

LED Cooler Lighting 2017/2018



SELF

Think Life Enjoy Light





1993-2017

The story of Three Pine Trees

In the west of the SELF new plant standing three pines: "We, plain but of a unique style, remain calm and not disturbed after the relocation. We, together with SELF people, witness the transformation after the raging storms!"

In 1997, Ningbo was attacked by disastrous typhoon, and then SELF employees protected the growing spines by steel bed. The same year, SELF suffered "TüV Incident", in a pinch, it was the philosophy "be a good SELF employee before doing something" leading us out of trouble and winning good reputation on the market.

SELF has been relocated three times since 1993, during the time the three pines have grown into towering trees. The character of "people" in Chinese means supporting each other, means weathering the storm together. "Cold and heat cannot shale our faith, time and tide cannot defeat us", this is the quality of both pine trees and SELF Electronics. Although the market is unpredictable, the difficulties happened to us again and again, we will never stop chasing a brilliant future.....

About us



SELF Electronics Manufacture Base (Ningbo, China)



SELF Electronics USA Corporation (Atlanta GA, United States)



SELF Electronics Germany GmbH (Cologne, Germany)



SELF is a technical and quality-oriented specialist in commercial LED lighting innovation, design and production for global retail market. With our well-experienced engineering team, we always focus on the latest technical, material and technology developments.

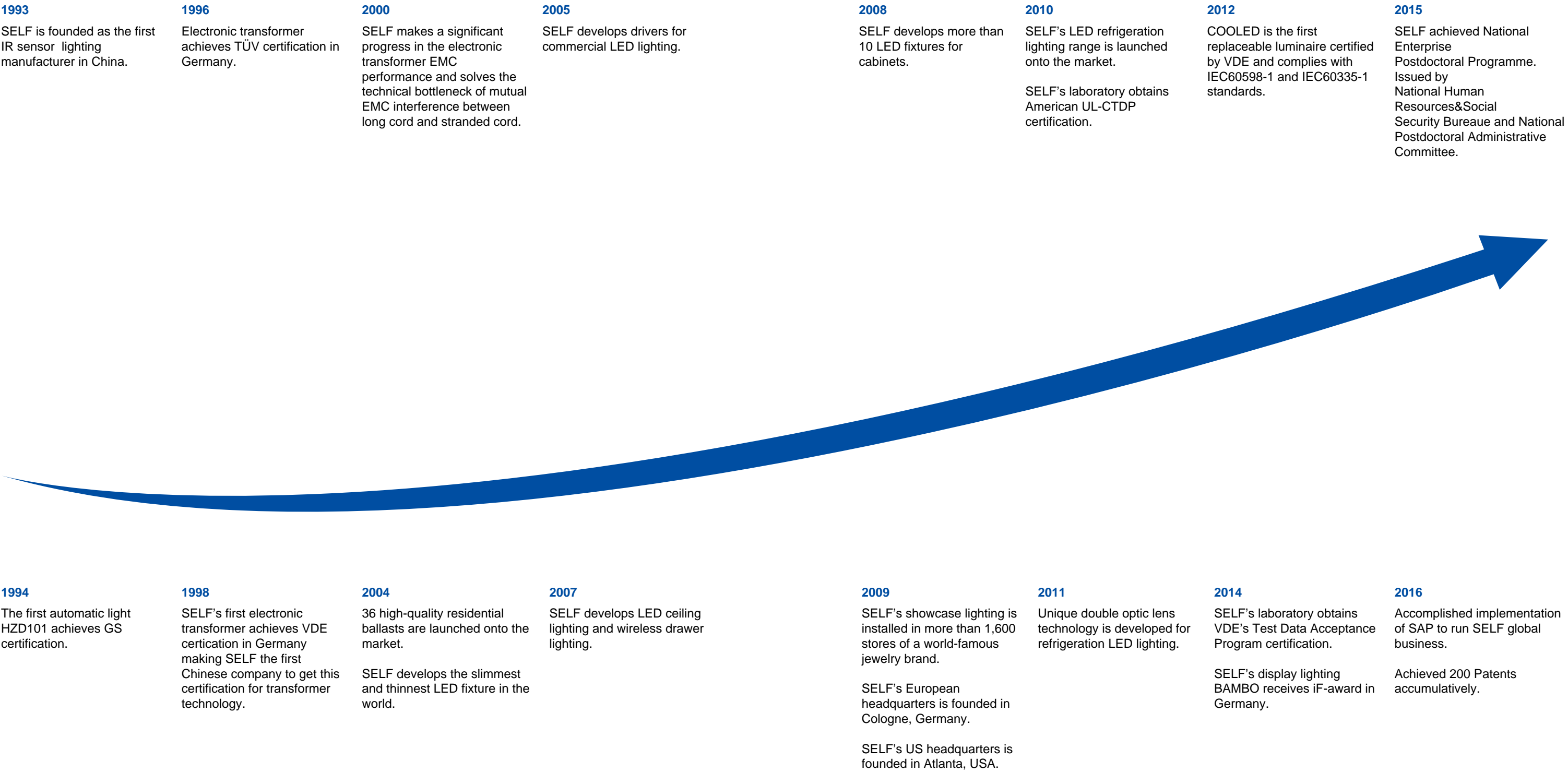
Time goes by and stores frequently change their appearance. From Cologne, we provide you with LED lighting solutions for the following segments.

- Cooler lighting
- Linear lighting
- Showcase lighting
- Trunk lighting
- Track lighting
- Recessed lighting

