 5000K

Power consumption
14.8W [100-242V]

Sold separately
Dedicated separate power supply unit
FX-432N NEW
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1~100%
＊ Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

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100 900TYPE

| V Free 100-242 | Wireless Tunable White | Glare Cut 40° | 30° | 355° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours | Patented |

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white) **NEW** B (black)

| 6500K-2700K | CRI85 |

[Beam angle 24°] Medium
ERD7606W (white)
ERD7606B (black)
Rated luminous flux 689lm
10.1w 68.2lm/w
＊At 5000K

[Beam angle 34°] Wide
ERD7607W (white)
ERD7607B (black)
Rated luminous flux 768lm
10.1w 76.0lm/w
＊At 5000K

Power consumption
10.1W [100-242V]

Sold separately
Dedicated separate power supply unit
FX-432N NEW
Weight: 0.9kg (including body)
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1~100%
＊ Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

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75 900TYPE

| V Free 100-242 | Wireless Tunable White | Glare Cut 40° | 30° | 355° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours | Patented |

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white) **NEW** B (black)

| 6500K-2700K | CRI85 |

[Beam angle 27°] Medium
ERD7609W (white)
ERD7609B (black)
Rated luminous flux 464lm
10.1w 45.9lm/w
＊At 5000K

[Beam angle 34°] Wide
ERD7610W (white)
ERD7610B (black)
Rated luminous flux 605lm
10.1w 59.9lm/w
＊At 5000K

Power consumption
10.1W [100-242V]

Sold separately
Dedicated separate power supply unit
FX-432N NEW
Weight: 0.7kg (including body)
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1~100%
＊ Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

Tunable LEDZ

Tunable Fixed Downlight

Fit / Fit Plus Wireless Tunable White

Our varied line of differing sizes and brightness levels meets the needs of small spaces and larger facilities alike.

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200 9000TYPE

| eco green | V Free 100-242 | Wireless Tunable White | Glare Cut 30° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours | Patent Pending |

LED module included
Frame: Die-cast aluminum (matt white)
Cone: Aluminum (matt mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW

[Beam angle 74°] Diffusion type

| 6500K-2700K | CRI85 |

ERD7583W
Rated luminous flux 10401lm
102.4w 101.5lm/w
＊At 5000K

Power consumption
102.4W [100-242V]

Sold separately
Dedicated separate power supply unit
FX-436N NEW
Weight: 2.6kg (including body)
Dimensions H: 43 L: 270
Wireless module included
Dimming rate: 1~100%

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200 9000TYPE

| eco green | V Free 100-242 | Wireless Tunable White | Glare Cut 20° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours | Patent Pending |

LED module included
Frame: Die-cast aluminum (matt white)
Cone: Aluminum (matt white)
Driver sold separately
Cannot be installed with thermal insulation
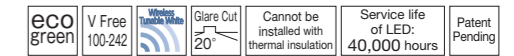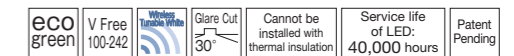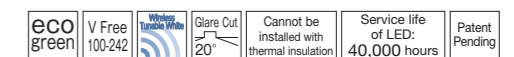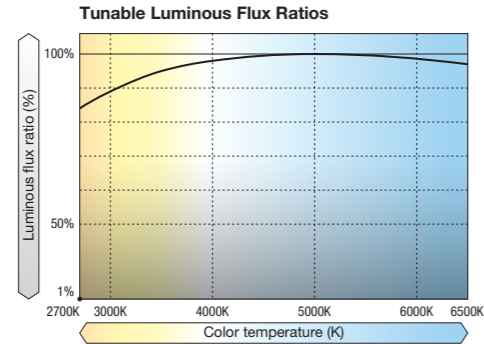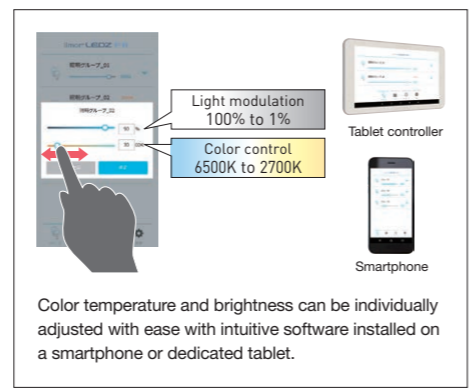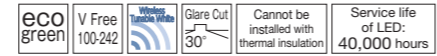LED module cannot be replaced

NEW

[Beam angle 91°] Diffusion type

| 6500K-2700K | CRI85 |

ERD7584W
Rated luminous flux 10634lm
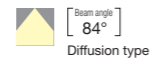102.4w 103.8lm/w
＊At 5000K

Power consumption
102.4W [100-242V]

Sold separately
Dedicated separate power supply unit
FX-436N NEW
Weight: 2.5kg (including body)
Dimensions H: 43 L: 270
Wireless module included
Dimming rate: 1~100%

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200 7500TYPE

| eco green | V Free 100-242 | Wireless Tunable White | Glare Cut 30° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours | Patent Pending |

LED module included
Frame: Die-cast aluminum (matt white)
Cone: Aluminum (matt mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW

[Beam angle 74°] Diffusion type

| 6500K-2700K | CRI85 |

ERD7585W
Rated luminous flux 7587lm
78.1w 97.1lm/w
＊At 5000K

Power consumption
78.1W [100-242V]

Sold separately
Dedicated separate power supply unit
FX-435N NEW
Weight: 1.9kg (including body)
Dimensions H: 43 L: 270
Wireless module included
Dimming rate: 1~100%

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200 7500TYPE

| eco green | V Free 100-242 | Wireless Tunable White | Glare Cut 20° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours | Patent Pending |

LED module included
Frame: Die-cast aluminum (matt white)
Cone: Aluminum (matt white)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW

[Beam angle 92°] Diffusion type

| 6500K-2700K | CRI85 |

ERD7586W
Rated luminous flux 7760lm
78.1w 99.3lm/w
＊At 5000K

Power consumption
78.1W [100-242V]

Sold separately
Dedicated separate power supply unit
FX-435N NEW
Weight: 1.9kg (including body)
Dimensions H: 43 L: 270
Wireless module included
Dimming rate: 1~100%

Tunable Luminous Flux Ratios

Luminous flux ratio (%)

100%

50%

1%

2700K 3000K   4000K   5000K   6000K 6500K

Color temperature (K)

Notes:
- At a color temperature of 5000K, the change in luminous flux due to tuning is indexed as 100%.
- The ratio curve depicted above represents typical values. Some variation occurs depending on the fixtures used and the dimming level setting.
- Due to the characteristics of LEDs, variations in light color may increase at dimming rates of 10% or less.

Light modulation 100% to 1%

Color control 6500K to 2700K

Tablet controller

Smartphone

Color temperature and brightness can be individually adjusted with ease with intuitive software installed on a smartphone or dedicated tablet.

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125 · 4000TYPE

| eco green | V Free 100-242 | Wireless Tunable White | Glare Cut 30° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours |

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (matt mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white)   NEW B (black)

Beam angle 77°
Diffusion type

6500K-2700K   CRI85

ERD7587W (white)
ERD7587B (black)

Power consumption
36.7W [100-242V]

Rated luminous flux 3595lm
36.7W 97.9lm/W
* At 5000K

Sold separately
Dedicated separate power supply unit

Fit / Fit PLUS NEW
FX-434N

Weight: 1.3kg (including body)
Dimensions H: 40 L: 257
Wireless module included
Dimming rate: 1–100%

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125 · 4000TYPE

| eco green | V Free 100-242 | Wireless Tunable White | Glare Cut 20° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours |

LED module included
Frame: Die-cast aluminum (matt white)
Cone: Aluminum (matt white)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW

Beam angle 84°
Diffusion type

6500K-2700K   CRI85

ERD7588W

Power consumption
36.7W [100-242V]

Rated luminous flux 3687lm
36.7W 100.4lm/W
* At 5000K

Sold separately
Dedicated separate power supply unit

Fit / Fit PLUS NEW
FX-434N

Weight: 1.3kg (including body)
Dimensions H: 40 L: 257
Wireless module included
Dimming rate: 1–100%

---

100 · 3000TYPE

| eco green | V Free 100-242 | Wireless Tunable White | Glare Cut 30° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours |

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (matt mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white)   NEW B (black)

Beam angle 70°
Diffusion type
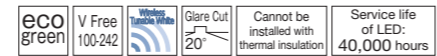
6500K-2700K   CRI85

ERD7589W (white)
ERD7589B (black)

Power consumption
27.5W [100-242V]

Rated luminous flux 2693lm
27.5W 97.9lm/W
* At 5000K

Sold separately
Dedicated separate power supply unit

Fit / Fit PLUS NEW
FX-433N

Weight: 1.1kg (including body)
Dimensions H: 40 L: 257
Wireless module included
Dimming rate: 1–100%

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100 · 3000TYPE

| eco green | V Free 100-242 | Wireless Tunable White | Glare Cut 15° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours |

LED module included
Frame: Die-cast aluminum (matt white)
Cone: Aluminum (matt white)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW

Beam angle 80°
Diffusion type
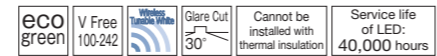
6500K-2700K   CRI85

ERD7590W

Power consumption
27.5W [100-242V]

Rated luminous flux 2973lm
27.5W 108.1lm/W
* At 5000K

Sold separately
Dedicated separate power supply unit

Fit / Fit PLUS NEW
FX-433N

Weight: 1.1kg (including body)
Dimensions H: 40 L: 257
Wireless module included
Dimming rate: 1–100%

Tunable LEDZ

Fit / Fit PLUS Wireless Tunable White

Tunable Fixed Downlight (CORE75)

A wide product line of compact fixtures (75-mm dia.)

