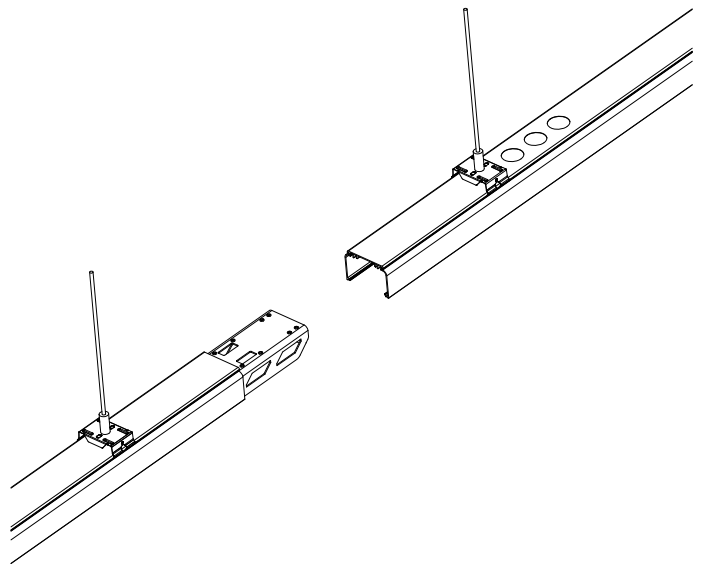
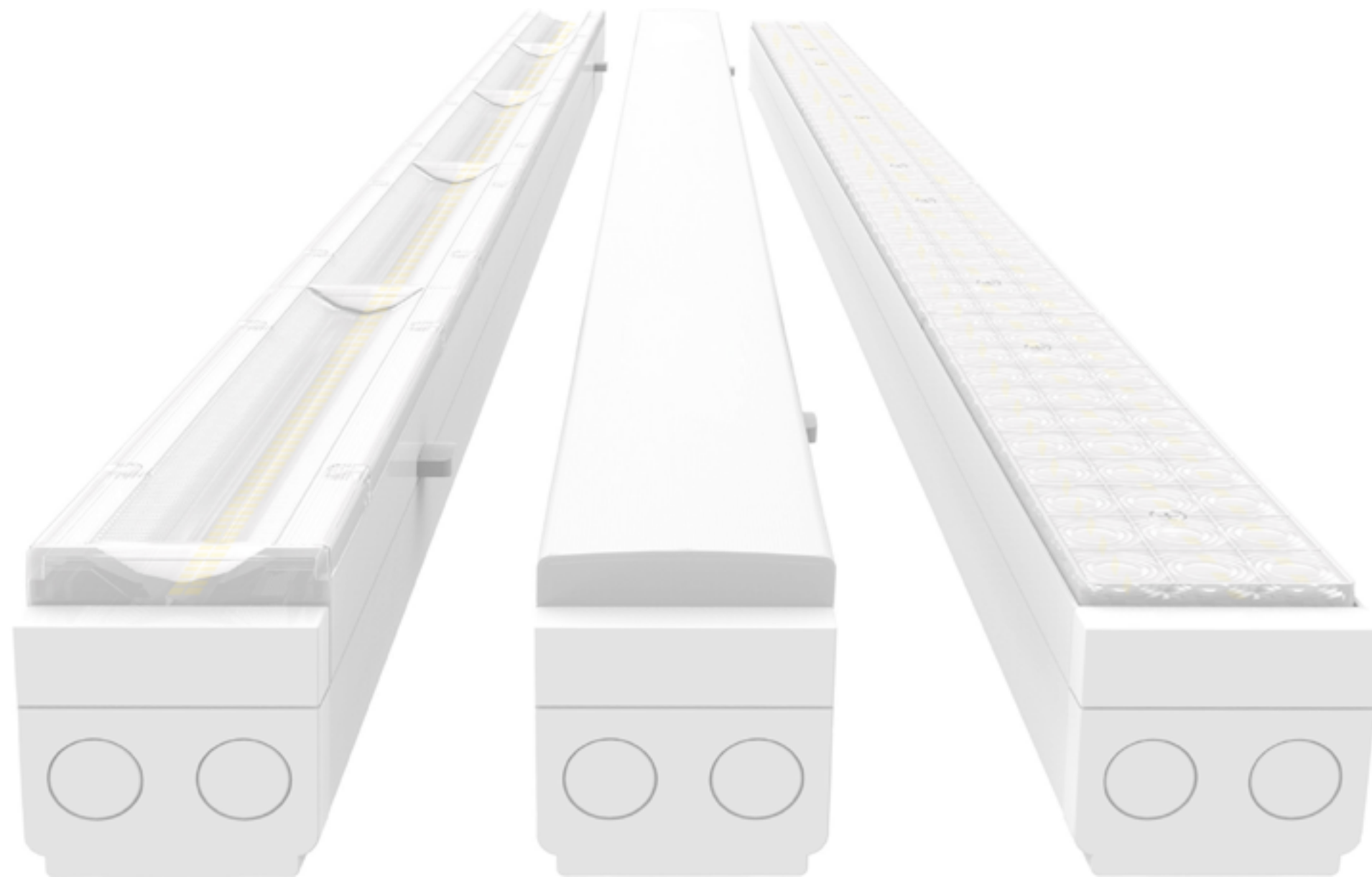


LED LINEAR
TRUNKING SYSTEM



LED Linear Trunking System

- Designed for Saving Cost and Time -



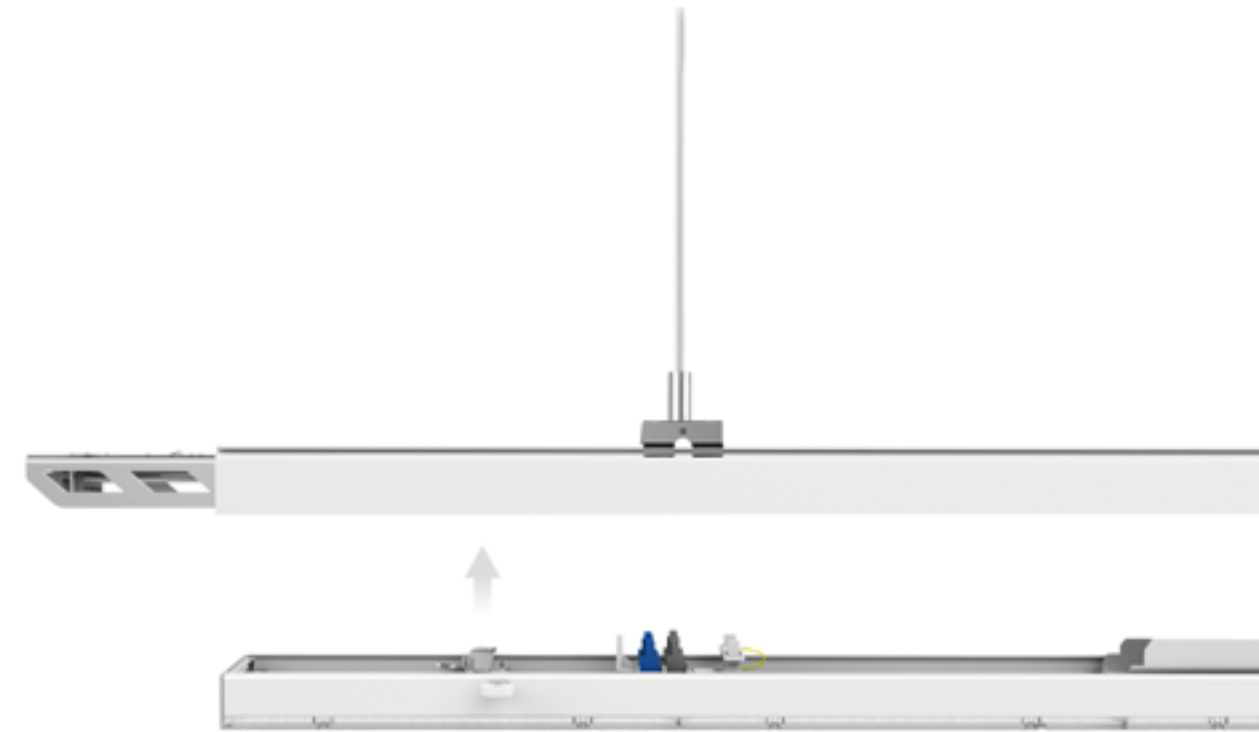


Saving Energy

- C Line: 150lm/w
- E Line: 130lm/w
- Beam Angle: 30°,60°,90°,120°,Double 25°,Right 25°,Left 25°