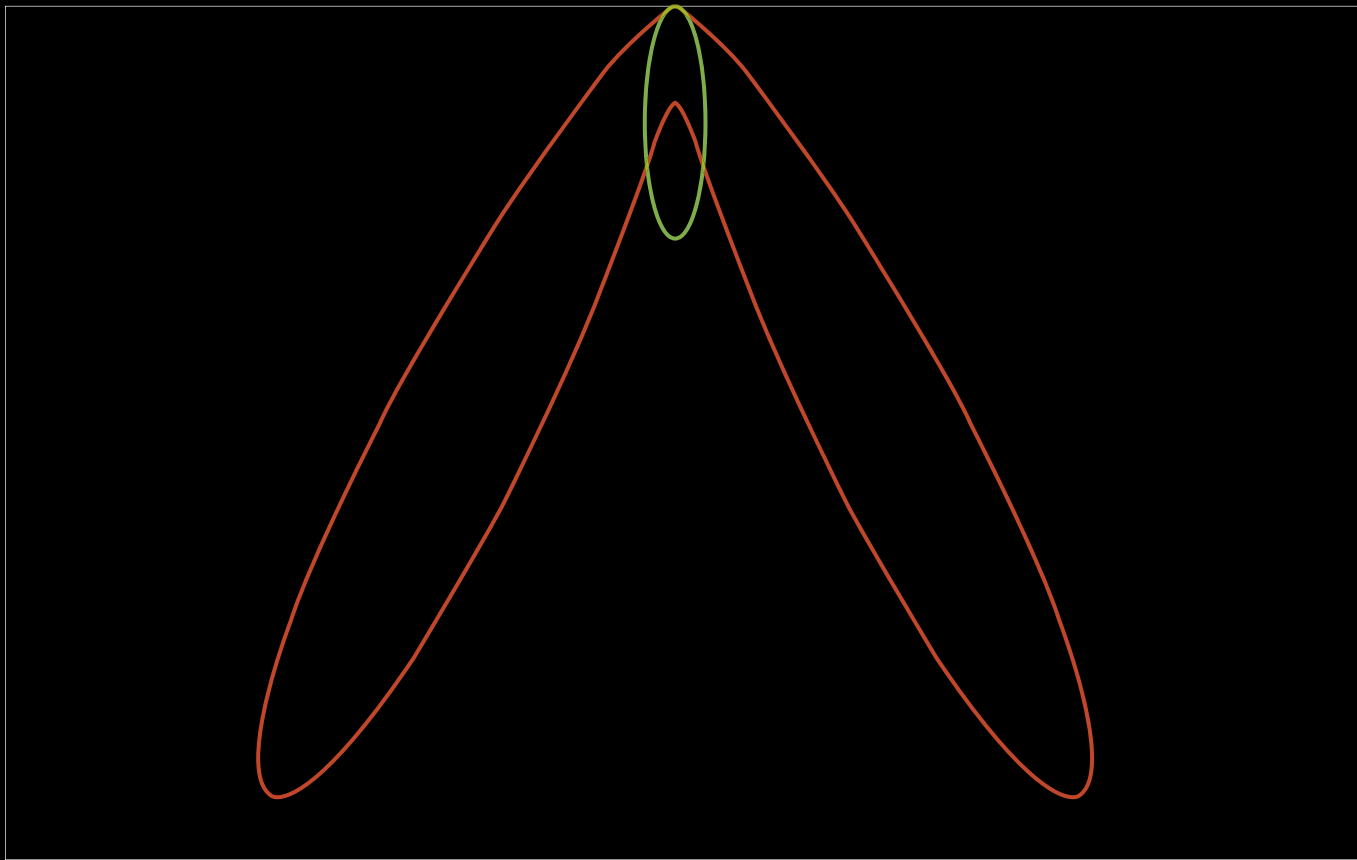
The headquarters of SELF, founded in 1993, is located in Ningbo, China. With a professional R&D team, an advanced testing laboratory center and 58,000m2 production area, SELF is well known as a National Norms Editor, for its publication of the Light Emitting Diode(LED) Lighting Fixture for Architectural Indoor Use(China)and as a, VDE TDAP (Europe) & UL CTD holder (North America) in lighting industries.

Combining our extensive knowledge of LED technology and creative design philosophy, as the perfect solution provider, SELF brings professional illumination into your world.

Road of innovation

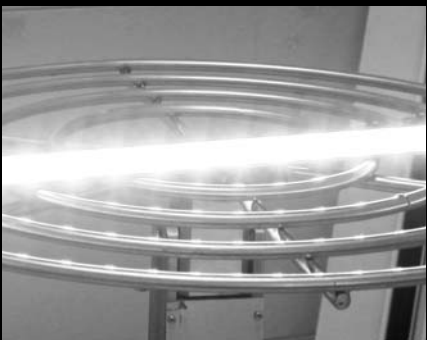
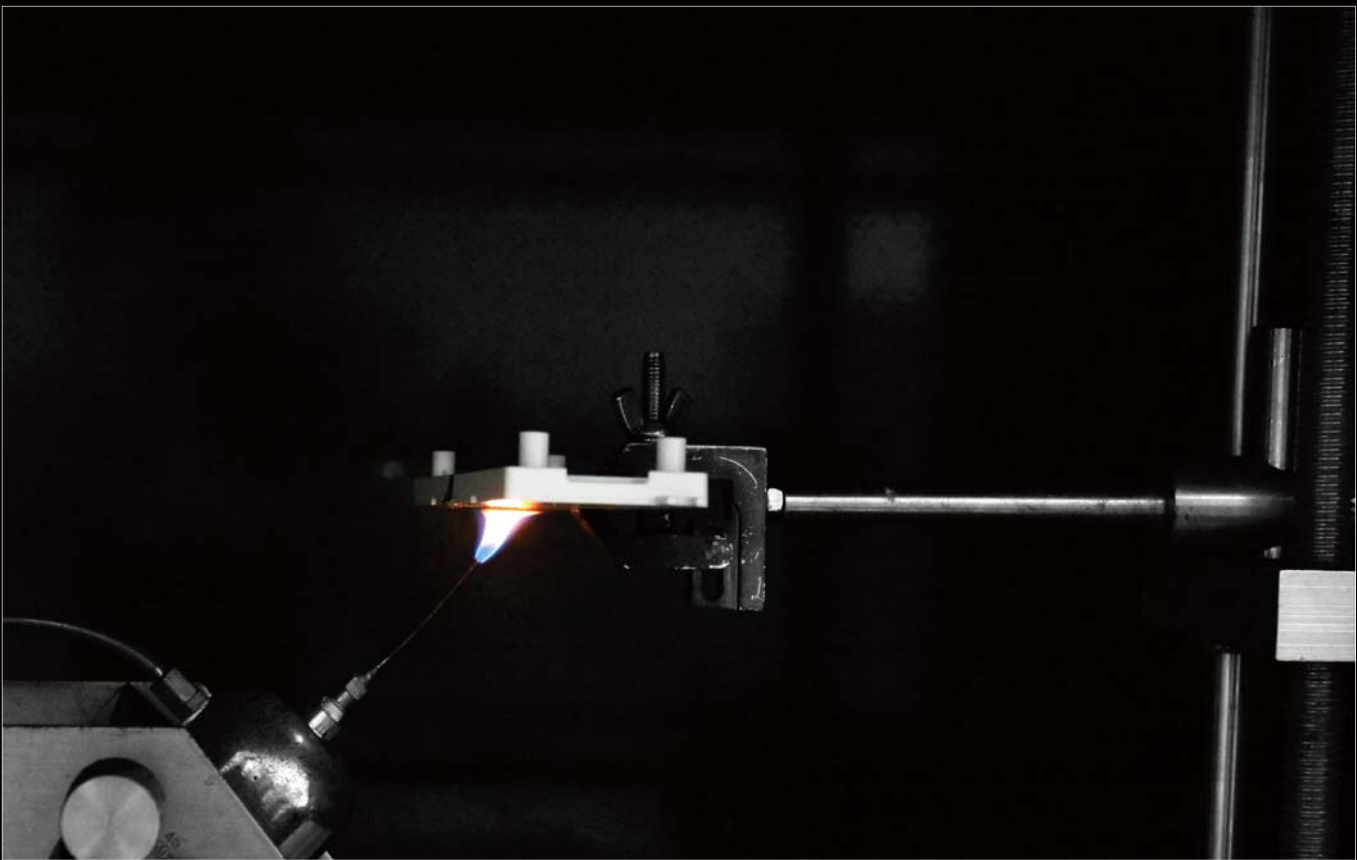