Tunable Fixed Downlight

75 · 1400TYPE

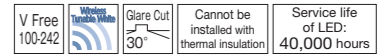| V Free 100-242 | Wireless Tunable White | Glare Cut 30° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours |

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Driver sold separately
Cannot be installed with thermal insulation
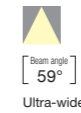LED module cannot be replaced

NEW W (white)   NEW B (black)
Cone: Aluminum (mirror matt finish)

Beam angle 60°
Ultra-wide
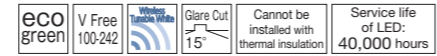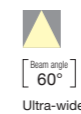
6500K-2700K   CRI85

ERD8468W (white)
ERD8468B (black)

Power consumption
14.8W [100-242V]

Rated luminous flux 1336lm
14.8W 90.2lm/W
* At 5000K

Sold separately
Dedicated separate power supply unit

Fit / Fit PLUS NEW
FX-432N

Weight: 0.9kg (including body)
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%

* Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

NEW W (white)   NEW B (black)
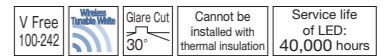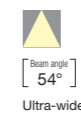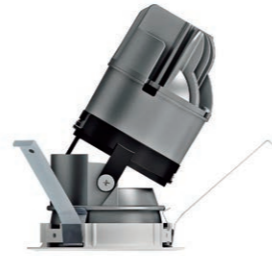Cone: Aluminum (W: matt white / B: black)

Beam angle 59°
Ultra-wide

6500K-2700K   CRI85

ERD8469W (white)

Power consumption
14.8W [100-242V]

Rated luminous flux 1271lm
14.8W 85.8lm/W
* At 5000K

ERD8469B (black)

Rated luminous flux 1130lm
14.8W 76.3lm/W
* At 5000K

Tunable Fixed Downlight

75 · 900TYPE

| V Free 100-242 | Wireless Tunable White | Glare Cut 30° | Cannot be installed with thermal insulation | Service life of LED: 40,000 hours |

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white)   NEW B (black)
Cone: Aluminum (mirror matt finish)

Beam angle 55°
Ultra-wide
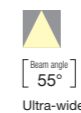
6500K-2700K   CRI85

ERD7591W (white)
ERD7591B (black)

Power consumption
10.1W [100-242V]

Rated luminous flux 731lm
10.1W 72.3lm/W
* At 5000K

Sold separately
Dedicated separate power supply unit

Fit / Fit PLUS NEW
FX-432N

Weight: 0.7kg (including body)
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%

* Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

NEW W (white)   NEW B (black)
Cone: Aluminum (W: matt white / B: black)

Beam angle 54°
Ultra-wide

6500K-2700K   CRI85

ERD7592W (white)

Power consumption
10.1W [100-242V]

Rated luminous flux 702lm
10.1W 69.5lm/W
* At 5000K

ERD7592B (black)

Rated luminous flux 633lm
10.1W 62.6lm/W
* At 5000K

Tunable LEDZ

Tunable Adjustable Downlight (CORE75)

Tunable Adjustable Downlight

75 1400TYPE

V Free 100-242	Wireless Tunable White	Glare Cut 30°	35°	360°	Cannot be installed with thermal insulation	Service life of LED: 40,000 hours	Patent Pending

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (matt mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white)　NEW B (black)

6500K-2700K	CRI85

Sold separately
Dedicated separate power supply unit

Fit / Fit Plus NEW
FX-432N
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%
* Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

[Beam angle 28°] Medium
ERD8470W (white)
ERD8470B (black)
Power consumption
14.8W [100-242V]

[Beam angle 41°] Wide
ERD8471W (white)
ERD8471B (black)
Rated luminous flux 1398lm
14.8w 94.4lm/w

[Beam angle 60°] Ultra-wide
ERD8472W (white)
ERD8472B (black)
Rated luminous flux 1336lm
14.8w 90.2lm/w

* All of the above are at 5000K.

Tunable Adjustable Downlight

75 1400TYPE

V Free 100-242	Wireless Tunable White	Glare Cut 30°	35°	360°	Cannot be installed with thermal insulation	Service life of LED: 40,000 hours	Patent Pending

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (W: matt white / B: black)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white)　NEW B (black)

6500K-2700K	CRI85

Sold separately
Dedicated separate power supply unit

Fit / Fit Plus NEW
FX-432N
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%
* Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

[Beam angle 28°] Medium
ERD8473W (white)
ERD8473B (black)
Power consumption
14.8W [100-242V]

[Beam angle 39°] Wide
ERD8474W (white)
Rated luminous flux 1348lm
14.8w 91.0lm/w
ERD8474B (black)
Rated luminous flux 1261lm
14.8w 85.2lm/w

[Beam angle 59°] Ultra-wide
ERD8475W (white)
Rated luminous flux 1271lm
14.8w 85.8lm/w
ERD8475B (black)
Rated luminous flux 1130lm
14.8w 76.3lm/w

* All of the above are at 5000K.

Tunable Adjustable Downlight

75 900TYPE

V Free 100-242	Wireless Tunable White	Glare Cut 30°	35°	360°	Cannot be installed with thermal insulation	Service life of LED: 40,000 hours	Patent Pending

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (matt mirror finish)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white)　NEW B (black)

6500K-2700K	CRI85

Sold separately
Dedicated separate power supply unit

Fit / Fit Plus NEW
FX-432N
Weight: 0.7kg (including body)
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%
* Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

[Beam angle 16°] Narrow
ERD7596W (white)
ERD7596B (black)
Rated luminous flux 849lm
10.1w 84.0lm/w
Power consumption
10.1W [100-242V]

[Beam angle 34°] Wide
ERD7597W (white)
ERD7597B (black)
Rated luminous flux 879lm
10.1w 87.0lm/w

[Beam angle 55°] Ultra-wide
ERD7598W (white)
ERD7598B (black)
Rated luminous flux 731lm
10.1w 72.3lm/w

* All of the above are at 5000K.

Tunable Adjustable Downlight

75 900TYPE

V Free 100-242	Wireless Tunable White	Glare Cut 30°	35°	360°	Cannot be installed with thermal insulation	Service life of LED: 40,000 hours	Patent Pending

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Aluminum (W: matt white / B: black)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white)　NEW B (black)

6500K-2700K	CRI85

Sold separately
Dedicated separate power supply unit

Fit / Fit Plus NEW
FX-432N
Weight: 0.7kg (including body)
Dimensions H: 38 L: 225
Wireless module included
Dimming rate: 1–100%
* Cannot be installed if there is an obstacle within 150 mm from the ceiling surface.

[Beam angle 16°] Narrow
ERD7599W (white)
Rated luminous flux 843lm
10.1w 83.4lm/w
ERD7599B (black)
Rated luminous flux 806lm
10.1w 79.8lm/w
Power consumption
10.1W [100-242V]

[Beam angle 34°] Wide
ERD7600W (white)
Rated luminous flux 867lm
10.1w 85.8lm/w
ERD7600B (black)
Rated luminous flux 825lm
10.1w 81.6lm/w

[Beam angle 54°] Ultra-wide
ERD7601W (white)
Rated luminous flux 702lm
10.1w 69.5lm/w
ERD7601B (black)
Rated luminous flux 633lm
10.1w 62.6lm/w

* All of the above are at 5000K.

Tunable LEDZ

Tunable Adjustable Downlight

An adjustable downlight that accommodates a variety of Tunable White bulbs for applications ranging from spacious interiors to pinpoint product presentations

Precise Tunable White lighting that emphasizes zones or products

Thanks to our pinpoint Tunable White bulbs, this fixture is ideal for emphasizing individual objects. By illuminating an object with a slightly higher color temperature than is used in the surrounding area, the target becomes more prominent, increasing its visibility from a distance. This fixture is recommended for temporary situations, such as events and sales promotions.

Without Tunable White bulbs: 3500K everywhere

With Tunable White bulbs: The visual presentation alone is 4000K.

100 3000TYPE

V Free 100-242	Wireless Tunable White	40°	355°	Cannot be installed with thermal insulation	Service life of LED: 40,000 hours	Patented

LED module included
Frame: Die-cast aluminum (W: matt white / B: matt black)
Cone: Die-cast aluminum (W: matt white / B: matt black)
Driver sold separately
Cannot be installed with thermal insulation
LED module cannot be replaced

NEW W (white)　NEW B (black)

6500K-2700K	CRI85

Sold separately
Dedicated separate power supply unit

Fit / Fit Plus NEW
FX-433N
Weight: 1.1kg (including body)
Dimensions H: 40 L: 257
Wireless module included
Dimming rate: 1–100%

[Beam angle 20°] Medium
ERD7593W (white)
ERD7593B (black)
Rated luminous flux 2879lm
27.5w 104.6lm/w
Power consumption
27.5W [100-242V]

[Beam angle 29°] Wide
ERD7594W (white)
ERD7594B (black)
Rated luminous flux 2924lm
27.5w 106.3lm/w

[Beam angle 74°] Ultra-wide
ERD7595W (white)
ERD7595B (black)
Rated luminous flux 2356lm
27.5w 85.6lm/w

Tunable LEDZ

Fit/Fit Plus Wireless Tunable White **Linear 32**

A line of Tunable White lighting units for a wide range of uses such as indirect lighting and fixed lighting

Indirect lighting recreates the sky by creating a sense of time and seasonality.