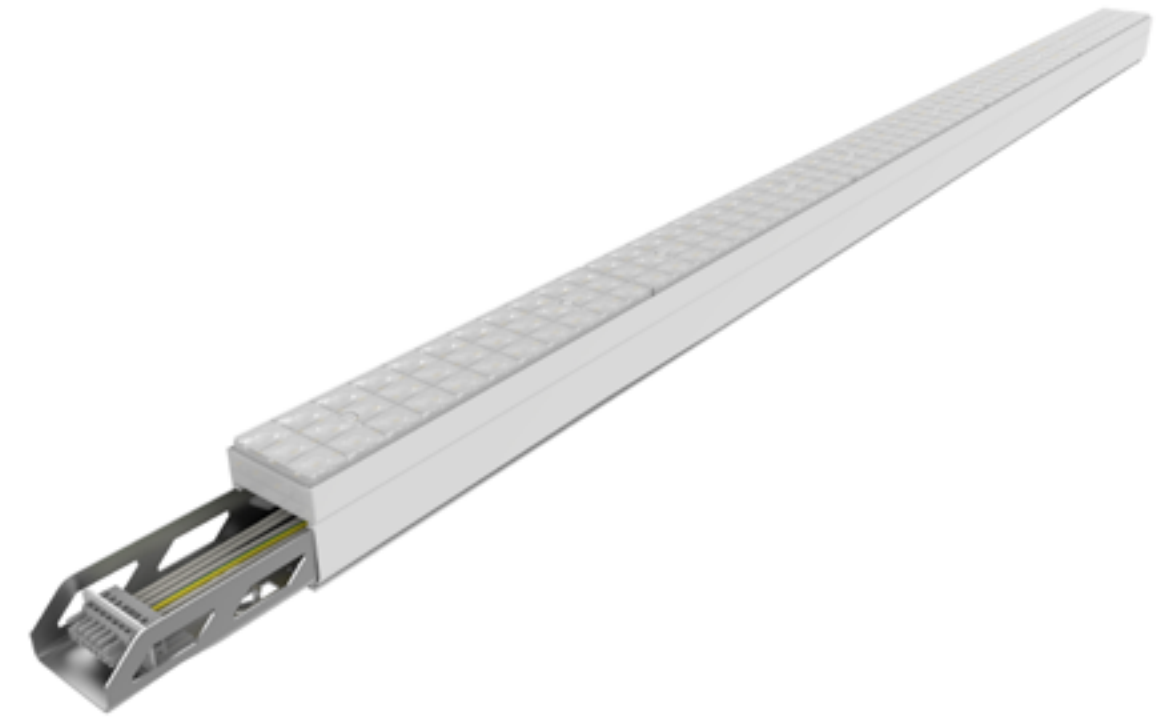
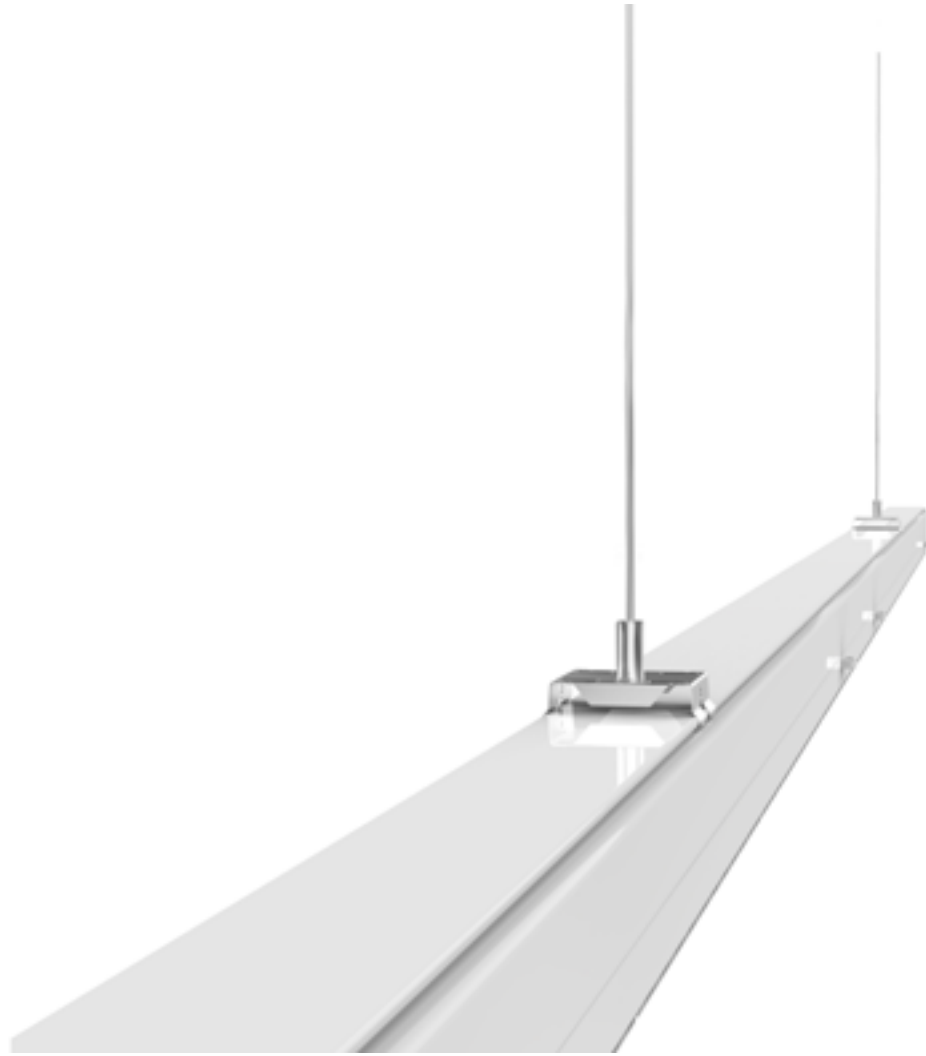
Saving Installation & Maintenance Cost

- 30 seconds to finish installation.
- Easy to assemble and disassemble because of modularization.
- TUV, GS and RCM certificate, 5 & 7 years warranty.



Saving Light Costs

- Pre-wired and connectable trunking rail saves the costs of wiring.
- Less lighting quantity, more cost effective light solution with optimal illumination.



Intelligent C & E line, More Application

- Dimming: DALI / 0-10V
- Emergency: 6W, 12W
- Sensor: Microwave / Daylight
- Track Rail Module for Track Light