Core competence



Research and development

With a development team of electronic, mechanical, optical, thermal etc engineers, SELF is a company with independent development and design capabilities.

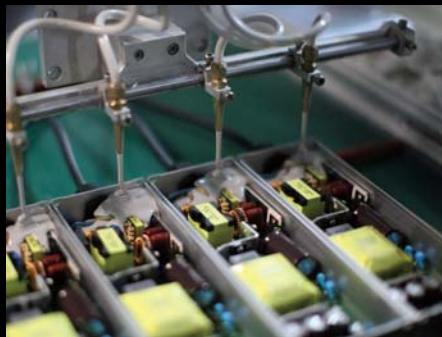
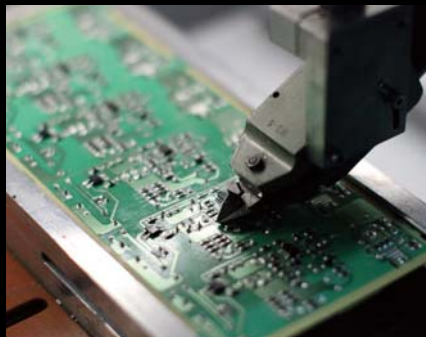
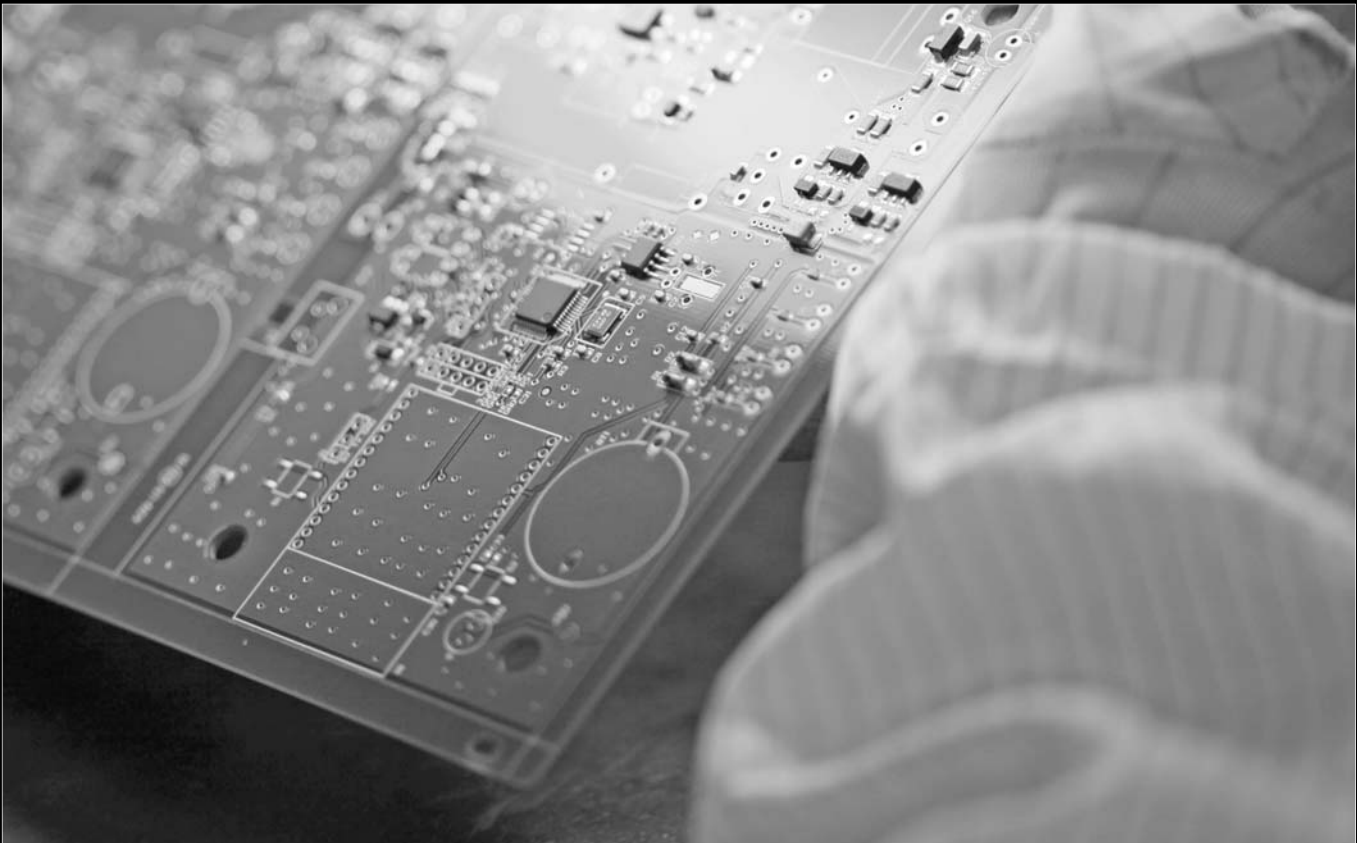
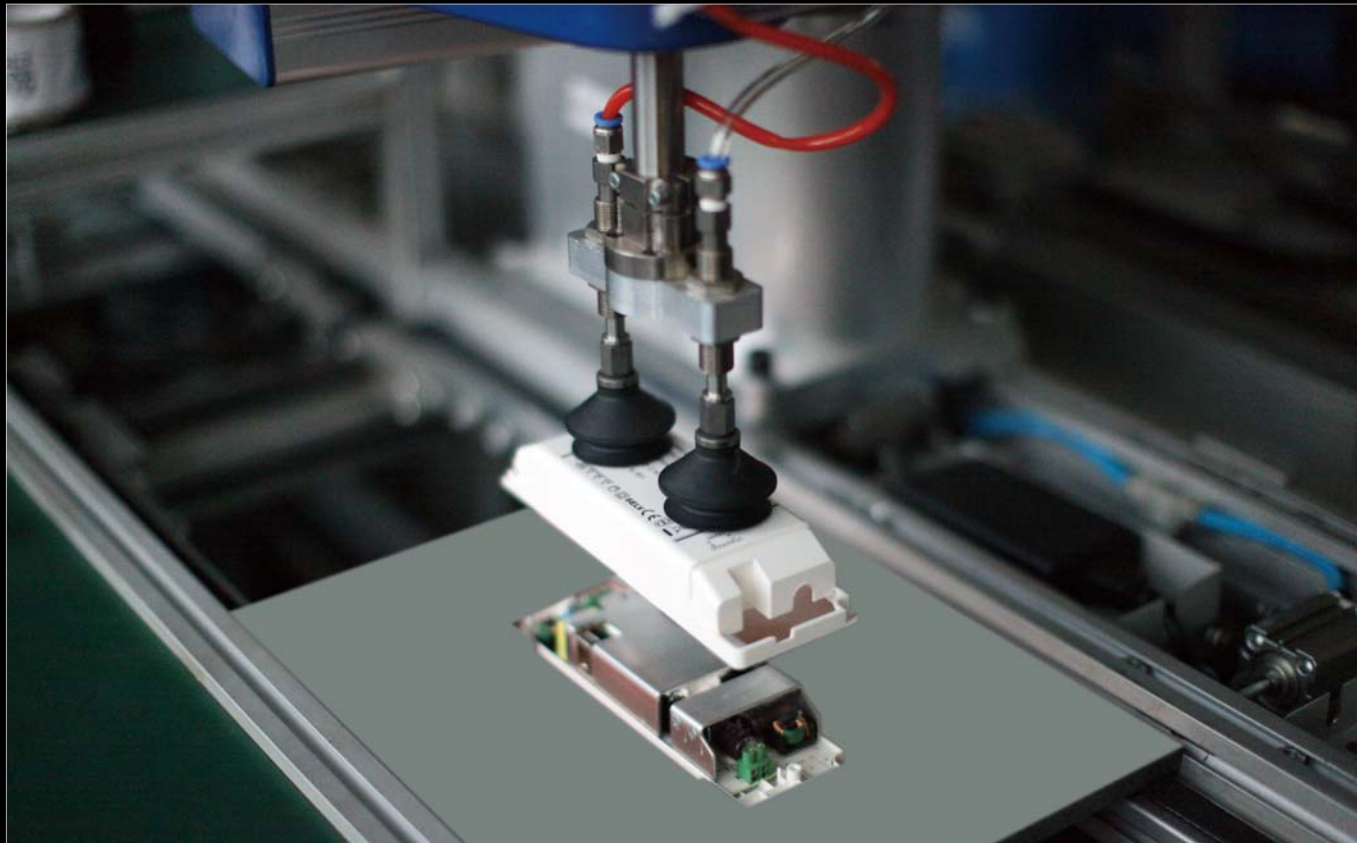