Indirect lighting on and near the ceiling is always easily visible and is a technique that emphasizes the effects of Tunable White lighting. By changing the color temperature over time according to changes in the ambient light, it is possible to obtain a stunning effect resembling the natural light of the sky. This provides customers with a relaxed sense of openness that follows the time of day.

Morning scene: 5000K
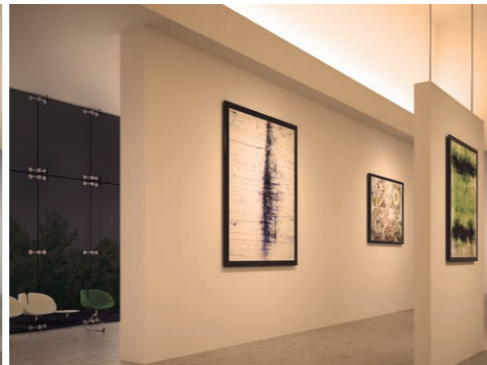
Evening scene: 2700K

L : 1200type	4000		
2842lm		Tunable	

eco green	Indoor	V Free 100–242	Integrated Driver	Service life of LED: 40,000 hours	CRI 82	Patent Pending
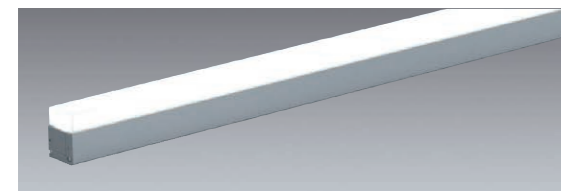
Body: Aluminum (alumite finish)
LED module unit sold separately
Input voltage: 100–242 V
Feeding connector sold separately: RK-581N/566N
Wireless module included

Mounting hole
Hole for power supply
(L)
32
43
Flood

Unit model number / Rated luminous flux / Specific energy consumption efficiency

Tunable White lighting	Light distribution	Type Fixture length (L) Model number	6500K-2700K CRI82		
Fit Fit Plus Wireless Tunable White	Beam angle 139° × 110° Diffusion type	L : 1500TYPE (L : 1500mm) ERK9864S	Unit [NEW] FAD-814X 3551lm 135.5lm/W		
			Power consumption 26.2W Weight: 1.2kg	Dimming rate: 1–100%	
		L : 1200TYPE (L : 1200mm) ERK9708S	Unit [NEW] FAD-815X 2842lm 135.9lm/W		
			Power consumption 20.7W Weight: 0.9kg	Dimming rate: 1–100%	
		L : 900TYPE (L : 900mm) ERK9709S	Unit [NEW] FAD-816X 2080lm 134.1lm/W		
			Power consumption 15.5W Weight: 0.8kg	Dimming rate: 1–100%	
		L : 600TYPE (L : 600mm) ERK9710S	Unit [NEW] FAD-817X 1447lm 130.3lm/W		
			Power consumption 11.1W Weight: 0.6kg	Dimming rate: 1–100%	

OPTION

Power supply connector (Lead wire type)
RK-581N L1000 300V / 3.0A
RK-566N L200 300V / 3.0A

In-line connection cord
RK-559N L200mm 300V / 3.0A
RK-560N L400mm 300V / 3.0A

Movable bracket
RB-485S (2 pieces 1 set) Stainless
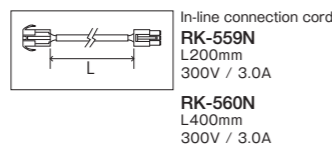
Tunable LEDZ

Linear 32 PWM Type

The Tunable White model controls color and brightness.
The Comfort Tunable White model changes the color automatically in conjunction with a Tunable White bulb.

Tunable White **Flexible control of color and brightness is ideal for creating atmosphere.**

By adjusting the color temperature in response to the natural exterior light and modifying the brightness according to the color temperature, you can create a comfortable lighting environment. In addition, the color temperature and illuminance can be increased in the morning and reduced in the evening. As a result, you can follow the rhythm of the day to suit the purpose of the space.
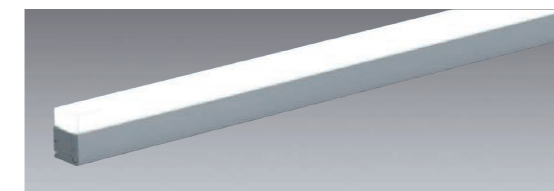
Comfort Tunable **Automatic change of color when used with Tunable White bulbs**

The color temperature changes automatically from 3000K to 2000K when used with Tunable White bulbs. This produces a natural, warm and relaxing atmosphere similar to that created by an incandescent lamp.

Example of brightness (illuminance) and color temperature settings changing with the time of day

Correlation between dimming rate and brightness / color temperature
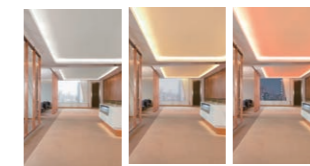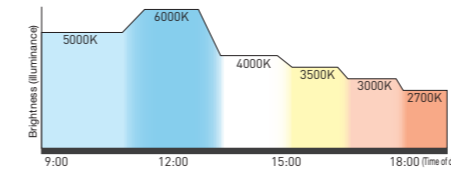
Correlation between color temperature and dimming rate / brightness
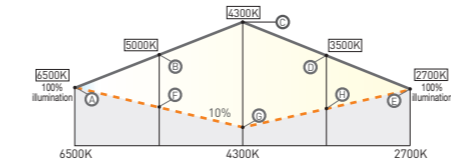
		At 100% illumination (Maximum)	At minimum illumination (Minimum)
6500K	Ⓐ	1602lm	-
5000K	Ⓑ	2206lm	Ⓕ 250lm
4300K	Ⓒ	2807lm	Ⓖ 188lm
3500K	Ⓓ	2102lm	Ⓗ 240lm
2700K	Ⓔ	1368lm	-

Note: With RAD-855X

L : 1500type	4000		L : 1200type	4000	
2807lm		Tunable	2532lm		Comfort Tunable
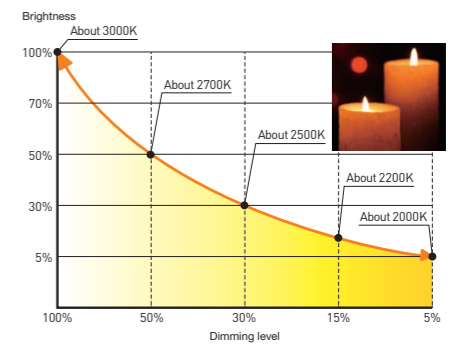
Indoor	V Free 100–242	Integrated Driver	PWM	Service life of LED: 40,000 hours	CRI 82	Patent Pending

Body: Aluminum (alumite finish)
LED module unit sold separately
Input voltage: 100–242 V
Feeding connector sold separately: RK-581N/566N

Unit model number / Rated luminous flux / Specific energy consumption efficiency

Tunable White lighting	Light distribution	Type Fixture length (L) Model number	Unit model number / Rated luminous flux / Specific energy consumption efficiency		
Tunable White (PWM Dimming)	Beam angle 139° × 110° Diffusion type	L : 1500TYPE (L : 1500mm) ERK9864S	6500K-2700K CRI82		
			Unit [NEW] RAD-855X 2807lm 121.5lm/W⑨		
			Power consumption 23.1W Weight: 1.6kg	Dimming rate: 5–100%	
		L : 750TYPE (L : 750mm) ERK9865S	6500K-2700K CRI82		
			Unit [NEW] RAD-856X 1533lm 99.5lm/W		
			Power consumption 15.4W Weight: 0.9kg	Dimming rate: 5–100%	
Comfort Tunable White (PWM Dimming)	Beam angle 139° × 110° Diffusion type	L : 1200TYPE (L : 1200mm) ERK9708S	3000K-2000K CRI82		
			Unit RAD-697XA 2532lm 132.5lm/W⑨		
			Power consumption 19.1W Weight: 0.9kg	Dimming rate: 5–100%	
		L : 900TYPE (L : 900mm) ERK9709S	3000K-2000K CRI82		
			Unit RAD-698XA 2265lm 133.2lm/W⑨		
			Power consumption 17.0W Weight: 0.9kg	Dimming rate: 5–100%	
		L : 600TYPE (L : 600mm) ERK9710S	3000K-2000K CRI82		
			Unit RAD-699XA 1451lm 126.1lm/W⑨		
			Power consumption 11.5W Weight: 0.6kg	Dimming rate: 5–100%	

OPTION

Power supply connector (Lead wire type)
RK-581N L1000 300V / 3.0A
RK-566N L200 300V / 3.0A

In-line connection cord
RK-559N L200mm 300V / 3.0A
RK-560N L400mm 300V / 3.0A

Movable bracket
RB-485S (2 pieces 1 set) Stainless
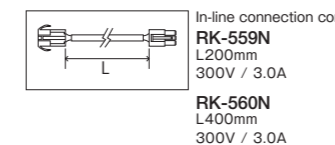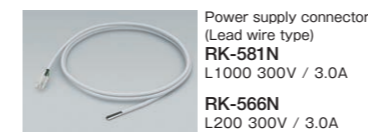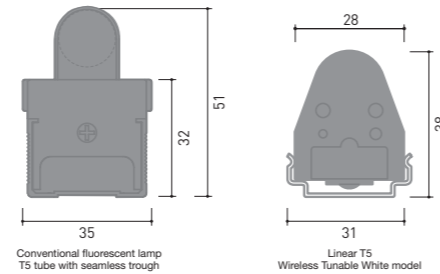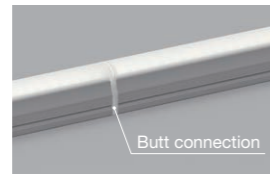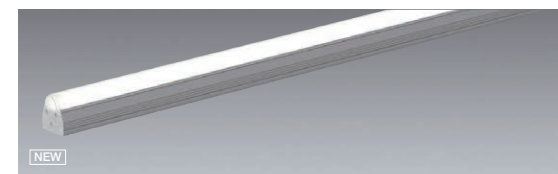
Tunable LEDZ

Linear T5

Slimmer than a conventional fluorescent light fixture with a T5 tube.
Seamless lighting that is easy to use for both indirect lighting and fixture lighting.