Warehouse



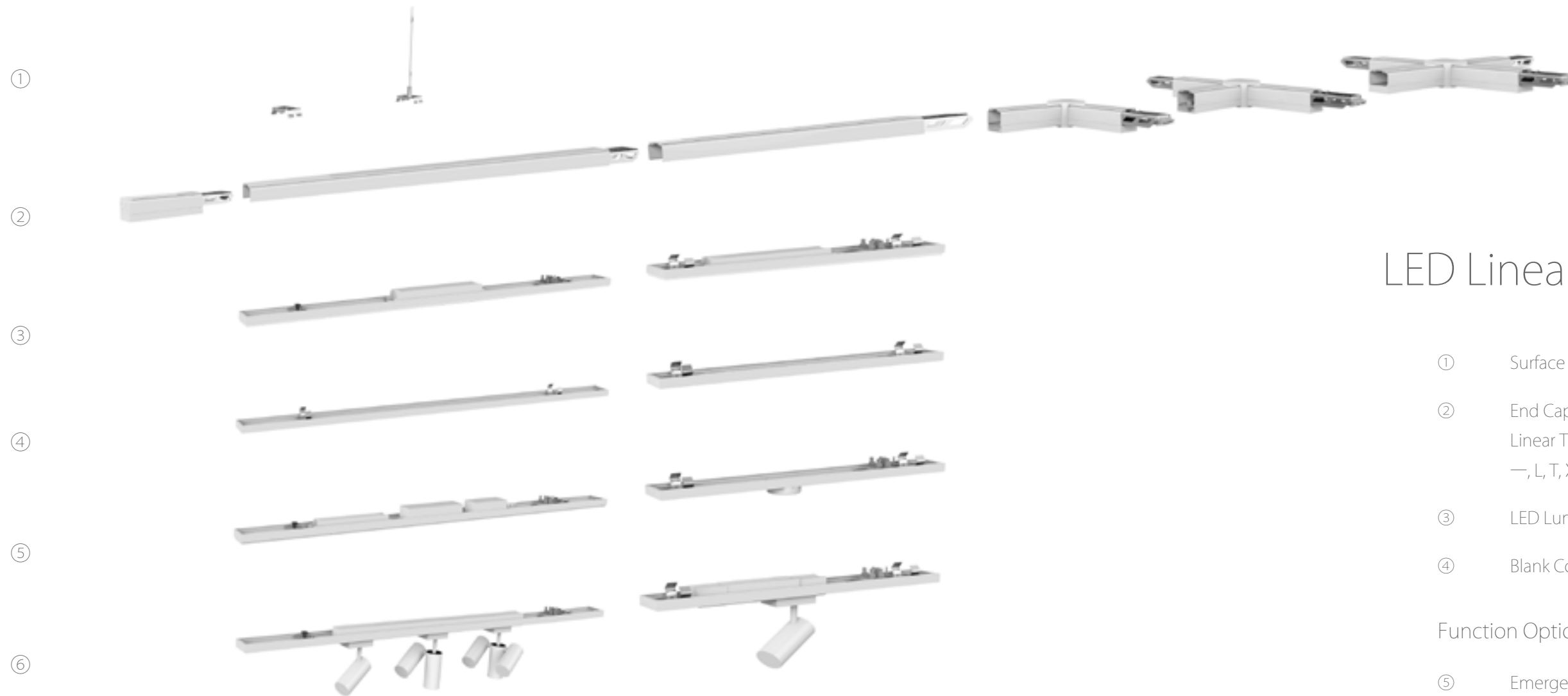
Workshop



Supermarket



Gym

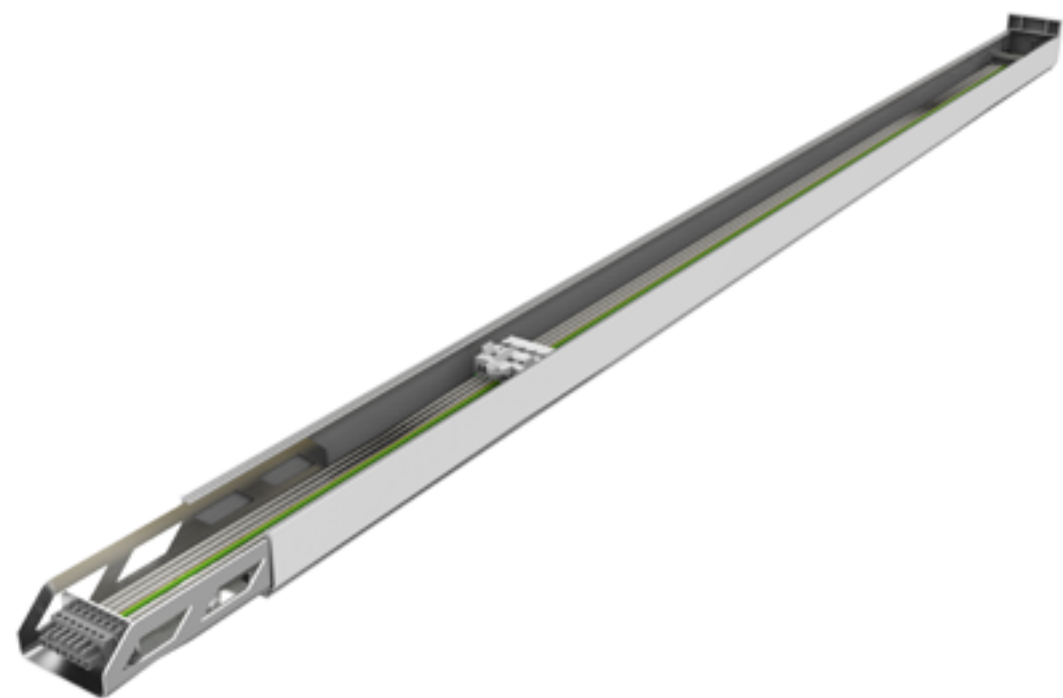


LED Linear Trunking System

- ① Surface Mounted Kits / Suspension Kits
- ② End Cap / Terminal Connector
Linear Trunking Rail (15FT / 10FT / 5FT / 2FT)
—, L, T, X Feed-in Node Connector (Optional)
- ③ LED Luminaire (5FT / 2FT)
- ④ Blank Cover (5FT / 2FT)

Function Optional

- ⑤ Emergency Module (5FT)
Motion Sensor Module (5FT)
- ⑥ Track Rail (5FT / 2FT)



E LINE Luminaire: 130lm/w



2FT: 576*65*26mm

SMD5630
 Power: 16w/20w/24w/28w
 CRI>80, PF>0.9
 120-130lm/w
 5&7 Years Warranty

3000K 4000K 5000K 6000K

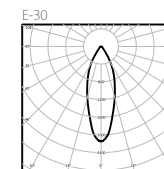


5FT: 1436*65*26mm

SMD5630
 Power: 36w/48w/60w/72w
 CRI>80, PF>0.9
 120-130lm/w
 5&7 Years Warranty

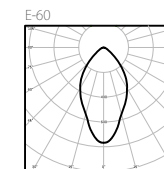
3000K 4000K 5000K 6000K

Beam Angle



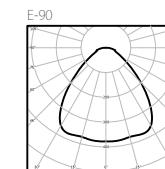
30°

Sharp distribution
 Applied to tight gap
 focusing on objects.



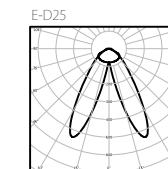
60°

Narrow distribution
 Applied to narrow
 passageway



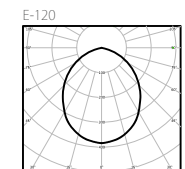
90°

Wide distribution
 Applied to wider
 passageway



25°/25°

Double asymmetric
 Applied to large
 gap between shelves



120°

Flat distribution
 Applied to open area with
 lower roof height

TUV, GS and RCM certificate, Lifud / Philips / Osram driver.
 30°, 60°, 90°, 120°, Double 25°, different beam angle available.
 2FT is for supplement length or to adjust the length in the continual connection application.

C LINE Luminaire: 150lm/w



2FT: 567*65*36mm

SMD5630
Power: 16w/20w/26w/32w
CRI>80, PF>0.9
140-150lm/w
5&7 Years Warranty

3000K 4000K 5000K 6000K

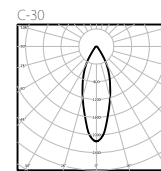


5FT: 1410*65*36mm

SMD5630
Power: 40w/50w/65w/80w
CRI>80, PF>0.9
140-150lm/w
5&7 Years Warranty

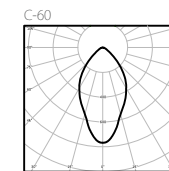
3000K 4000K 5000K 6000K

Beam Angle



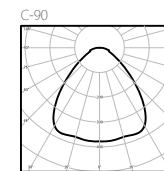
30°

Sharp distribution
Applied to tight gap
focusing on objects



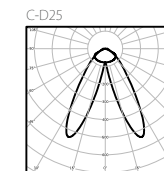
60°

Narrow distribution
Applied to narrow
passageway



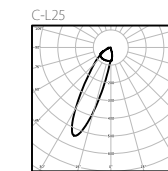
90°

Wide distribution
Applied to wider
passageway



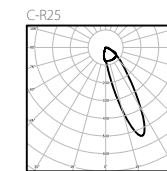
25°/25°

Double asymmetric
Applied to large
gap between shelves



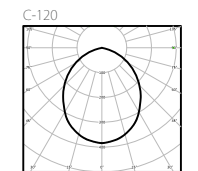
Left 25°

Left asymmetric
Applied to exhibition
focusing on goods



Right 25°

Right asymmetric
Applied to exhibition
focusing on goods

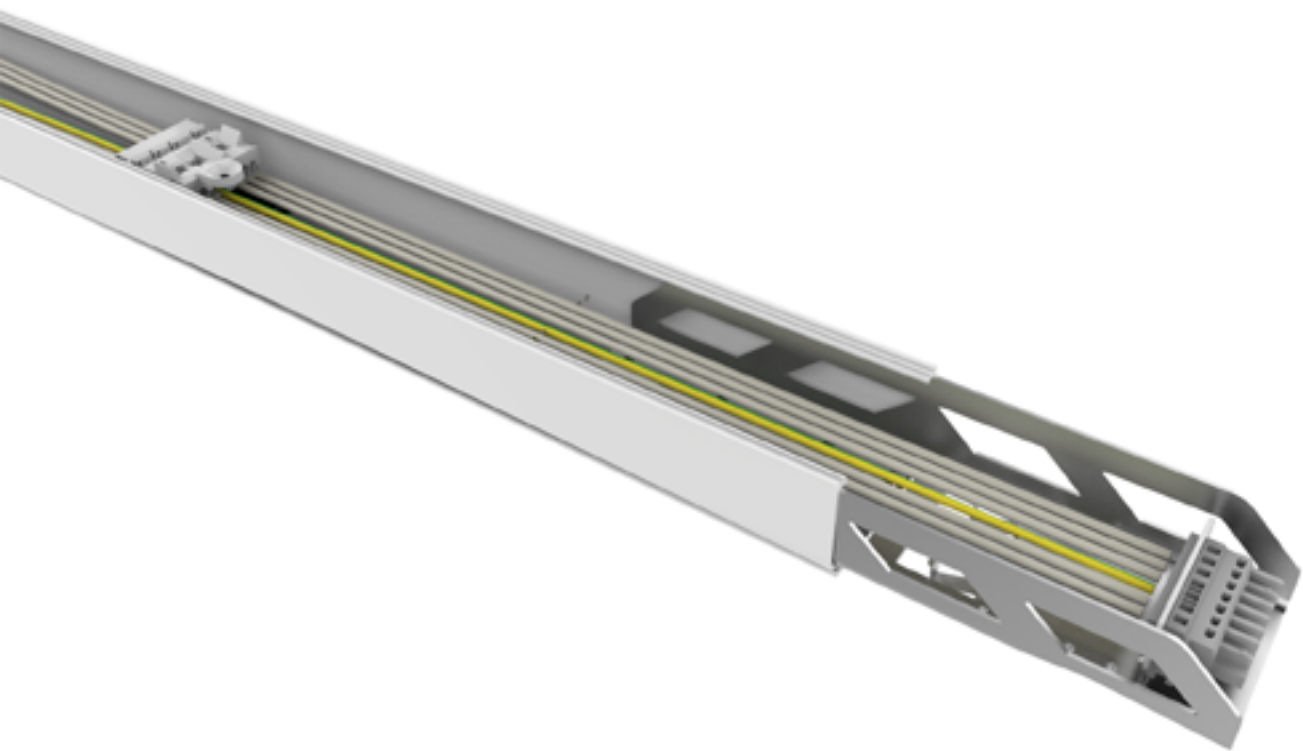


120°

Flat distribution
Applied to open area with
lower roof height

Smooth linear optical lens CooCo designed, higher light efficiency.
TUV, GS and RCM certificate, Lifud / Philips / Osram driver.
30°, 60°, 90°, 120°, Double 25°, Right 25°, Left 25°, different beam angle available.
2FT is for supplement length or to adjust the length in the continual connection application.