Testing facilities

SELF's testing facility resources include a talented staff of senior testing engineers as well as advanced testing equipment. SELF uses its state-of-the-art testing facilities to ensure products comply with international standards. SELF's testing laboratory is approved by UL as a CTDP (Client Test Data Program) laboratory for both LED power supply and LED lighting fixtures, and the laboratory has also been authorized to be the VDE TDAP (Test Data Acceptance Program) by Underwriters Laboratories Inc.



Core competence



Production management

With a factory floor area of more than 58,000 m2, SELF has the latest technology assembly lines, large-scale production capability, and advanced production equipments. ERP systems manage orders from placement to fulfillment, ensuring prompt production and delivery.



Quality

The SELF Quality Control department strives to maintain the highest level of production by performing 100% on-line inspections.

Cooler lighting



FRI03, MULTIFRIO

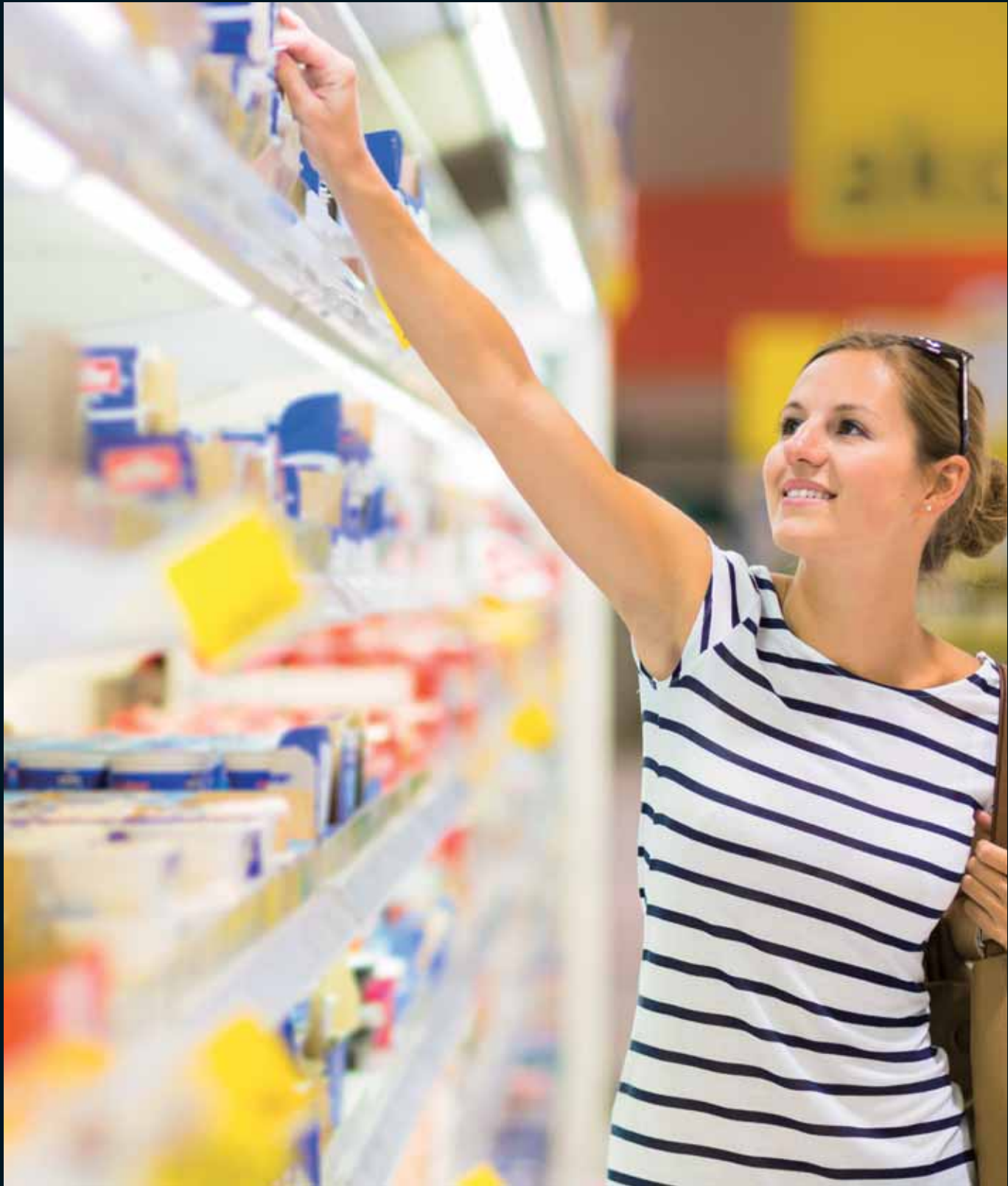


FRI03, FROST, MULTIFRIO

Cooler lighting



MULTIFRIO



FROST, COOSCH, MULTIFRIO

Cooler lighting
FRIO3 / FROST / COOSCH (Upgraded)



20%

power consumption
lower than before at
original CCT

High CRI release

Ra>90

Cooler lighting



Cooler lighting
FRIO3



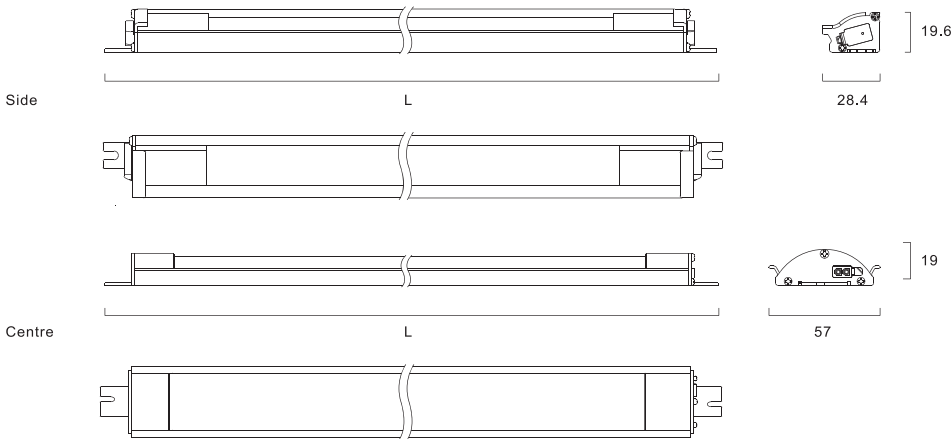
Cooler lighting
FRIO3



- Housing: Extrusion aluminum oxidized.
- Lens: Injection plastic.
- Cover: Extrusion plastic.
- LED parts: The highest efficacy chips, non-replaceable.
- CRI min.: 80/90.
- Chromaticity tolerance (initial MacAdam): 3 SDCM.
- Lifetime: 50,000 hrs (L80, B20, Ta = 25°C, 12 hrs/Day).
- Heat management: Passive.
- Input voltage: 24 VDC.
- N.W. : Side(410g 490g 580g) Centre(820g 980g 1160g).
- Ta: -30~35°C.
- Impact resistance: IK02.
- Protection class: IP44.



Dimensions: (mm)



Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. Linkable (PCS) ⁽⁴⁾
	1030-142105-0130	FRIO3-L42-24V	7.4	80	3000	75°	690	93	1200	-
	1030-142005-0130				4000		760	103		
	1030-142005-0131				5000		760	103		
	1030-142205-0130		9.3	80	076	75°	570	60		