A compact fixture providing beautiful indirect light that does not create shadows

Thanks to the use of butt connections, the light emitted through the side cover provides beautiful, shadow-free indirect illumination. The built-in power supply avoids the need for power supply installation space. As a result, the fixture provides beautiful indirect light even when used in the confined spaces of furniture and built-ins.

Butt connection

Conventional fluorescent lamp
T5 tube with seamless trough

Linear T5
Wireless Tunable White model

| Indoor | V Free 100-242 | Integrated Driver | Wireless Tunable White | Service life of LED: 40,000 hours | CRI82 |

L:1200type 2000 Tunable
1525lm

Body: Aluminum (alumite finish) and polycarbonate (milky white)
Mounting clips included
Input voltage: 100–242V
Wireless module included
LED module cannot be replaced
Feeding connector sold separately: RK-581N/566N

NEW

Model number / Rated luminous flux / Specific energy consumption efficiency

| 6500K-2700K | CRI82 |

Tunable White lighting — Light distribution — Type Fixture length (L)

Fit / Fit Plus Wireless Tunable White

Beam angle 139°×110°
Diffusion type

L:1200TYPE (L:1200mm)

EFX9679N 1525lm 132.6lm/w ⑨

Power consumption 11.5W   Weight: 0.7kg   Dimming rate: 1–100%

L:900TYPE (L:900mm)

EFX9680N 1206lm 124.3lm/w ⑨

Power consumption 9.7W   Weight: 0.5kg   Dimming rate: 1–100%

L:600TYPE (L:600mm)

EFX9681N 776lm 115.8lm/w

Power consumption 6.7W   Weight: 0.4kg   Dimming rate: 1–100%

OPTION

Power supply connector
(Lead wire type)
RK-581N
L1000 300V / 3.0A

RK-566N
L200 300V / 3.0A

In-line connection cord
RK-559N
L200mm
300V / 3.0A

RK-560N
L400mm
300V / 3.0A

Tunable LEDZ

High-powered Flexible Tape Light (for indoor and outdoor use)

A compact, high-powered, all-purpose tape light for indoor and outdoor use.
Can be ordered in lengths of 30-mm increments.

Highly waterproof construction resistant to a wide range of temperatures. Safe for use both indoors and outdoors.

With an IP65 enclosure rating, this waterproof design can withstand moisture and rain. Thanks to its robust structure, it can be used outdoors even in cold environments or in sunlight in high temperatures.

Notes
• Mount in a well-drained location.
• The service life of the light source is compliant with JIS C8155:2010/Luminous flux maintenance rate: 70% minimum

+40℃ Designed for outdoor use in high-temperature regions.

-20℃ Designed for cold regions.

L:1000type 2000 Tunable
500lm

| Indoor/outdoor | | Separate power supply | Service life of LED: 40,000 hours | IP65 enclosure rating | 80 |
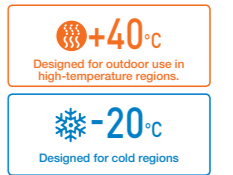
Body: Resin (transparent)
Input voltage: 24 VDC
Driver sold separately
Power connection cable included
End cap included
LED module cannot be replaced
Moistureproof and rainproof
Select a suitable power supply unit accordingly on the fixture length to be connected

NEW

Model number

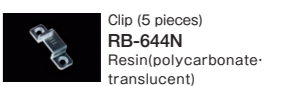| Tunable White lighting	Light distribution	Type	Fixture length (L)	6500K-2700K CRI80	Rated luminous flux (5000K)	Power consumption	Specific energy consumption efficiency	Module length	Module power	Weight
Fit / Fit Plus Wireless Tunable White	Beam angle 114°×116° Diffusion type	L:10000TYPE	10012mm	ERX19990DL	4227lm	48.1W	87.8lm/w	9990mm	40.9W	1.0kg
		L:5000TYPE	5002mm	ERX14980DL	2217lm	26.5W	83.6lm/w	4980mm	21.7W	0.5kg
		L:3000TYPE	2992mm	ERX12970DL	1352lm	18.1W	74.6lm/w	2970mm	13.2W	0.3kg
		L:2000TYPE	2002mm	ERX11980DL	913lm	13.6W	67.1lm/w	1980mm	9.0W	0.2kg
		L:1500TYPE	1492mm	ERX11470DL	684lm	11.0W	62.1lm/w	1470mm	6.7W	
		L:1250TYPE	1252mm	ERX11230DL	575lm	9.7W	59.2lm/w	1230mm	5.7W	
		L:1000TYPE	1012mm	ERX10990DL	466lm	8.3W	56.1lm/w	990mm	4.6W	
		L:750TYPE	742mm	ERX10720DL	344lm	6.5W	52.9lm/w	720mm	3.4W	0.1kg
		L:500TYPE	502mm	ERX10480DL	234lm	4.9W	47.7lm/w	480mm	2.3W	
		L:300TYPE	322mm	ERX10300DL	151lm	3.5W	43.1lm/w	300mm	1.5W	

Number of separate connected power supply units (sold separately)

Dedicated separate power supply unit	Tunable White lighting	Fit Color tuning driver circuit	Dimming rate	Power supply size	Power input	Rated output	Primary side	Secondary side	Maximum number of connected units		Module power minimum	Total wiring length
									Maximum module power			
									Total when connected in series	Total when connected in parallel		
RX-406N	Tunable White lighting (Wireless Tunable White)	**NEW** FX-437N	1–100%	L200×H49×W63	100–200 VAC	24 VDC 2.5A 60W	Lead Wire L: 140 mm	Lead Wire L: 140 mm	42W	48W	3W	4 m max.
RX-405N	Tunable White lighting (Wireless Tunable White)	**NEW** FX-437N	1–100%	L219×H49×W63	100–200 VAC	24 VDC 3.75A 90W	Lead Wire L: 140 mm	Lead Wire L: 140 mm	42W	72W	5W	4 m max.
RX-404N	Tunable White lighting (Wireless Tunable White)	**NEW** FX-437N	1–100%	L239×H49×W63	100–200 VAC	24 VDC 6.25A 150W	Lead Wire L: 140 mm	Lead Wire L: 140 mm	42W	120W	7W	4 m max.

Notes • For details on the maximum cable length on the secondary side of the power supply, refer to the specification drawings.
• Total wiring length excludes connectors.   • When installing this unit outdoors, perform waterproofing treatment on the fixture as indicated in the instruction manual.

Built-in wireless module

AC   DC24V driver

NEW FX-437N DC24V Tunable driver

Controller (Smartphone/Tablet)

OPTION

Bracket (5 pieces)
RB-643N
Resin(polycarbonate-translucent)

Clip (5 pieces)
RB-644N
Resin(polycarbonate-translucent)
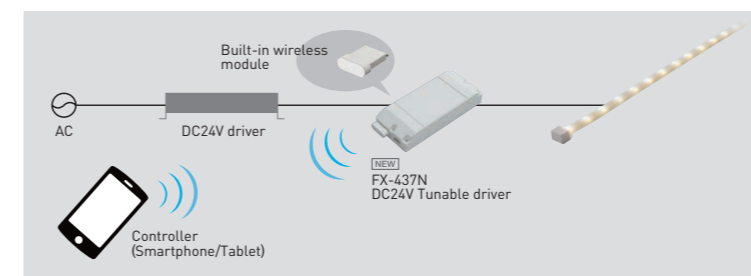
NEW
DC24V Tunable driver
FX-437N
Input:DC24V
Output current:6.25A
Maximum connection power capacity: 150W
Weight: 0.1 kg

Tunable LEDZ

Tunable Linear Light
## Tunable White Linear 50/Linear 32

Flexible control of color and brightness is ideal for creating atmosphere.

By adjusting the color temperature in response to the natural exterior light and modifying the brightness according to the color temperature, you can create a comfortable lighting environment. In addition, the color temperature and illuminance can be increased in the morning and reduced in the evening. As a result, you can follow the rhythm of the day to suit the purpose of the space.