Trunking Rail

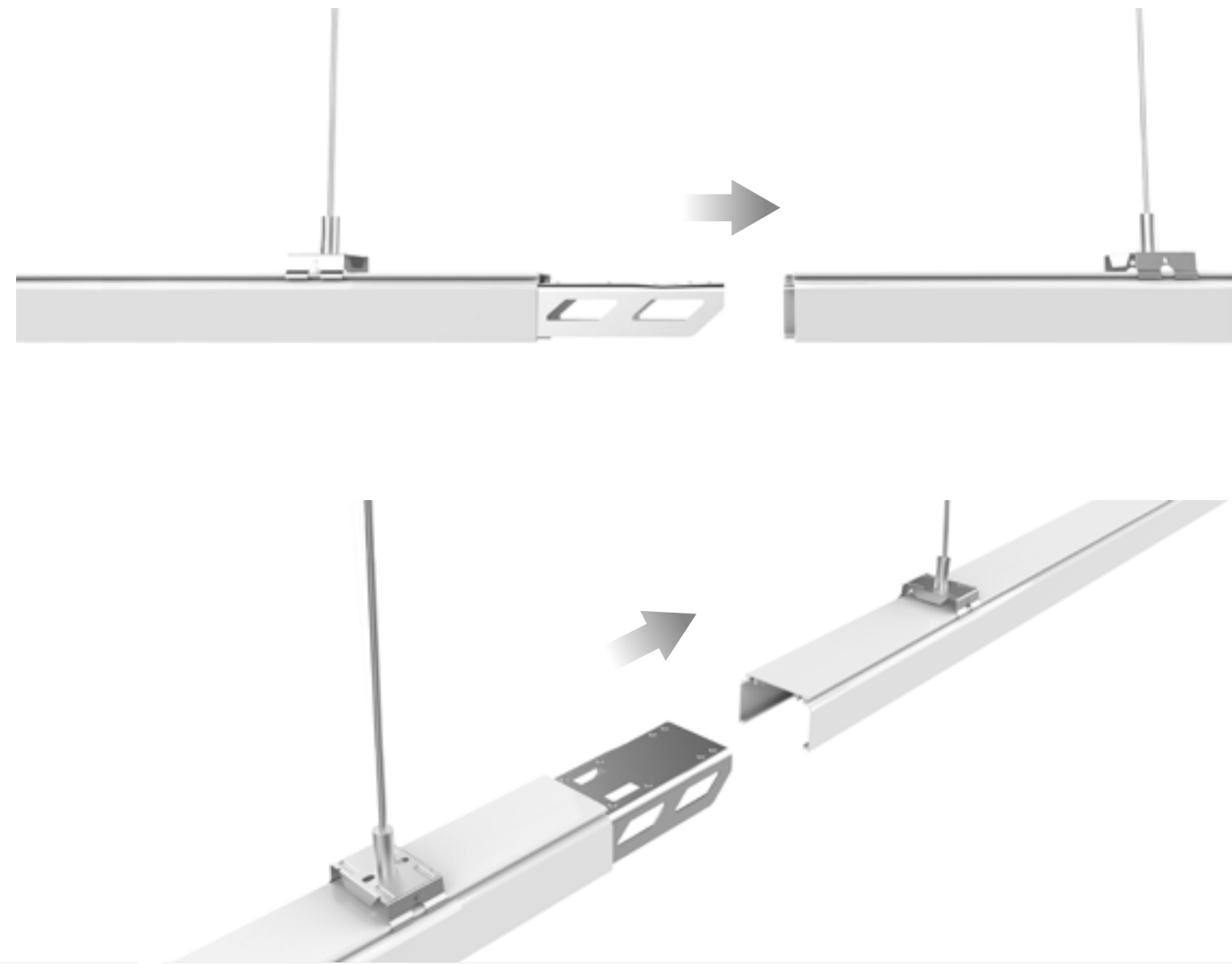


Pre-wired Trunking Rail Saves Installation Time & Cost

- With pre-wired trunking rail, no need to wire again in the new or retrofit projects.
- There are 5/7/11 wires in the rail, which supports more intelligent function.

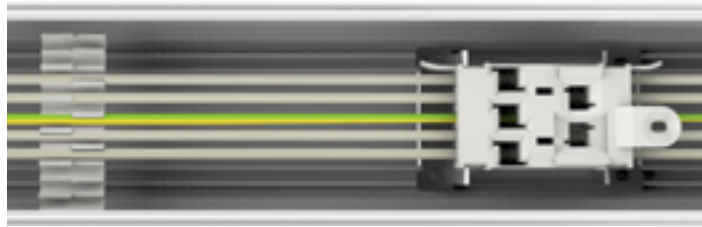
Seamless Continual Connection, No Gap!

- Well-designed pre-wired connector makes it easier and faster to connect the linear trunking rail.



Trunking Rail

5 Wires Trunking Rail - Length: 15FT / 10FT / 5FT / 2FT



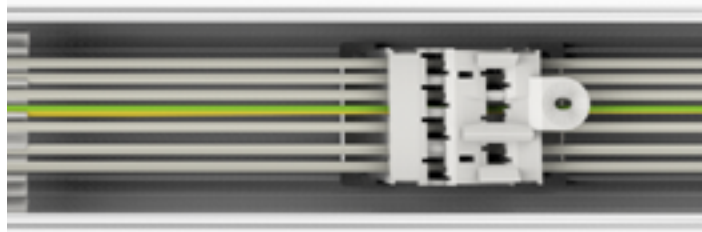
3 Pins wire connector plug
5-wires trunking rail
* Green: FG
* Blue: N
* Black: L1, L2, L3 phase selection knob

Function Description

Basic Lighting

	1	2	3	4	5	6	7	8	9	10	11
Basic Lighting	L1	N	L2	FG	L3						

7 Wires Trunking Rail - Length: 15FT / 10FT / 5FT / 2FT



5 Pins wire connector plug
7-wires trunking rail
* Green: FG
* Blue: N
* Red/White: D+/D-,DIM+/DIM-
* Black: L1, L2, L3 phase selection knob

Basic Lighting

Basic Lighting + DALI

Basic Lighting + 0-10V

Basic Lighting + Battery

Basic Lighting	L1	N	L2	FG	L3	--	--				
Basic Lighting + DALI	L1	N	L2	FG	L3	DA/N	DA/L				
Basic Lighting + 0-10V	L1	N	L2	FG	L3	DIM-	DIM+				
Basic Lighting + Battery	L1	N	L2	FG	L3	--	CHR				

11 Wires Trunking Rail - Length: 15FT / 10FT / 5FT / 2FT



9 Pins wire connector plug
11-wires trunking rail
* D+/D-: Dimming driver
* A/B/C/D: Emergency driver and battery
* L: L1, L2, L3 phase selection knob

Basic Lighting

Basic Lighting + DALI

Basic Lighting + 0-10V

Basic Lighting + Battery

Basic Lighting + DALI / Battery + EMG1

Basic Lighting + 0-10V / Battery + EMG1

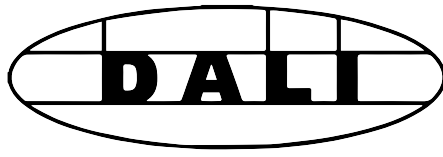
Basic Lighting + Battery / EMG1 + EMG2

Basic Lighting	--	--	--	--	L3	L2	L1	FG	N	--	--
Basic Lighting + DALI	--	--	DA/N	DA/L	L3	L2	L1	FG	N	--	--
Basic Lighting + 0-10V	--	--	DIM-	DIM+	L3	L2	L1	FG	N	--	--
Basic Lighting + Battery	--	--	--	--	L3	L2	L1	FG	N	--	CHR
Basic Lighting + DALI / Battery + EMG1	EN1	EN2	DAL/L	DAL/L	L3	L2	L1	FG	N	--	CHR
Basic Lighting + 0-10V / Battery + EMG1	EN1	EN2	DIM+	DIM+	L3	L2	L1	FG	N	--	CHR
Basic Lighting + Battery / EMG1 + EMG2	EN1	EN2	EL2	EL2	L3	L2	L1	FG	N	--	CHR

FG: Ground
EL1: Emergency 1 supply live
EN1: Emergency 1 supply neutral
EL2: Emergency 2 supply live
EN2: Emergency 2 supply neutral

DIM+: Positive 0-10V input
DIM-: Negative 0-10V input
DA/L: Positive DALI input, or live when works as dimming switch
DA/N: Negative DALI input, or neutral when works as dimming switch
CHR: Charge input for internal battery, mainly for detection of EMG1 or EMG2.

Dimming - DALI



Why is DALI Dimming ?

With DALI system, it is easy to control the brightness accurately because every luminaire has its own address.

- Easy to set
- Accurate control
- Simple and reliable communication structure
- Various application

How does DALI Dimming work ?

DALI standard network has 64 elements (individual address), 16 groups and 16 scenes. User can divide group according to different lighting elements to control and manage rooms lighting.

Each group can be set from 0% to 100% brightness.

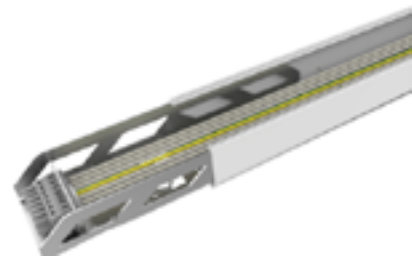
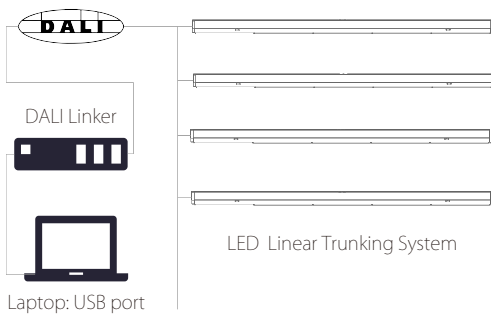
Normally for 40-50 pieces lamps, it can be divided into 16 groups. It can run 30 to 40 instructions within every second. It means that it can manage 2 instructions every second.