	1030-142105-0132		9.3	90	3000	75°	580	62		
	1030-142005-0133				4000		640	69		
	1030-142005-0134				5000		680	73		
	1030-148154-0130	FRIO3-L48-24V	8.8	80	3000	75°	790	90	1480	-
	1030-148054-0130				4000		870	99		
	1030-148054-0131				5000		870	99		
	1030-148254-0130		11	80	076	75°	650	56		
	1030-148157-0131		11	90	3000	75°	670	61		
	1030-148057-0132				4000		740	67		
	1030-148057-0133				5000		770	70		

Cooler lighting
FRIO3

Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. Linkable (PCS) ⁽⁴⁾
	1030-160118-0130	FRIO3-L60-24V	11.2	80	3000	75°	990	88	1700	-
	1030-160018-0130				4000		1100	98		
	1030-160018-0131				5000		1100	98		
	1030-160218-0130		14	80	076	75°	800	57		
	1030-160118-0131		14	90	3000	75°	830	59		
	1030-160018-0132				4000		920	66		
	1030-160018-0133				5000		960	69		
	1030-184107-0130	FRIO3-L84-24V-1	15.2	80	3000	75°	1400	92	1200	-
	1030-184007-0130				4000		1500	99		
	1030-184007-0131				5000		1500	99		
	1030-184207-0130		19	80	076	75°	1200	63		
	1030-184107-0132		19	90	3000	75°	1200	63		
	1030-184007-0133				4000		1300	68		
	1030-184007-0134				5000		1300	68		
	1030-196112-0130	FRIO3-L96-24V-1	17.6	80	3000	75°	1600	91	1480	-
	1030-196012-0130				4000		1700	97		
	1030-196012-0131				5000		1700	97		
	1030-196212-0130		22	80	076	75°	1300	59		
	1030-196112-0133		22	90	3000	75°	1300	59		
	1030-196012-0133				4000		1500	68		
	1030-196012-0134				5000		1500	68		
	1030-100158-0130	FRIO3-L120-24V-1	21.6	80	3000	75°	2000	93	1700	-
	1030-100058-0130				4000		2200	102		
	1030-100058-0131				5000		2200	102		
	1030-100258-0130		27	80	076	75°	1600	59		
	1030-100158-0131		27	90	3000	75°	1700	63		
	1030-100058-0132				4000		1800	67		
	1030-100058-0133				5000		1900	70		

[1]: The minimum power is 86% of typical values.
[2]: CCT 076: The color temperature is applied to red meat and red fish.
[3]: The minimum flux is 83% of typical values.
[4]: Based on: grand total of luminaires Power should not exceed 80% of rated power output of LED power supply.
FRIO3 series also including:
* models above only are available upon orders, please contact sales for more information
side / 900mm(6.9W) centre / 900mm(14W).