Example of brightness (illuminance) and color temperature settings changing with the time of day
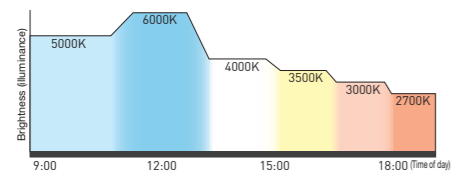
Tunable Luminous Flux Ratios
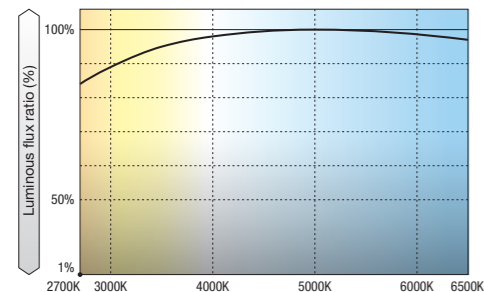
Notes:
・At a color temperature of 5000K, the change in luminous flux due to tuning is indexed as 100%.
・The ratio curve depicted above represents typical values. Some variation occurs depending on the fixtures used and the dimming level setting.
・Due to the characteristics of LEDs, variations in light color may increase at dimming rates of 10% or less.

■ Surface-mounted/Pendant type ▶p. 37

Lighting system with 3-way connections

This flexible lighting system adopts the unit method. Choose either upper and lower light distribution or lower light distribution alone. It can be used as a 3-way fixture configured as a surface-mounted or pendant installation.

Creating healthy office spaces with Tunable White lighting

The lighting environment in the office, where we spend much of our day, can have a huge impact on our health. Tunable White lighting helps to reduce the contrast between indoor lighting and natural outdoor light, which contributes to the maintenance of healthy biorhythms. This promotes good sleep and helps to create environments that support the health of office workers.

Certification to the WELL Building Standard

WELL certification is a building certification system. Operated by the International WELL Building Institute (IWBI) of the U.S.A., it is intended to evaluate healthy and productive spaces. It consists of a list of evaluation items based on eight concepts: air, water, nourishment, light, fitness, comfort, mind, and innovation. Under the category of lighting, "circadian lighting design" and "electric light glare control" are essential factors in the certification matrix.
As seen in this example, initiatives to design environments focused on the health of workers are accelerating worldwide.
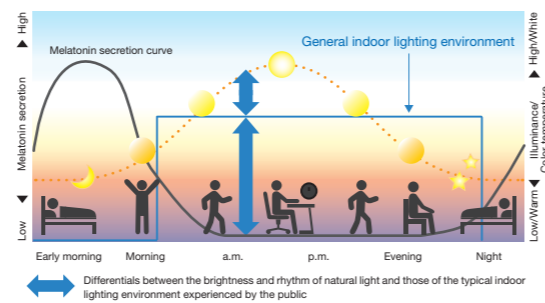
In contemporary indoor lighting environments in which the color temperature and brightness levels remain constant, a measureable difference arises between natural ambient light and indoor lighting as time passes. This is believed to affect the secretion of melatonin. When melatonin production is suppressed, some people have difficulty sleeping. By closely reproducing the natural rhythm of light with Tunable White light-quality LEDs, one can increase or decrease the secretion of melatonin, thereby contributing to a setting conducive to either a more alert or more relaxed state of mind.

6500K 5000K 3500K 2700K

Differentials between the brightness and rhythm of natural light and those of the typical indoor lighting environment experienced by the public

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Tunable Linear Light | Integrated Driver

Linear 50 — L:1200 TYPE
Tunable White lighting Unit: 6500K-2700K
NEW FAD-854X Power consumption 45.6W (100-242V)

Surface mounted | Surface-mounted type W50×H56×L1250
eco green / V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK9940W (Fixture)
Rated luminous flux / Specific energy consumption efficiency
6337 lm 138.9 lm/W
Weight: 1.6kg

Recessed | Recessed type Cut out size (for a single unit) 65×1260
eco green / V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK9944W (Body: Single unit)
ERK9945W (Body: Connection unit)
ERK9946W (Body: End unit)
Rated luminous flux / Specific energy consumption efficiency
6276 lm 137.6 lm/W
Weight: 1.9kg

Surface mounted | Bracket type (up and down light distribution) W60×H80×L1257
NEW
V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK9995W (Body: For single/conecting use)
Rated luminous flux / Specific energy consumption efficiency
3902 lm 85.5 lm/W
Weight: 3.4kg

Linear 50 — L:1200 TYPE
Tunable White lighting Unit: 6500K-2700K
NEW FAD-854X Power consumption 45.6W (100-242V)

Recessed | Slit type Cut out size (for a single unit) 65×1260
V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK1007W (Body: Single unit)
ERK1008W (Body: Connection unit)
ERK1009W (Body: End unit)
Rated luminous flux / Specific energy consumption efficiency
5208 lm 114.2 lm/W
Weight: 2.7kg

Recessed | Recessed open type Cut out size (for a single unit) 85×1260
V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK1015W (Body: Single unit)
ERK1016W (Body: Connection unit)
ERK1017W (Body: End unit)
Rated luminous flux / Specific energy consumption efficiency
4981 lm 109.2 lm/W
Weight: 2.1kg

Recessed | Recessed open deep type Cut out size (for a single unit) 110×1260
V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK1031W (Body: Single unit)
ERK1032W (Body: Connection unit)
ERK1033W (Body: End unit)
Rated luminous flux / Specific energy consumption efficiency
4436 lm 97.2 lm/W
Weight: 2.3kg

Linear 50 — L:1200 TYPE
Tunable White lighting Unit: 6500K-2700K
NEW FAD-854X Power consumption 45.6W (100-242V)

Surface mounted | Pendant type W58×H65×L1504
V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK9947W (Body: Single unit)
ERK9948W (Body: Connection unit)
ERK9949W (Body: End unit)
Rated luminous flux / Specific energy consumption efficiency
5224 lm 114.5 lm/W
Weight: 2.6kg

Surface mounted | Surface mounted slit type W58×H65×L1504
V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK9947W (Body: Single unit)
ERK9948W (Body: Connection unit)
ERK9949W (Body: End unit)
Rated luminous flux / Specific energy consumption efficiency
5224 lm 114.5 lm/W
Weight: 2.6kg

Surface mounted | Surface-mounted type W70×H105×L1255
NEW
V Free 100-242 / Service life of LED: 40,000 hours / Patent Pending / CRI 82
ERK9992W (Body: For single/conecting use)
Rated luminous flux / Specific energy consumption efficiency
5366 lm 117.6 lm/W
Weight: 4.4kg

OPTION (Only for Pendant type)

Recessed type
Suspension bracket
RK-541W Matt white ・Wire
Suspension bracket (Power supply parts included)
RK-592W Wiring cord included Matt white ・Wire
(100)

In-line connection cord
RK-559N L200mm 300V / 3.0A
RK-560N L400mm 300V / 3.0A

Linear 32 / Linear 50

L:1200 TYPE
Linear 32, upper light distribution unit (L:900TYPE)
Linear 50, lower light distribution unit (L:1200TYPE)

| Tunable White lighting | Unit 6500K-2700K |

Light distribution

NEW Upper light distribution unit
FAD-816X
Power consumption **15.5W** (100-242V)

NEW Lower light distribution unit
FAD-854X
Power consumption **45.6W** (100-242V)

Lower light distribution only

NEW Lower light distribution unit
FAD-854X
Power consumption **45.6W** (100-242V)

Surface mounted Pendant type
W70×H105×L1255
NEW

V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK9992W (Fixture: For use as single unit or linked unit)

Rated luminous flux / Specific energy consumption efficiency

When the units are combining
7128 lm 114.7 lm/W
Power consumption 61.1W
Weight: 4.9kg

5366 lm 117.6 lm/W
Weight: 4.4kg

OPTION

Recessed type
Suspension bracket
RK-541W
Matt white · Wire

Suspension bracket (Power supply parts included)
RK-592W
Wiring cord included
Matt white · Wire

(100)

In-line connection cord
RK-559N L200mm 300V / 3.0A
RK-560N L400mm 300V / 3.0A

Linear 32

L:1200 TYPE
Linear 32, upper light distribution unit (L:900TYPE)
Linear 32, lower light distribution unit (L:1200TYPE)

| Tunable White lighting | Light distribution | Unit 6500K-2700K |

Upper light distribution

NEW Upper light distribution unit
FAD-816X
Power consumption **15.5W** (100-242V)

NEW Lower light distribution unit
FAD-815X
Power consumption **20.7W** (100-242V)

Lower light distribution only

NEW Lower light distribution unit
FAD-815X
Power consumption **20.7W** (100-242V)

Surface mounted Pendant type
W55×H105×L1204
NEW

V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK9993W (Body: For single/conecting use)

Rated luminous flux / Specific energy consumption efficiency

When the units are combining
4813 lm 132.9 lm/W
Power consumption 36.2W
Weight: 4.4kg

2407 lm 116.2 lm/W
Weight: 3.2kg

Linear 32

L:1200 TYPE

| Tunable White lighting | Unit 6500K-2700K |

NEW **FAD-815X**
Power consumption **20.7W** (100-242V)

Surface mounted Surface-mounted type
W32×H43×L1200

eco green | V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK9708W (Fixture)

Rated luminous flux / Specific energy consumption efficiency
2814 lm 135.9 lm/W
Weight: 0.9kg

Recessed Recessed type
Cut out size (for a single unit) 45×1210

eco green | V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK9712W (Body: Single unit)
ERK9713W (Body: Connection unit)
ERK9714W (Body: End unit)