DALI Dimming and LED Linear Trunking System

CooCo LED Linear Trunking System with DALI function helps to intelligently control lighting in industry application, achieving to manage the rooms lighting flexibly. It will save costs and energy greatly. There are 5 wires, 7 wires and 11 wires for the pre-wired trunking rail. DALI function needs 7 or 11 wires to support the operation.

Power Supply

- Standard protocol: IEC62386, compatible with DALI control system.
- Dimming range: 0-100%, 0.1% possible.
- Power factor: PF>0.95, Efficiency > 85%
- Certificates: CE, ENEC, VDE, RCM

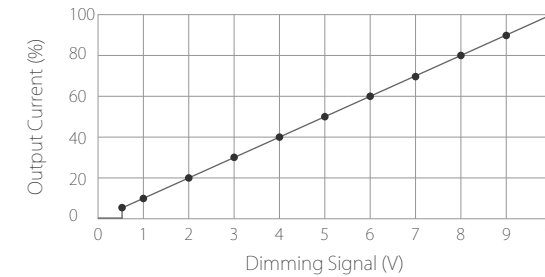


Dimming - 0-10V

Why is 0-10V Dimming ?

0-10V is analog lighting control protocol. Basically, 0-10V control applies voltage between 0 and 10 volts DC to produce varying intensity level. When the control voltage is reduced by the control, the light level is reduced.

- Economic dimming solution
- Energy saving
- Wide application



100% light output: 10V
0% light output: 0V

0-10V Dimming and LED Linear Trunking System.

We integrate the 0-10V dimming into the led linear trunking system. It helps to save energy greatly with easy dimming because of high working efficiency, low power consumption and stable operation.0-10V function needs 7 or 11 wires to support the operation.

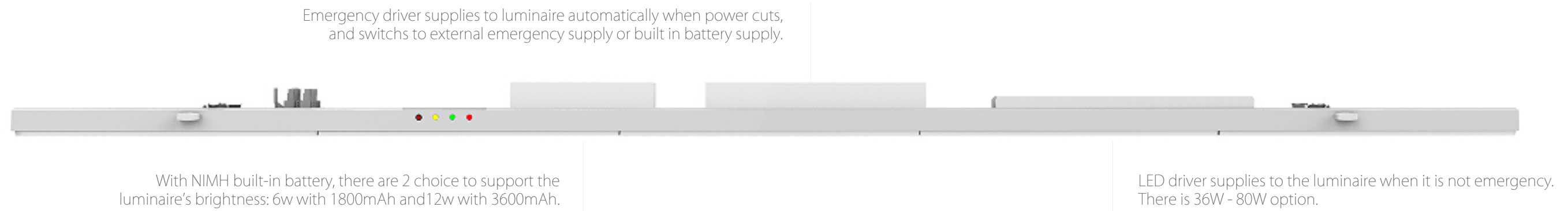
Power Supply

- 0-10V & PWM & Rx Dimmable
- 0%-100% dimming range
- High PF(PF > 0.9 @ 230Vac)
- Comply with IEC61000-4-5 Surge Level
- Certificates: CB, TUV, CE, RCM, UL, FCC



Emergency

LED Linear Trunking System is applied to industrial and commercial application, like warehouse, supermarket and factory. Emergency function is necessary in the project. To meet different requirement, there are 3 types of emergency solution for user's choice, such as external emergency supply, built-in battery supply, both of external emergency supply and built-in battery supply.



Emergency

Solution 1: External Emergency Supply



When power fails to supply to the led driver, luminaire automatically switches to external emergency power supply, the generator and central battery will support luminaire 100% brightness.
High recharging efficiency $\geq 80\%$
High discharging efficiency $\geq 90\%$
100 % output when it connects to generator or central battery system.
Lifespan: 50,000hrs
Warranty: 5 years



Detail 1: Status Indicating Wire

Wire for status indicators is to show the operation status of the emergency lighting system and regular performing functional test .

Green indicator:
On: Mains supply is connected
Off: Mains supply is disconnected

Red indicator:
On: Battery is charging
Off: Battery charging finished

Yellow indicator:
On: System failure

Solution 2: Built-in Battery Supply



When the power fails to support the led driver, it will automatically switch to emergency driver, then the emergency battery will support the luminaire with 6W or 12W for user's option.

Detail 2: Emergency Built-in Battery

Built-in Battery, 6W

luminous flux: 780lm
Battery: 1800mAh

Solution 3: External Emergency Supply + Built-in Battery Supply



When the power fails to support the led driver, it will automatically switch to emergency driver. There will 2 options of emergency backup. Firstly, it will be supported by the generator and central battery to have 100% brightness. If the luminaire fails to get the support of central battery, the built-in battery will supply the luminaire with 6w or 12w automatically.



Built-in Battery, 12W

luminous flux: 1560lm
Battery: 3600mAh

Track Rail Module for Track Light

The pre-assembled track rail module is mainly for spot lighting in supermarket, exhibition and showroom. It also matches with trunking rail and has relative lengths of 2FT and 5FT.



Track Rail Module for Track Light



2FT: E Line-576*65*36mm, C Line-567*65*36mm

- 1pcs Track Light
- 4 wires
- Corresponding 5/7/11 wires trunking rail.
- * Green: FG
- * Blue: N
- * Black: L1, L2, L3 phase selection knob
- (Wire connector's phase needs to be moved to match to the track rail L1, L2, L3 phase.)



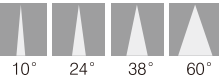
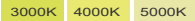
5FT: E Line-1436*65*36mm, C Line-1410*65*36mm

- 2~3pcs Track Light
- 4 wires
- Corresponding 5/7/11 wires trunking rail.
- * Green: FG
- * Blue: N
- * Black: L1, L2, L3 phase selection knob
- (Wire connector's phase needs to be moved to match to the track rail L1, L2, L3 phase.)



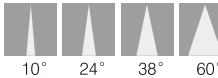
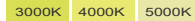
225*185mm*φ80

Cree led
Philips driver
Power: 12w
CRI>80, PF>0.9
Color: Black / White



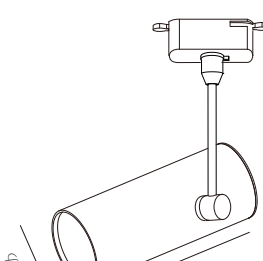
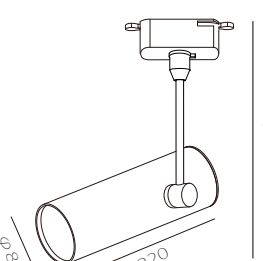
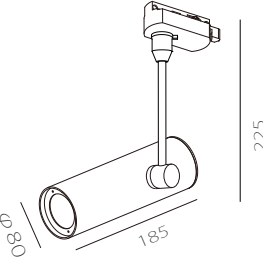
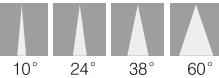
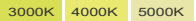
230*220mm*φ80

Cree led
Philips driver
Power: 20w
CRI>80, PF>0.9
Color: Black / White



235*220mm*φ90

Cree led
Philips driver
Power: 30w
CRI>80, PF>0.9
Color: Black / White

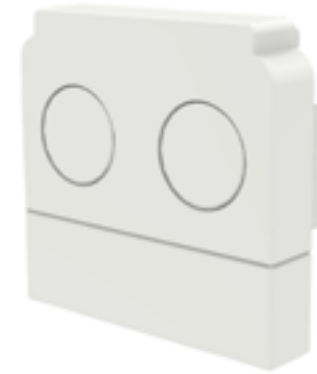


Accessory



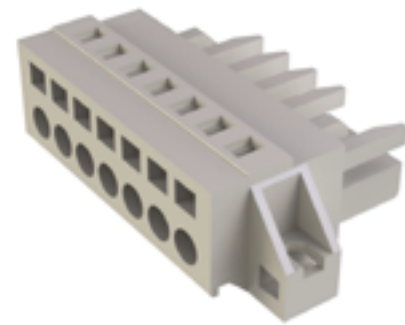
Surface Mounted Kits / Suspension Kits

Material: stainless steel
Size: L53*W36*H15mm
Thickness: 0.5mm
Cord Diameter: 1.5mm
Cord Length: 2m
Max distance between two suspension points: 3m



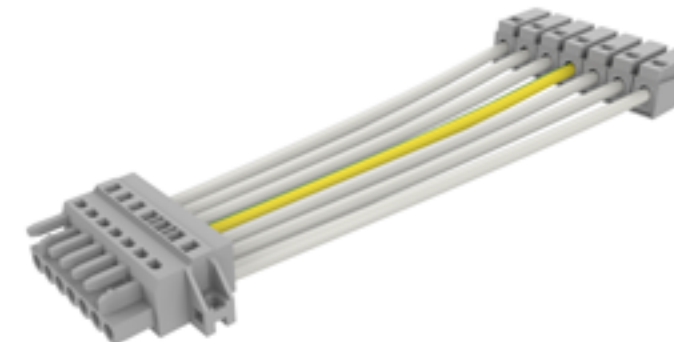
End Cap

Print customer's logo
Output wires by the hole
2 hole 5wires, 7 wires and 11 wires



Female AC Input Terminal Block A

For connection with input wires from endcap.