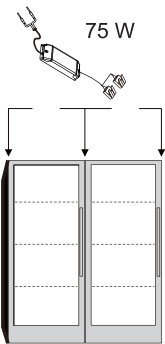
Cooler lighting
FRIO3

Lamp configuration table

L: mm (length)		1200	1480	1700
2-door	Center	1	1	1
	Both sides	2	2	2
	LED drivers	1	1	1
3-door	Center	2	2	2
	Both sides	2	2	2
	LED drivers	1	2	2
4-door	Center	3	3	3
	Both sides	2	2	2
	LED drivers	2	2	2
5-door	Center	4	4	4
	Both sides	2	2	2
	LED drivers	2	2	3
6-door	Center	5	5	5
	Both sides	2	2	2
	LED drivers	3	3	4

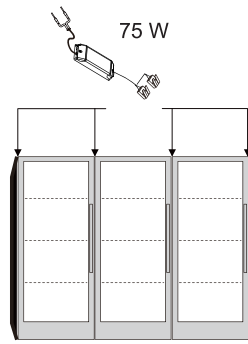
2-door

LED lights

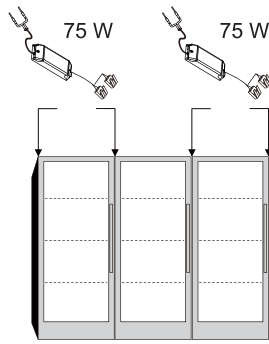


3-door

For 1200 mm
LED lights.



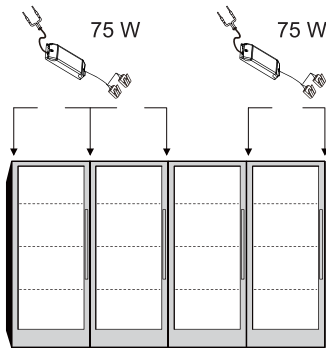
For 1480 mm,1700 mm
LED lights.



Cooler lighting
FRIO3

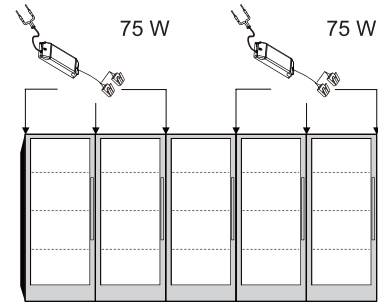
4-door

For 1200 mm,1480 mm,1700 mm
LED lights.

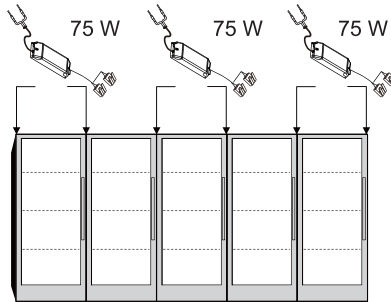


5-door

For 1200 mm, 1480 mm
LED lights.

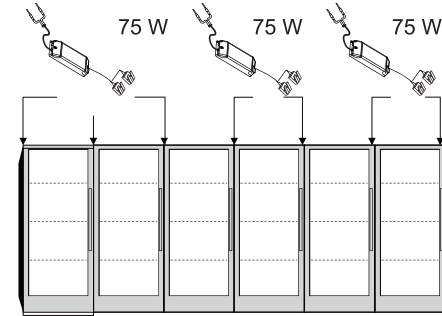


For 1700 mm
LED lights.

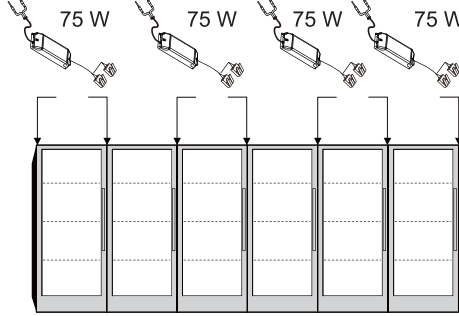


6-door

For 1200 mm,1480 mm
LED lights.

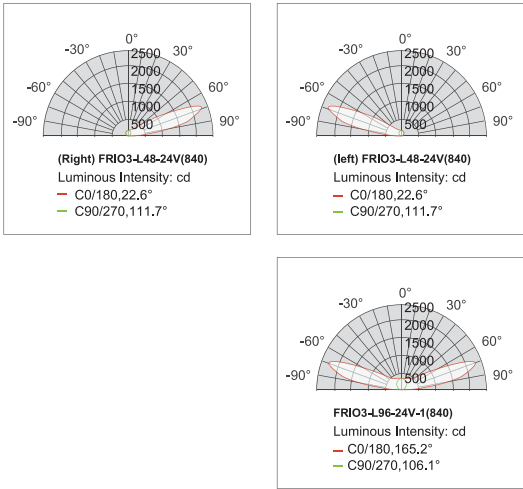


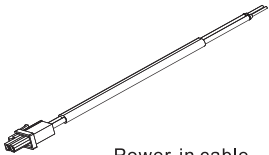
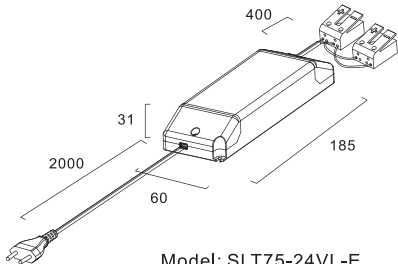
For 1700 mm
LED lights.