Rated luminous flux / Specific energy consumption efficiency
2814 lm 135.9 lm/W
Weight: 1.3kg

Recessed Slit type
Cut out size (for a single unit) 48×1210
NEW

V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK1011W (Body: Single unit)
ERK1012W (Body: Connection unit)
ERK1013W (Body: End unit)

Rated luminous flux / Specific energy consumption efficiency
2336 lm 112.8 lm/W
Weight: 1.8kg

Linear 32

L:600 TYPE

| Tunable White lighting | Unit 6500K-2700K |

NEW **FAD-817X**
Power consumption **11.1W** (100-242V)

Surface mounted Surface-mounted type
W32×H43×L600
NEW

eco green | V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK9710W (Fixture)

Rated luminous flux / Specific energy consumption efficiency
1447 lm 130.3 lm/W
Weight: 0.6kg

Recessed Recessed type
Cut out size (for an end unit) 45×605

eco green | V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK9715W (Body: End unit)

Rated luminous flux / Specific energy consumption efficiency
1433 lm 129.0 lm/W
Weight: 0.8kg

Recessed Slit type
Cut out size (for an end unit) 48×605
NEW

V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK1014W (Body: End unit)

Rated luminous flux / Specific energy consumption efficiency
1189 lm 107.1 lm/W
Weight: 1.1kg

OPTION

Power supply connector (Lead wire type)
RK-581N L1000 300V / 3.0A
RK-566N L200 300V / 3.0A

Linear 32

L:1200 TYPE

| Tunable White lighting | Unit 6500K-2700K |

NEW **FAD-815X**
Power consumption **20.7W** (100-242V)

Recessed Recessed open type
Cut out size (for a single unit) 65×1210
NEW

V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK1019W (Body: Single unit)
ERK1020W (Body: Connection unit)
ERK1021W (Body: End unit)

Rated luminous flux / Specific energy consumption efficiency
2234 lm 107.9 lm/W
Weight: 1.5kg

Surface mounted Wall washer
W70×H95×L1204
NEW

V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK9937W (Fixture)

Rated luminous flux / Specific energy consumption efficiency
2335 lm 112.8 lm/W
Weight: 2.0kg

Surface mounted Surface-mounted type
W55×H105×L1204
NEW

V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK9993W (Body: For single/conecting use)

Rated luminous flux / Specific energy consumption efficiency
2407 lm 116.2 lm/W
Weight: 3.2kg

L:600 TYPE

| Tunable White lighting | Unit 6500K-2700K |

NEW **FAD-817X**
Power consumption **11.1W** (100-242V)

Recessed Recessed open type
Cut out size (for a single unit) 65×605
NEW

V Free 100-242 | Service life of LED: 40,000 hours | Patent Pending | CRI82

ERK1022W (Body: End unit)

Rated luminous flux / Specific energy consumption efficiency
1137 lm 102.4 lm/W
Weight: 1.0kg

Linear 32

Surface mounted Bracket type (Upper light distribution)

Body: Aluminum (W: Matt white / U: Dark brown)
LED Module Unit sold separately
For both single and connecting use
Feeding connector sold separately: RK-581N/566N
End cap included

W: White
U: Dark brown

D60×H80

Indoor | V Free 100-242 | Integrated Driver | Service life of LED: 40,000 hours | CRI82

Tunable White lighting	Length	Body model number	Unit model number 6500K-2700K CRI82		Rated luminous flux / Specific energy consumption efficiency	Remarks
Fit Fit Plus	L:2400TYPE	ERK9956W (white) ERK9956U (dark brown)	Power consumption **41.4W**	**NEW** FAD-815X ×2	5103 lm 123.2 lm/W [9]	Weight: 4.5kg
	L:1500TYPE	ERK9957W (white) ERK9957U (dark brown)	Power consumption **26.2W**	**NEW** FAD-814X ×1	3188 lm 121.6 lm/W [9]	Weight: 3.2kg
	L:1200TYPE	ERK9958W (white) ERK9958U (dark brown)	Power consumption **20.7W**	**NEW** FAD-815X ×1	2551 lm 123.2 lm/W [9]	Weight: 2.6kg
	L:900TYPE	ERK9959W (white) ERK9959U (dark brown)	Power consumption **15.5W**	**NEW** FAD-816X ×1	1867 lm 120.4 lm/W [9]	Weight: 2.1kg
	L:600TYPE	ERK9961W (white) ERK9961U (dark brown)	Power consumption **11.1W**	**NEW** FAD-817X ×1	1299 lm 117.0 lm/W	Weight: 1.5kg
PWM Dimming	L:1500TYPE	ERK9957W (white) ERK9957U (dark brown)	Power consumption **23.1W**	**NEW** RAD-855X ×1	2520 lm 109.0 lm/W	Weight: 3.6kg
	L:750TYPE	ERK9960W (white) ERK9960U (dark brown)	Power consumption **15.4W**	**NEW** RAD-856X ×1	1376 lm 89.3 lm/W	Weight: 1.9kg

OPTION

Power supply connector (Lead wire type)
RK-581N L1000 300V / 3.0A
RK-566N L200 300V / 3.0A

In-line connection cord
RK-559N L200mm 300V / 3.0A

Tunable LEDZ

Fit/Fit Plus Wireless Tunable White **Tunable Square Panel Light**

A low-profile fixed light ideal for offices, conference rooms and stores

Typical Tunable White Settings

	8:00 Opening in early morning	11:00 Morning to noon	14:30 Evening	18:00 21:00 Night-time
Color temperature	5000K	4000K	3000K	2700K
Dimming level	100%	90%	80%	60%

5000K 100% brightness
Start of the day
Welcoming with a bright light similar to sunrise

The illuminance inside the store is set high during periods of strong outdoor light so that the store interior does not feel dark in comparison.

4000K 90% brightness
When it is bright outside
A refreshingly bright interior is welcoming.

Ensures good visibility in crowded stores and promotes the customers' willingness to purchase.

3000K 80% brightness
Evening hours
Creates a homey atmosphere by gradually lowering the color temperature from the morning to the noon hour.

At the same time, fresh foods and prepared foods are well illuminated to convey a sense of freshness.

Comparison of morning and noon
40% reduction
The color temperature and brightness are reduced during evening and night-time hours to create a calming space and further reduce power consumption.

2700K 60% brightness
Night-time setting
The side dish counter and alcohol counter are busy.

The side dishes create an impression of freshness while the overall brightness is kept low.

600 Series

Recessed White acrilyc panel

Cut out size 600

eco green | V Free 100-242 | Integrated Driver | Wireless Tunable White | Service life of LED: 40,000 hours | CRI 82

11000 lm TYPE
6500K-2700K
EFK1028W
12398 lm 141.8 lm/W
Power consumption **87.4W**

Surface mounted White acrilyc panel

Surface mounted 630

eco green | V Free 100-242 | Integrated Driver | Wireless Tunable White | Service life of LED: 40,000 hours | CRI 82

11000 lm TYPE
6500K-2700K
EFK1027W
12398 lm 141.8 lm/W
Power consumption **87.4W**

450 Series

Recessed White acrilyc panel

Cut out size 450

eco green | V Free 100-242 | Integrated Driver | Wireless Tunable White | Service life of LED: 40,000 hours | CRI 82

6000 lm TYPE
6500K-2700K
EFK1030W
5256 lm 140.9 lm/W
Power consumption **37.3W**

Surface mounted White acrilyc panel

Surface mounted 480

eco green | V Free 100-242 | Integrated Driver | Wireless Tunable White | Service life of LED: 40,000 hours | CRI 82

6000 lm TYPE
6500K-2700K
EFK1029W
5256 lm 140.9 lm/W
Power consumption **37.3W**

275 Series

Recessed White acrilyc panel

Cut out size 275

V Free 100-242 | Integrated Driver | Wireless Tunable White | Service life of LED: 40,000 hours | CRI 82

2700 lm TYPE
6500K-2700K
EFK9994W
2727 lm 118.0 lm/W
Power consumption **23.1W**

Tunable LEDZ

Fit/Fit Plus Wireless Tunable White **Tunable Base Light**

An extensive product line with easy pricing

4 Feet

eco green | V Free 100-242 | Service life of LED: 40,000 hours | CRI 82

Tunable White lighting — Unit — 6500K-2700K

		Unit
NEW **6900 lm TYPE** Power consumption **45.6W** (100-242V)		FAD-827X
NEW **5200 lm TYPE** Power consumption **35.0W** (100-242V)		FAD-828X

4 Feet

eco green | V Free 100-242 | Service life of LED: 40,000 hours | CRI 82

Tunable White lighting — Unit — 6500K-2700K

|		Unit
NEW **6900 lm TYPE** Power consumption **45.6W** (100-242V)		FAD-827X
NEW **5200 lm TYPE** Power consumption **35.0W** (100-242V)		FAD-828X

Surface mounted V shape
W:230
ERK9584W (Fixture)
Body: White
Weight: 2.4kg

Rated luminous flux / Specific energy consumption efficiency
6758 lm 148.2 lm/W
5200 lm 148.5 lm/W

Surface mounted V shape
W:150
ERK9635W (Fixture)
Body: White
Weight: 2.0kg

Rated luminous flux / Specific energy consumption efficiency
6758 lm 148.2 lm/W
5200 lm 148.5 lm/W