Female AC Input Terminal Block B

For connection with input wires from the back of trunking rail.



Blank Cover

For covering the trunking rail which has no luminaire.
2FT/5FT
White / Black



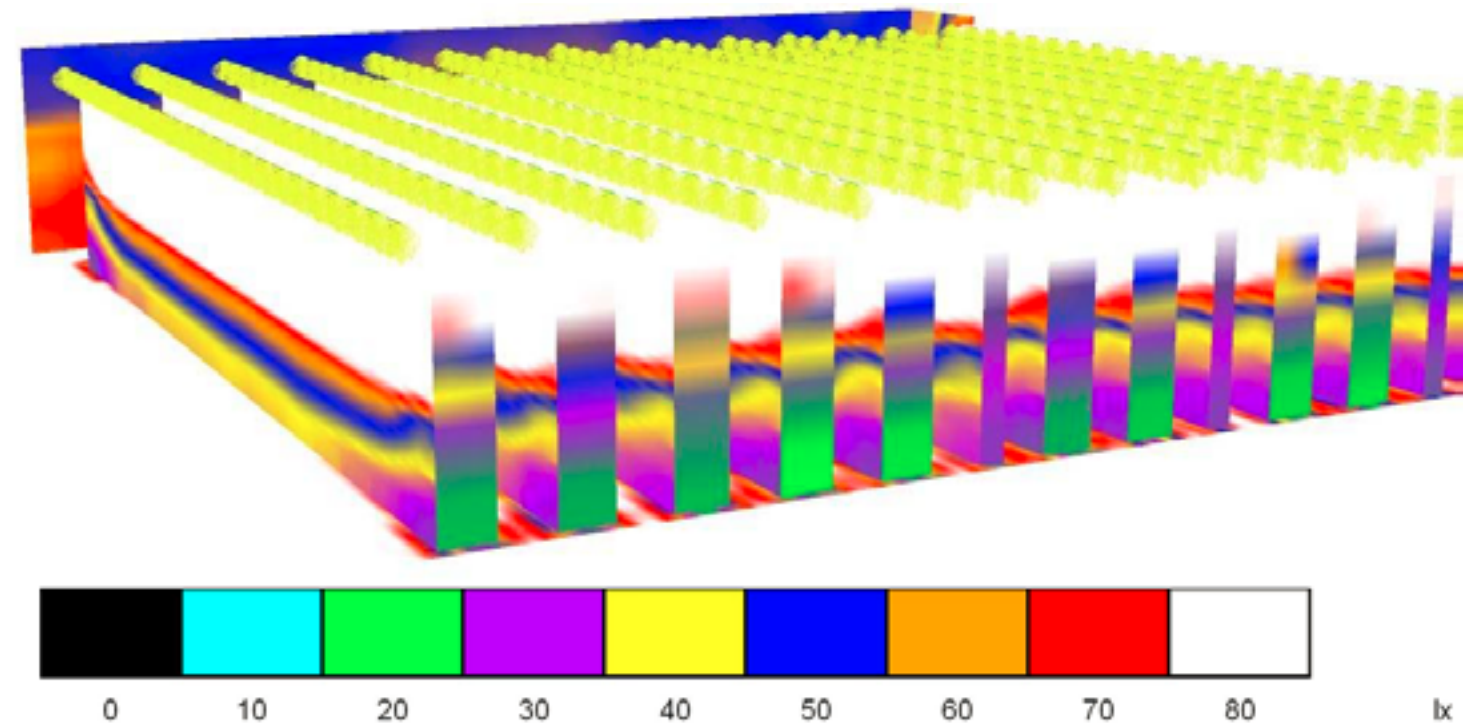
Feed-in Connector

"—" type connector :
For making it easier to input wires on hand.
It can be replaced by terminal block.
"L" type connector :
For trunking rail connection by corner.
"T" type connector :
For trunking rail connection by two corner.
"X" type connector :
For trunking rail connection in the central corner.



Warehouse

In warehouse with high hall, comparing with LED high bay or LED tri-proof light, LED Linear Trunking System can save more time and cost. Modular lighting makes it easy to install. When it is 10m room height and 8.5m mounting height, the system still can offer safe and uniform brightness. The high hall and the limited corridor between shelves require specific beam angle to focus on objects, increasing illumination and saving power consumption.



Height of Room: 10.000 m, Mounting Height: 8.500 m, Light loss factor: 0.80

Values in Lux, Scale 1:1209

Surface	ρ [%]	Eav[lx]	Emin[lx]	Emax[lx]	u0
Workplane	/	142	28	184	0.197
Floor	20	78	9.98	162	0.128
Ceiling	70	125	33	186	0.261
Walls(21)	50	129	22	858	/

Workplane:

Height: 0.850 m
 Grid: 64 x 64 Points
 Boundary Zone: 0.000 m

Luminaire Parts List:

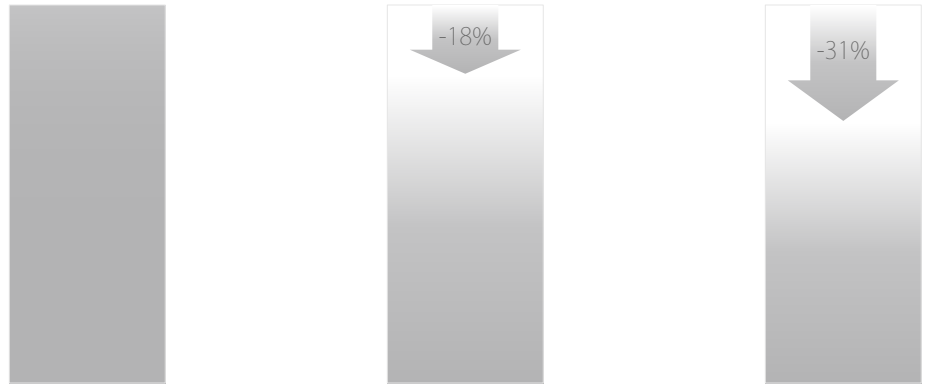
No.	Pieces		Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P[W]
1	389	ED LINEAR TRUNKING SYSTEM CCLS-E5FS72-65D25 (1.000)	9596	9503	71.8
Total:			3634865	3631563	26738

Energy Saving Analysis

• Application:	Warehouse	• Luminaire:	CCLS-E5FS72-65D25
• Area:	60.00 m*30.00 m	• Beam angle:	Double 25 degree
• Lighting Height:	8.5 m	• Room Height:	10 m
• Maintenance factor:	0.7	• Number of Light:	389 pieces
• Illuminance:	at least 100 lux	• Function:	0-10V, DALI
• Gap of Shelves:	1.5 m		

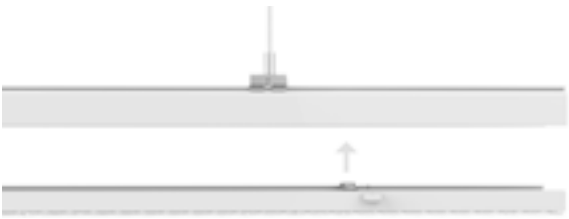
	LED High Bay	LED Tri-proof Light	E Line LED Linear Trunking System
Power of Luminaire(Watt)	400	50	72
Number of Light(Pieces)	101	661	389
Total Power Consumption(Watt)	40400	33050	28008
Total Lumens(Lm)	3634865	3634865	3634865
Luminous Efficiency(lm/w)	90	110	130
Work Hours p.d.(Hours)	12	12	12
Kilowatt Hours p.d(kWh)	484.8	396.6	336.1
Energy Saving cost p.d(\$)	\	\$88.2	\$148.7

How much energy cost saving ?



* The price of electricity is \$1/kWh as assumed.

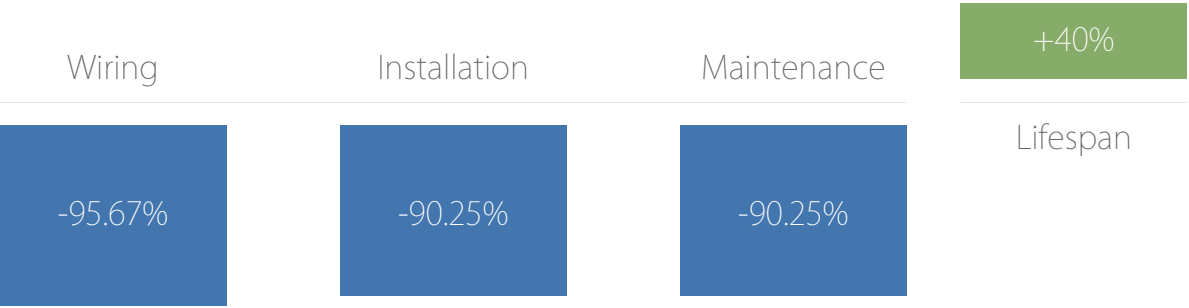
Labor Cost Saving Analysis



LED Linear Trunking System

- Pre-wired Trunking Railway reduces 95.67% of cost of wiring
- Flexible lock bar design saves 90.25% cost of installation
- Modularized design reduces 90.25% maintenance cost
- High quality module expands lifespan 40%
- TUV, GS and RCM certificate, 5 years guarantee

How much labor cost saving ?