Cooler lighting
FRIO3

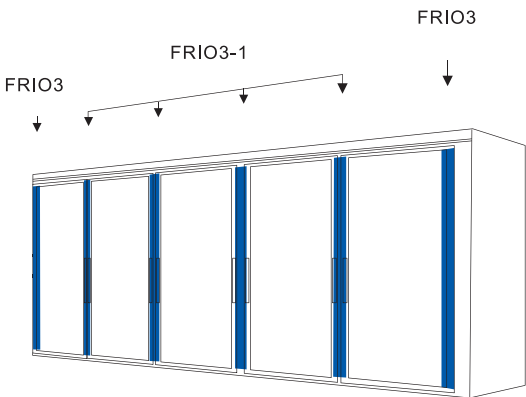
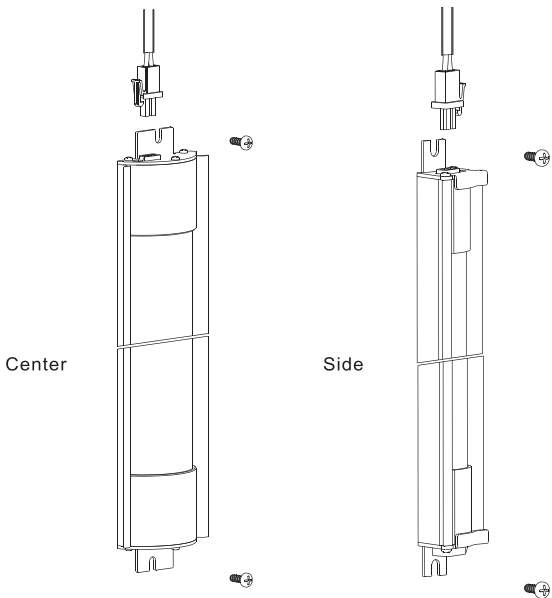
Photometrics



Accessories(optional)	Order No.	Description	Length (mm)	N.W. (g)
	1099-013705-0130	 Power-in cable x 2	1500	60
	1001-260021-0133	 Model: SLT75-24VL-E Matching driver, max. 75 W. Input: 220 - 240 VAC, 2000 mm cable + plug Output: 24 V, 400 mm cable + 2*DSG plug		

Cooler lighting
FRIO3

Installation



Cooler lighting **FROST**



Cooler lighting

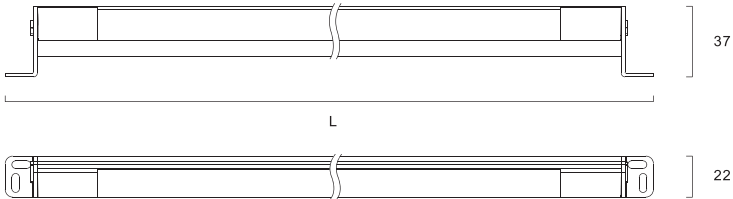
FROST



- Housing: Extrusion aluminum oxidized.
- Lens: Injection plastic.
- Cover: Extrusion plastic.
- LED parts: The highest efficacy chips, non-replaceable.
- CRI min.: 80/90.
- Chromaticity tolerance (initial MacAdam): 3 SDCM.
- Lifetime: 50,000 hrs (L80, B20, Ta = 25°C, 12hrs/day).
- Heat management: Passive.
- Input voltage: 24VDC.
- N.W. : 388/540 g.
- Ta: -30~35°C.
- Impact resistance: IK02.
- Protection class: IP44.



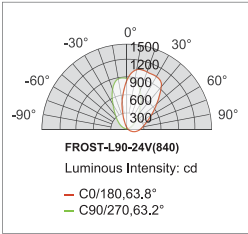
Dimensions: (mm)



Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. linkable (PCS) ⁽⁴⁾
	1030-160121-0130	FROST-L60-24V	10.4	80	3000	65°	960	92	850	4
	1030-160021-0130				4000		1100	106		
	1030-160021-0131				5000		1100	106		
	1030-160221-0130		13	80	076	65°	780	60		
	1030-160121-0133		13	90	3000	65°	890	68		
	1030-160021-0134				4000		980	75		
	1030-160021-0135				5000		1000	77		
	1030-190112-0130	FROST-L90-24V			16		80	3000	65°	1400
	1030-190012-0130		4000	1600		100				
	1030-190012-0131		5000	1600		100				
	1030-190212-0130		20	80	076	65°	1200	60	1200	3
	1030-190112-0133		20	90	3000	65°	1300	65		
	1030-190012-0134				4000		1500	75		
	1030-190012-0135				5000		1500	75		



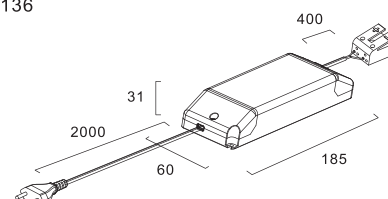
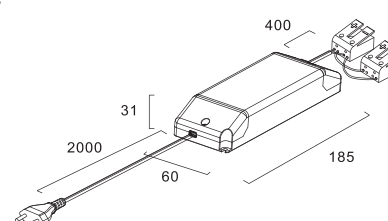
[1]: The minimum power is 85% of typical values.
[2]: CCT 076: The color temperature is applied to red meat and red fish.
[3]: The minimum flux is 80% of typical values.
[4]: Based on: grand total of luminaires Power should not exceed 80% of rated power output of LED power supply.
FROST series also including: 300mm(3.3W) 600mm(8.7W) 980mm(16W) 1500mm(24W)
* models above only are available upon orders, please contact sales for more information