Surface mounted Linear type
W:79
ERK9636W (Fixture)
Body: White
Weight: 1.6kg

Rated luminous flux / Specific energy consumption efficiency
6846 lm 150.1 lm/W
5268 lm 150.5 lm/W

Surface mounted With reflective shades
W:170
NEW
ERK9820WA (Fixture)
Body: White
Weight: 2.4kg
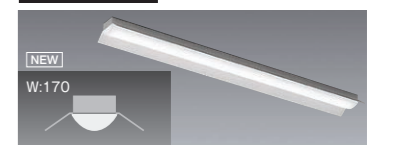
Rated luminous flux / Specific energy consumption efficiency
6664 lm 146.1 lm/W
5128 lm 146.5 lm/W

Tunable Base Light

4 Feet

eco green	V Free 100-242	Service life of LED: 40,000 hours	CRI 82

Tunable White lighting

Unit: **6500K-2700K**

Fit Fit Plus

NEW **6900 lm TYPE**
Power consumption **45.6W**（100-242V） — **FAD-827X**

NEW **5200 lm TYPE**
Power consumption **35.0W**（100-242V） — **FAD-828X**

4 Feet

eco green	V Free 100-242	Service life of LED: 40,000 hours	CRI 82

Tunable White lighting

Unit: **6500K-2700K**

Fit Fit Plus

NEW **6900 lm TYPE**
Power consumption **45.6W**（100-242V） — **FAD-829X**

NEW **5200 lm TYPE**
Power consumption **35.0W**（100-242V） — **FAD-830X**

4 Feet

eco green	V Free 100-242	Service life of LED: 40,000 hours	CRI 82

Tunable White lighting

Unit: **6500K-2700K**

Fit Fit Plus

NEW **6900 lm TYPE**
Power consumption **45.6W**（100-242V） — **FAD-829X**

NEW **5200 lm TYPE**
Power consumption **35.0W**（100-242V） — **FAD-830X**

4 Feet

eco green	V Free 100-242	Service life of LED: 40,000 hours	CRI 82

Tunable White lighting

Unit: **6500K-2700K**

Fit Fit Plus

NEW **6900 lm TYPE**
Power consumption **45.6W**（100-242V） — **FAD-829X**

NEW **5200 lm TYPE**
Power consumption **35.0W**（100-242V） — **FAD-830X**

Recessed　Troffer type
Cut out size 300×1257
NEW　W:300　Low profile type
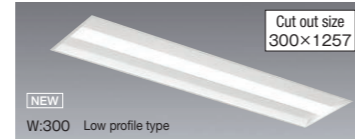
ERK9985W (Fixture)
Body: White　Weight: 3.7kg
With connecting brackets
Low profile type

Rated luminous flux / Specific energy consumption efficiency

6662 lm　146.0 lm/W

5127 lm　146.4 lm/W

Recessed　Troffer type
Cut out size 190×1257
NEW　W:190　Low profile type
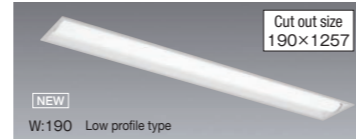
ERK9987W (Fixture)
Body: White　Weight: 2.7kg
With connecting brackets
Low profile type

Registered Design

Rated luminous flux / Specific energy consumption efficiency

6655 lm　145.9 lm/W

5121 lm　146.3 lm/W

Surface mounted　Troffer type
NEW　W:250
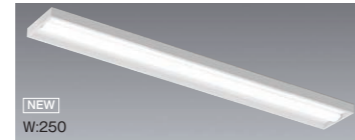
ERK9983W (Fixture)
Body: White
Weight: 3.8kg

Rated luminous flux / Specific energy consumption efficiency

6655 lm　145.9 lm/W

5121 lm　146.3 lm/W

Surface mounted　Wall-washer type
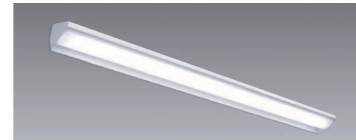
ERK9818W (Fixture)
Body: White
Weight: 2.3kg

Rated luminous flux / Specific energy consumption efficiency

6474 lm　141.9 lm/W

4982 lm　142.3 lm/W

Recessed　Troffer type
Cut out size 220×1235
NEW　W:220　Low profile type
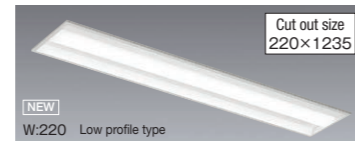
ERK9989W (Fixture)
Body: White　Weight: 3.2kg
With connecting brackets
Low profile type

Rated luminous flux / Specific energy consumption efficiency

6655 lm　145.9 lm/W

5121 lm　146.3 lm/W

Recessed　Troffer type
Cut out size 150×1235
NEW　W:150　Low profile type
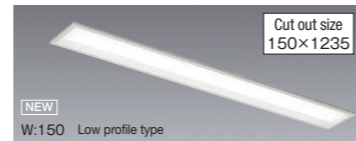
ERK9990W (Fixture)
Body: White　Weight: 2.5kg
With connecting brackets
Low profile type

Rated luminous flux / Specific energy consumption efficiency

6633 lm　145.4 lm/W

5104 lm　145.8 lm/W

Recessed　White louver type
Cut out size 220×1235
W:220
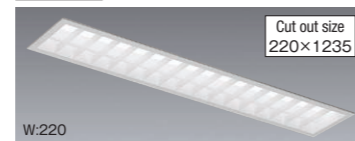
ERK9929W (Fixture)
Body: White　Weight: 5.1kg
With connecting brackets

Rated luminous flux / Specific energy consumption efficiency

5630 lm　123.4 lm/W

4333 lm　123.8 lm/W

Recessed　White louver type
Cut out size 150×1235
W:150
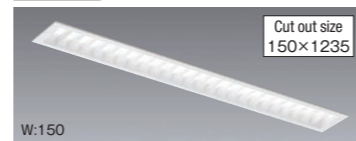
ERK9567WA (Fixture)
Body: White　Weight: 4.7kg
With connecting brackets

Rated luminous flux / Specific energy consumption efficiency

5630 lm　123.4 lm/W

4333 lm　123.8 lm/W

INDEX

SAFETY QUALITY REPORT

Aiming for further reliability improvement

Durability

ENDO products are subject to a rigorous testing program to rectify any safety issues.

To ascertain the limits of product and part performance and identify in advance any latent defects or weaknesses, we subject energized products to harsh heat and vibration stress several times greater than what is used in conventional reliability testing. Any defects or weaknesses identified as a result of this testing that may harbor safety or functional deficiencies are addressed by design changes or part replacements to ensure safety and functional integrity.

ENDO is the first Japanese lighting manufacturer to introduce Highly Accelerated Life Test（HALT）, a type of destructive testing.

HALT tester
HALT testing consists of five steps: （1）a low-temperature stage, （2）a high-temperature stage, （3）a rapid temperature fluctuation stage, （4）a vibration stage, and （5）a compound（thermal shock + vibration）stage. We enhance product reliability by identifying operational and breakdown limits that lie outside the product specifications and optimizing the margins that lie between the specifications and those limits.

（Principal specifications）
· Temperature stress test: Maximum temperature range: –100°C to 200°C
· Vibration stress test: Maximum vibration range: 0 to 70 G

Measure against interference waves

The ENDO products satisfy the engineering criteria of the Electrical Appliances and Materials Safety Act.

From July 1, 2012, LED lighting fixtures are covered by the Electrical Appliances and Materials Safety Act. In ENDO products, not only the products applicable to the Electrical Appliances and Materials Safety Act, but also some non-applicable products（e.g. straight type LED module, etc.）are designed to satisfy the engineering criteria of the Electrical Appliances and Materials Safety Act based on the strict inspection standard of ENDO.

◀ Radio wave test chamber

Item	Standard value		Remark
	Frequency range	Limit value	
Noise terminal voltage	526.5kHz～5MHz	56 dB or less	In accordance with the Electrical Appliances and Materials Safety Act
	5MHz～30MHz	60 dB or less	
Noise power	30MHz～300MHz	55 dB or less	In accordance with the Electrical Appliances and Materials Safety Act

Noise reliability which satisfies the criteria of the Electrical Appliances and Materials Safety Act

The ENDO products have noise-resistant performance which sufficiently satisfies the noise terminal voltage and the noise power specified in the Electrical Appliances and Materials Safety Act

Noise emitted from electric/electronic devices is controlled by the Electrical Appliances and Materials Safety Act. Lighting fixtures applicable to the Electrical Appliances and Materials Safety Act are required to pass the noise terminal voltage test and the noise power test. Conventional lighting fixtures have not given significant effect on TV or radio. The ENDO products satisfies the criteria of the Electrical Appliances and Materials Safety Act similar to general lighting fixtures. Now, the LED lighting fixtures are added to the items for control as an electric appliance applicable to the Electrical Appliances and Materials Safety Act.
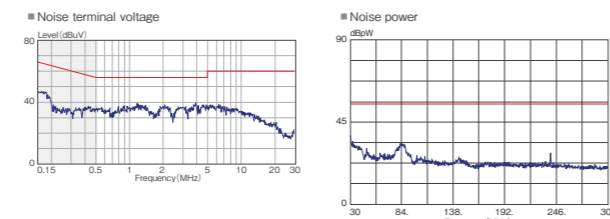
▲ Noise test chamber

◀ Lightning Surge Tester

■ Noise terminal voltage
Level（dBuV）
Frequency（MHz）

■ Noise power
dBuW
Frequency（MHz）

RoHS directive on restriction of the use of certain hazardous substances

In Europe, the RoHS directive[2] which restricts the use of 6 types of specified hazardous substances[1] contained in electric/electronic appliances sold in EU member nations is in force. After July, 2006, inclusion of specified hazardous substances is prohibited except for some applications. In the Green Purchasing Act, based on this movement, display and announcement for inclusion of specified chemical substances are added to "Judgment criteria[3]."