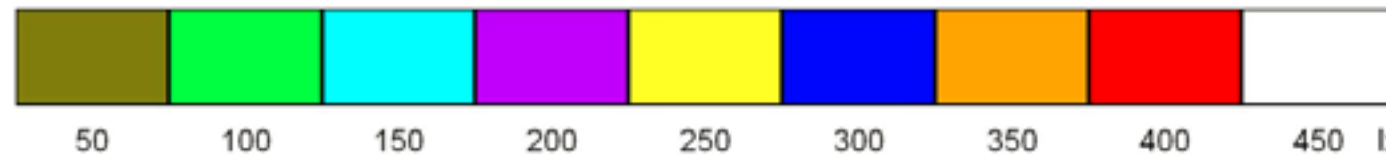
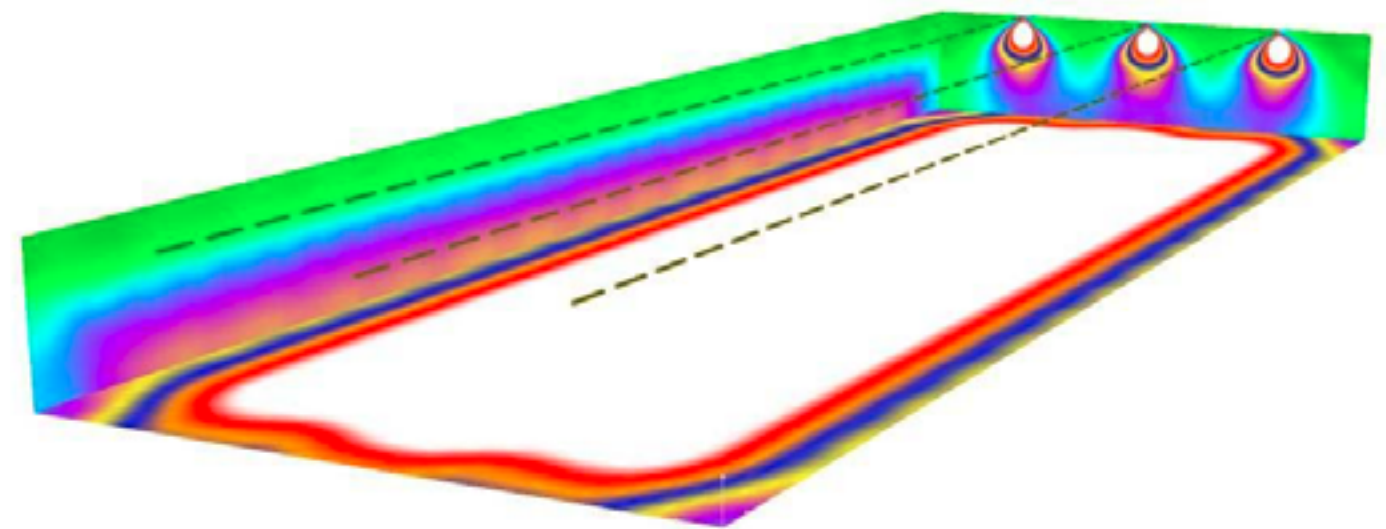


* The data is based on local salary in Shenzhen City, China.



Supermarket

Because of its wide area, the different heights for shelves, the aim of showing goods well and the crowded environment, there are a lot of special requirements for led light in supermarket. Perfect light density will enhance the desire of purchasing. LED Linear Trunking System creates good purchasing environment with different beam angle while it helps to save cost.



Height of Room: 6.000 m, Mounting Height: 4.000 m, Light loss factor: 0.80

Values in Lux, Scale 1:374

Surface	ρ [%]	Eav[lx]	Emin[lx]	Emax[lx]	u0
Workplane	/	462	139	617	0.301
Floor	20	448	179	563	0.399
Ceiling	70	93	61	689	0.654
Walls(21)	50	162	76	814	/

Workplane:

Height: 0.800 m
 Grid: 128x 64 Points
 Boundary Zone: 0.000 m

Luminaire Parts List:

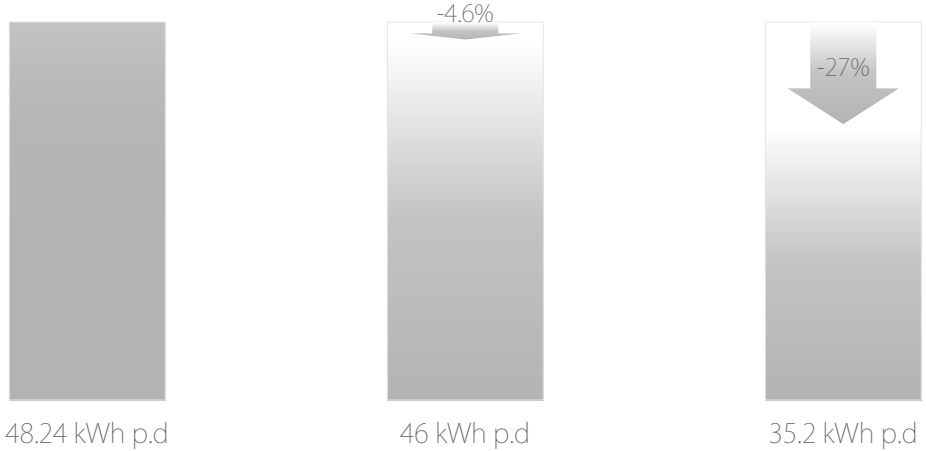
No.	Pieces		Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P[W]
1	83	LED LINEAR TRUNKING SYSTEM CCLS-C5FD40-5090 (1.000)	5444	5200	40.4
Total:			506263	483600	3757.2

Energy Saving Analysis

• Application:	Supermarket	• Luminaire:	CCLS-C5FD40-5090
• Area:	50.40 m*17.30 m	• Beam angle:	90 degree
• Lighting Height:	4 m	• Room Height:	6 m
• Maintenance factor:	0.80	• Number of Light:	83 pieces
• Illuminance:	at least 300 lux	• Function:	Emergency, DALI
• Gap of Shelves:	1.8 m		

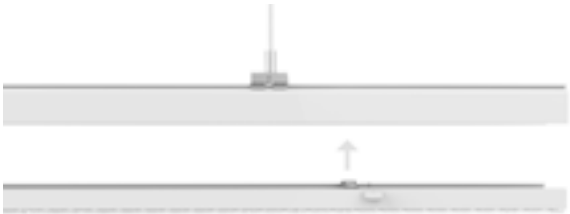
	LED T8 Tube Light	LED Tri-proof Light	C Line LED Linear Trunking System
Power of Luminaire(Watt)	36	50	40
Number of Light(Pieces)	134	92	83
Total Power Consumption(Watt)	4824	4600	3520
Total Lumens(Lm)	506263	506263	506263
Luminous Efficiency(lm/w)	105	110	145
Work Hours p.d.(Hours)	10	10	10
Kilowatt hours p.d(kWh)	48.24	46	35.2
Energy Saving cost p.d(\$)	\	2.24	13,04

How much energy cost saving ?



* The price of electricity is \$1/kWh as assumed.

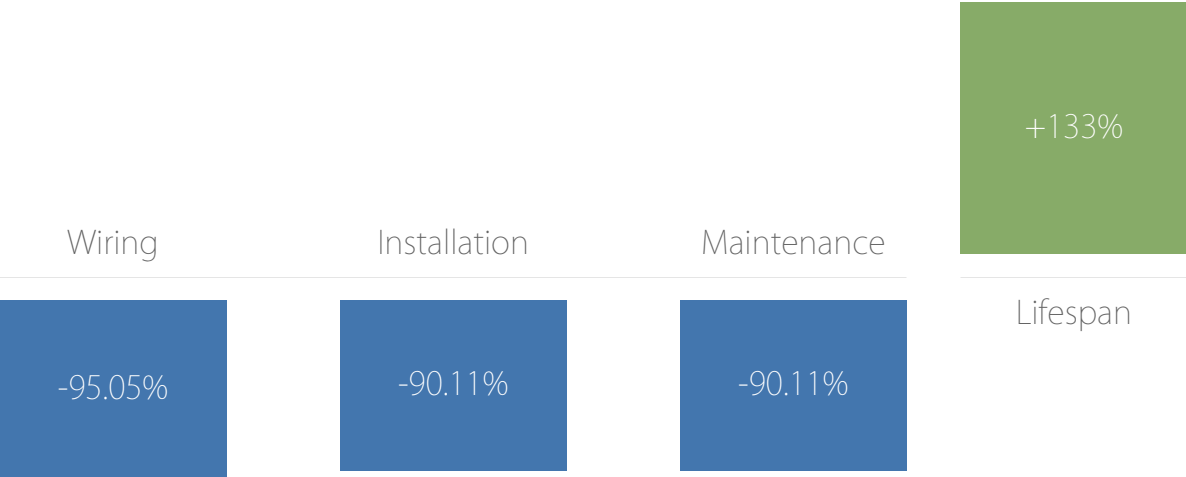
Labor Cost Saving Analysis



LED Linear Trunking System

- Pre-wired Trunking Railway reduces 95.05% of cost of wiring
- Flexible lock bar design saves 90.11% cost of installation
- Modularized design reduces 90.11% maintenance labor cost
- High quality module expands 133% lifespan
- TUV, GS and RCM certificate, 7 years guarantee

How much labor cost saving ?