[1] Specified hazardous substances: Lead, mercury, cadmium, hexavalent chromium compound, polybromobiphenyl and polybromodiphenylether
[2] RoHS directive: European Parliament and Council Directive on restriction of the use of specified hazardous substances contained in electric/electronic appliances
[3] The content standard value is in accordance with the table A1, Appendix A and Appendix B in JIS C 0950: 2008.

Waterproof performance

Waterproof test complying with the JIS standard is performed.

Under the conditions specified in the JIS standard, the waterproof test has been performed longer than the time specified to check the waterproof performance of the products.

Standard value of waterproof test

In JIS standard C8105-1, the protection class（IP code）against entry of moisture from outside the product is specified with the specified measurement/testing method. The ENDO products have been through the tests complying with the JIS standard to check the waterproof performance.

Protection class against entry of moisture（JIS standard）

Secondary characteristic number	Protection class		
	Summary	Definition	
3 (IPX3)	Protection against spraying water	Water sprayed at the angle from vertical to 60 degrees on both sides must not give adverse effect.	

Automated waterproof tester
Waterproof tests specified by IEC and JIS are performed. It is used to check if adverse effect from rain or humidity is given and if safety is ensured by applying intermittent artificial rains over night and day.

Earthquake performance

The ENDO products have gone through aseismic performance evaluation with two types of aseismic tests.

① Aseismic tests in accordance with the building equipment aseismic design/construction guideline have been performed.
② Seismic tests with the seismic waveform（actual measurement waveform）which has caused great disaster including the Great East Japan Earthquake were performed to verify the product strength against earthquake and to maintain and improve the performance.

Vibration tester
Strength against earthquake or damage during transportation is checked.
Acceleration of 1.5G（value equivalent to scale 7）can be applied. Similar waveform of an earthquake occurred in the past can be reproduced.

Great Hanshin Earthquake Acceleration EW
Niigata Chuuetsu Earthquake Acceleration EW
Great East Japan Earthquake Acceleration NS

Tensile and Compression Tester
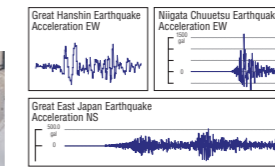
Earthquake grade（seismic scale）announced from an earthquake information is converted from the measured scale which turns the vibration intensity into a value at an observation point.

Seismic intensity scale table of the Japan Meteorological Agency

Seismic intensity scale	0	1	2	3	4	5-lower	5-higher	6-lower	6-higher	7
Measurement intensity scale	Less than 0.5	0.5 or more and less than 1.5	1.5 or more and less than 2.5	2.5 or more and less than 3.5	3.5 or more and less than 4.5	4.5 or more and less than 5.0	5.0 or more and less than 5.5	5.5 or more and less than 6.0	6.0 or more and less than 6.5	6.5 or more

Earth-friendly design for environment

The ENDO products are environment friendly design.

ENDO provides "products conforming to environment" considering environment, and promotes reduction of environmental load in products and services through resource circulation by product recycling and through control of chemical substances contained in products.

To reduce environmentally hazardous substances, the directive（RoHS directive）to prohibit use of specific chemical substances contained in the product; cadmium（Cd）, lead（Pb）, mercury（Hg）, hexavalent chromium （Cr+6）compound, polybromobiphenyl（PBB）and polybromodiphenylether （PBDE）has been in force in the member countries of EU（European Union） from July 1, 2006.
We have be taking actions to develop products which do not contain environmentally hazardous substances.

Fluorescence X-rays Analyzer

Verification for durability, weatherproof

Weather meter   Thermal shock tester

For salt damage district

Salt water spray test
Mist salt water is sprayed to the coating surface and the plated surface to verify the corrosion resistance performance of the paint and the metal surface treatment.

High reliability under the unusual environment

Environmental Test Room   Dust Chamber

Optimum Setting for long life time

Constant temperature and constant humidity testing chamber
It is a dew point saturation type testing chamber which is used by the public testing agency.
Assuming the internal and external operating environments, the temperature tests are performed to verify durability of products.

TECHNICAL DATA

Service life of LED module

The service life of the white LED is defined in "JIS C 8105 - 3".
"Total lighting time until the LED module does not turn on, or total lighting time until it falls to 70% of the measured value at the beginning of lighting, whichever is shorter, when the LED module is lit under the conditions specified by the lighting fixture manufacturer" (The "rated service life" of internal light type indicator lights that use LEDs as the light source is the time until the initial luminous flux of the light source is attenuated by 50%) We estimate the service life of the module according to these regulation.
Since the service life of the LED module is the design service life, it is not the guaranteed service life. Also, the service life of the LED module and the service life of the lighting fixture are different.

Reliability for long service life of 40,000 hours

By designing our products with a sufficient temperature margin from the normal set value, we ensure high reliability for long service life. This also contributes to improving the reliability of the entire fixture.

Relationship graph between LED temperature and service life
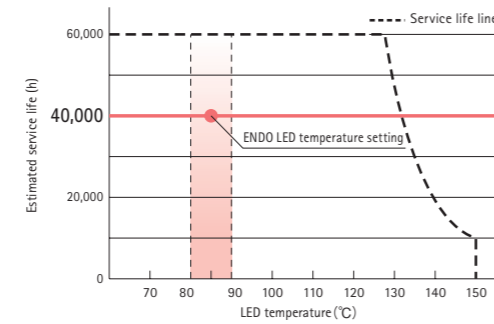
Luminous flux maintenance rate

Set according to "LED modules for general lighting service - Performance requirements (JIS C 8155)".

Comparison data of luminous flux maintenance rate

*The graph is an example. It may vary depending on the fixture.
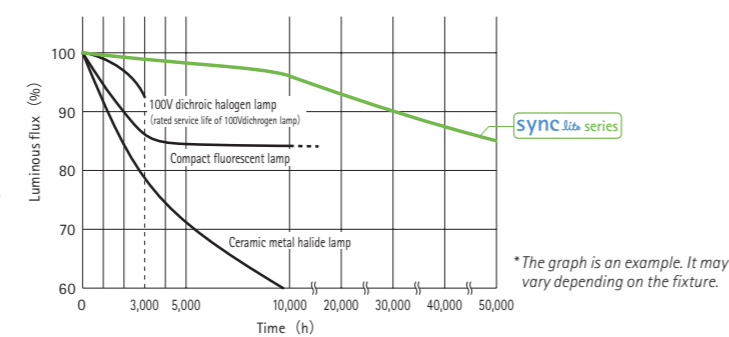
Reliability of luminous flux maintenance

The LEDZ series maintains brightness from the beginning to the end and shows a higher luminous flux maintenance rate than conventional lamps.

The replacement guideline of lighting fixtures is about 10 years, internal deterioration progresses.

Cumulative failure rate of lighting fixtures
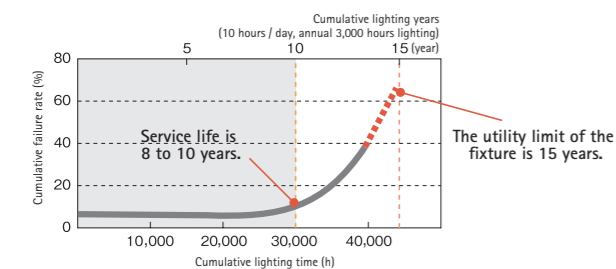
8 to 10 years after installation, internal deterioration progresses even if there is no abnormality in appearance. For safety, energy conservation and the global environment, please inspect and replace lighting fixtures that are near the end of their service life as soon as possible.

* ambient temperature 30 ℃ or less, 10 hours / day, annual 3,000 hours lighting
(If the ambient temperature is higher or the lighting time is longer, the replacement timing and service life will be shortened.)
According to the explanation of JIS C 8105-1: 2010.

Lighting fixtures have adequate time for replacement.

Adequate replacement guideline of lighting fixtures

Operation time	3,000 hours / year (10 hours / day)			
Main applications	Office, factory (general), store			
Voltage	Rating		105%	
Temperature (°C)	30 or less	40	30 or less	40
Replacement time (years)	10	5	7	3.5

* If used under the following conditions, the temperature rise of the insulating material will increase and the fixture life will be shortened.
● Power supply voltage exceeds 105%.
● Places where the ambient temperature exceeds 40 °C.
● In the case of attaching a fixture to the ceiling surface using a heat insulating material such as glass wool on the back side or covering the back side of an embedded fixture with heat insulating material. (In the case of being covered with insulation materials, please use insulation construction tools.)
● In the case of lighting beyond 10 hours / day.
[● Excerpt from JIS C 8105-1 "Luminaires - Part 1: General Requirements For Safety"]

Color shift of LEDs

In comparison with general light sources (fluorescent lamps or incandescent bulbs etc.), color shift of white LEDs is large, in fact.
For this reason, please note that colors may vary depending on each LED lighting fixture.

Certification

Please check the certification of models on this catalogue with our website or our sales office.

WARRANTY

SALES OFFICE