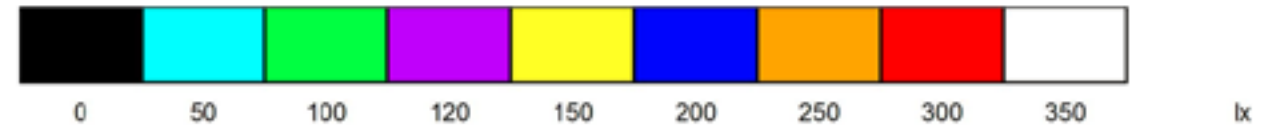
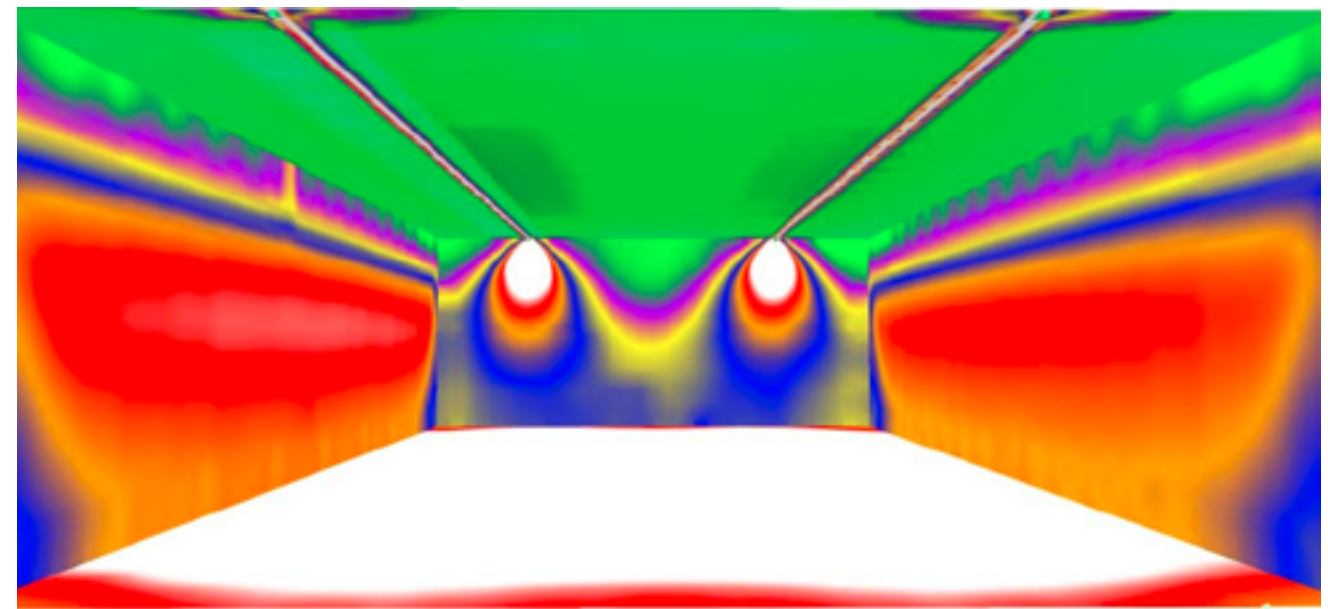


* The data is based on local salary in Shenzhen City, China.



Workshop

Working environment has great impact on workers' work efficiency. And, lighting places important role in creating enthusiastic working environment. Different workshops have different temperature and humidity range. It requires high quality to support the operation. LED Linear Trunking System is applied to $-20^{\circ}\text{C}\sim 65^{\circ}\text{C}$ working temperature and $-40^{\circ}\text{C}\sim 85^{\circ}\text{C}$ storage temperature because of high quality and good heat dissipation. The lifespan of Linear Light is more than 50,000 hours.



Height of Room: 6.00 m, Mounting Height: 6.00 m, Light loss factor: 0.65

Values in Lux, Scale 1:500

Surface	ρ [%]	Eav[lx]	Emin[lx]	Emax[lx]	u0
Workplane	/	454	255	536	0.561
Floor	20	435	253	499	0.582
Ceiling	70	104	72	843	0.690
Walls(21)	50	225	91	829	/

Workplane:

Height: 0.850 m
 Grid: 128x 64 Points
 Boundary Zone: 0.000 m

Luminaire Parts List:

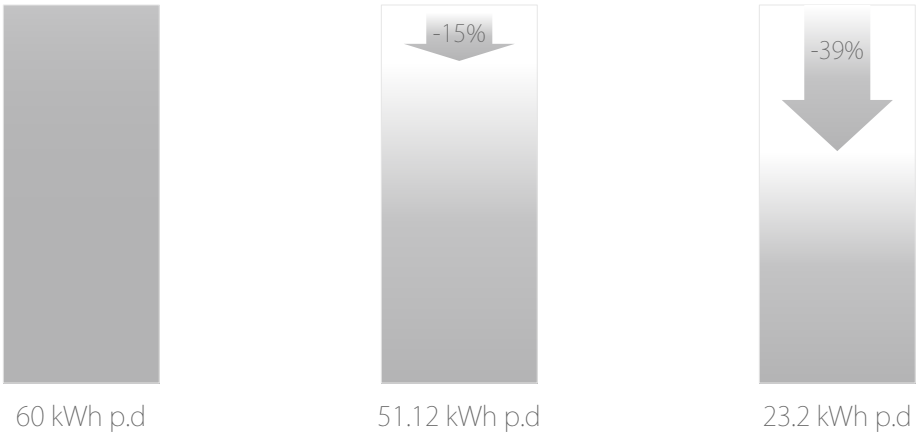
No.	Pieces		Φ (Luminaire) [lm]	Φ (Lamps) [lm]	P[W]
1	45	LED LINEAR TRUNKING SYSTEM CCLS-C5FS80-6560 (1.000)	8672	11658	80.4
Total:			537677	523900	1206

Energy Saving Analysis

• Application:	Workshop	• Luminaire:	CCLS-C5FS80-6560
• Area:	45.00 m*15.00 m	• Beam angle:	60 degree
• Lighting Height:	6 m	• Room Height:	6.00 m
• Maintenance factor:	0.65	• Number of Light:	62 pieces
• Illuminance:	at least 400 lux	• Function:	0-10V, DALI
• Gap of Shelves:	2.0 m		

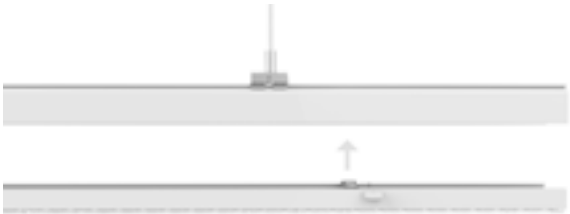
	LED High Bay	LED T8 Tube Light	C Line LED Linear Trunking System
Power of Luminaire(Watt)	400	36	80
Number of Light(Pieces)	15	142	46
Total Power Consumption(Watt)	6000	5112	3680
Total Lumens(Lm)	537677	537677	537677
Luminous Efficiency(lm/w)	90	105	145
Work Hours p.d.(Hours)	10	10	10
Kilowatt hours p.d(kWh)	60	51.12	36.8
Energy Saving cost p.d(\$)	\	8.88	23.2

How much energy cost saving ?



* The price of electricity is \$1/kWh as assumed.

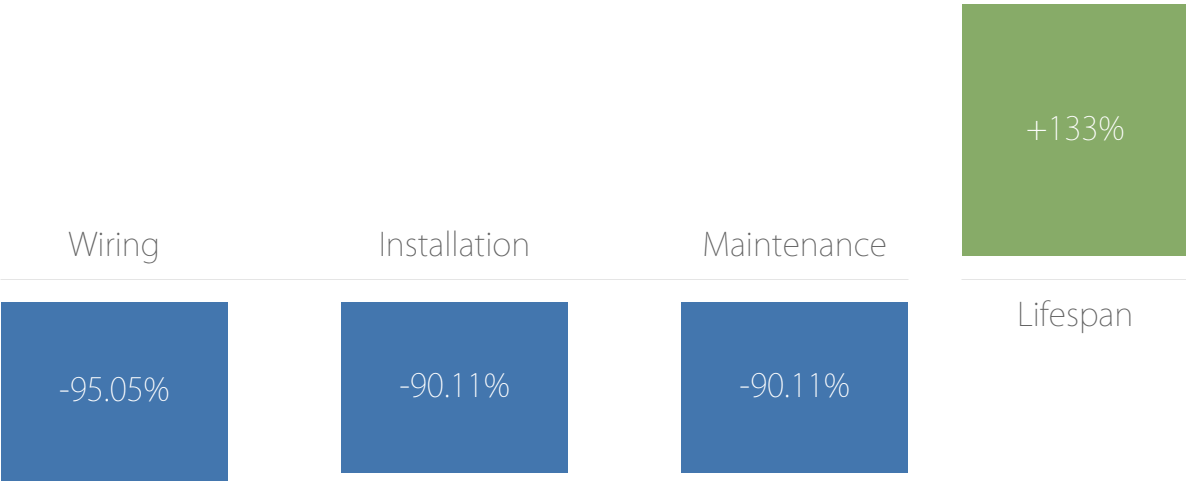
Labor Cost Saving Analysis



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- High quality module expands lifespan 133%
- TUV, GS and RCM certificate, 7 years guarantee

How much labor cost saving ?



* The data is based on local salary in Shenzhen City, China.

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