Photometrics

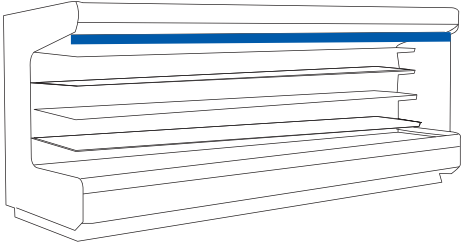


Cooler lighting

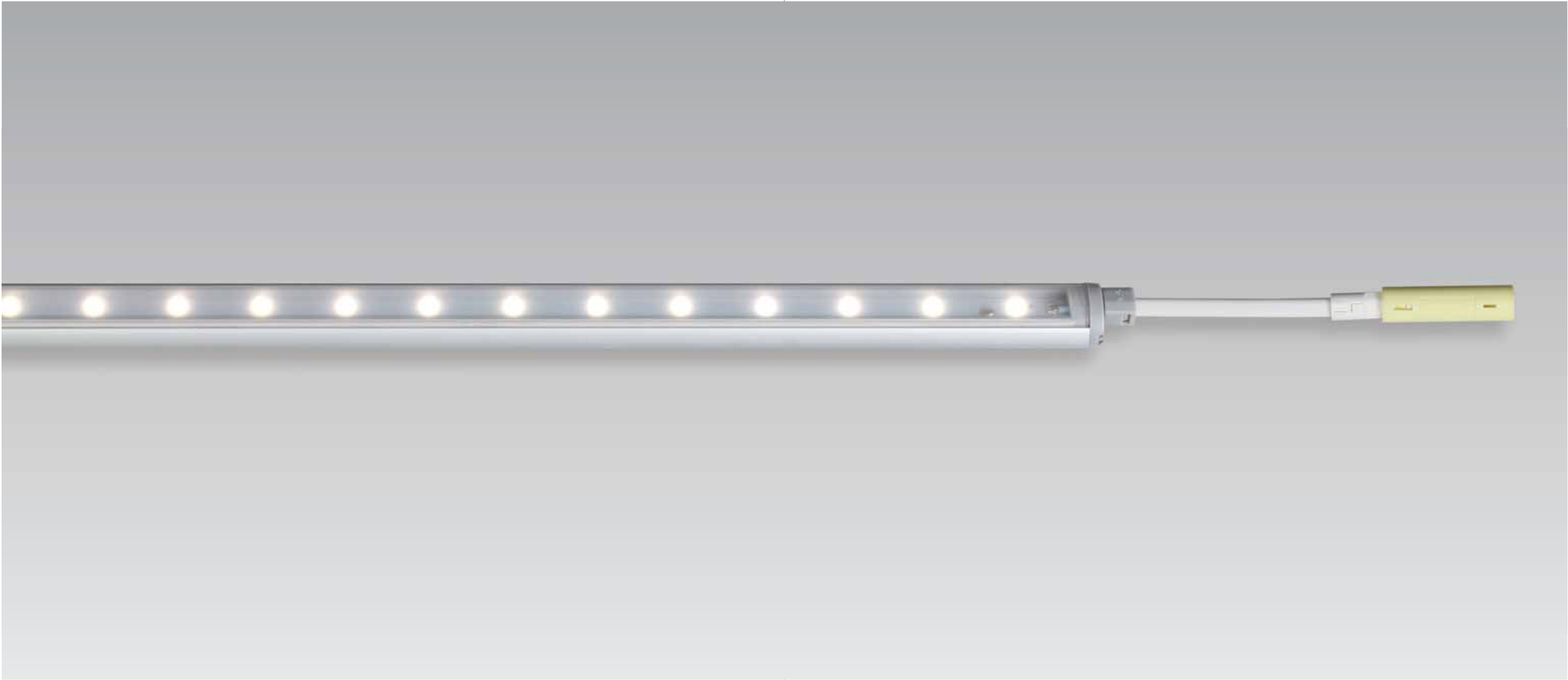
FROST

Accessories (optional)	Order No.	Description	Length (mm)	N.W. (g)
	1099-013651-0130	 Soft connector x 1	310	14
	1099-013705-0130	 Power-in cable x 1	2500	30
	1001-260021-0136	 Model: SLT75-24VL-E Matching driver, max. 75 W. Input: 220 - 240 VAC, 2000 mm cable + plug Output: 24 V, 400 mm cable + 1*DSG plug		
	1001-260021-0133	 Model: SLT75-24VL-E Matching driver, max. 75 W. Input: 220 - 240 VAC, 2000 mm cable + plug Output: 24V, 400 mm cable + 2*DSG plug		

Installation



Cooler lighting
COOSCH



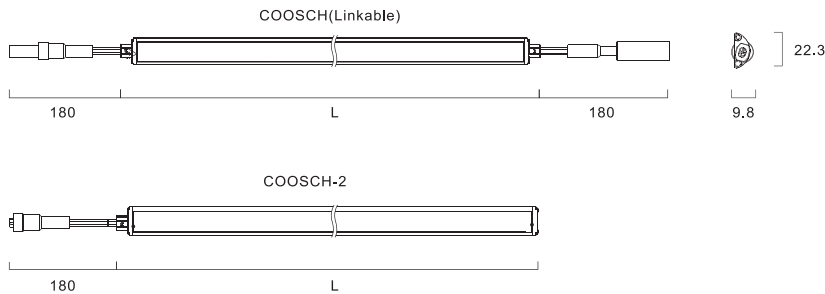
Cooler lighting



- Housing: Extrusion aluminum oxidized.
- Optical cover: Extrusion plastic.
- LED parts: The highest efficacy chips, non-replaceable.
- CRI min.: 80/90.
- Chromaticity tolerance (initial MacAdam): 3 SDCM.
- Lifetime: 50,000 hrs (L80, B20, Ta = 25°C, 12 hrs/day).
- Heat management: Passive.
- Input voltage: 24 VDC.
- N.W. : 173/285/380/168/280/375 g.
- Ta: -30~35°C.
- Impact resistance: IK04.
- Protection class: IP64.



Dimensions: (mm)



Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. linkable (PCS) ⁽⁴⁾
	1030-124193-0130	COOSCH-L24-24V	4.5	80	3000	110°	490	109	580	8
	1030-124093-0130				4000		540	120		
	1030-124093-0131				5000		540	120		
	1030-124293-0130		5.6	80	076	110°	440	98		
	1030-124193-0131		5.6	90	3000	110°	450	80		
	1030-124093-0133				4000		500	89		
	1030-124093-0134				5000		520	93		
	1030-336115-0130	COOSCH-L36-24V	6.7	80	3000	110°	730	109	912	5
	1030-336015-0130				4000		800	119		
	1030-336015-0132				5000		800	119		
	1030-336215-0130		8.4	80	076	110°	600	71		
	1030-336115-0132		8.4	90	3000	110°	680	81		
	1030-336015-0133				4000		750	89		
	1030-336015-0134				5000		780	93		
	1030-148121-0130	COOSCH-L48-24V	8.8	80	3000	110°	970	110	1180	4
	1030-148021-0133				4000		1100	125		
	1030-148052-0130				5000		1100	125		
	1030-148221-0130		11	80	076	110°	800	73		
	1030-148152-0130		11	90	3000	110°	900	82		
	1030-148052-0131				4000		1000	91		
	1030-148052-0132				5000		1000	91		

Cooler lighting

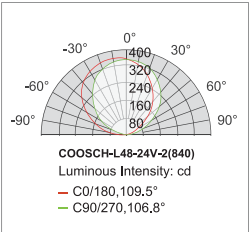
Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. linkable (PCS) ⁽⁴⁾
	1030-124198-0132	COOSCH-L24-24V-2			3000		490	109	571	-
	1030-124098-0133		4.5	80	4000	110°	540	120		
	1030-124098-0134				5000		540	120		
	1030-124298-0130		5.6	80	076	110°	400	71		
	1030-124198-0133				3000		450	80		
	1030-124098-0135		5.6	90	4000	110°	500	89		
	1030-124098-0136				5000		520	93		
	1030-336126-0132	COOSCH-L36-24V-2			3000		730	109	903	-
	1030-336026-0133		6.7	80	4000	110°	800	119		
	1030-336026-0134				5000		800	119		
	1030-336226-0131		8.4	80	076	110°	600	71		
	1030-336126-0133				3000		680	81		
	1030-336026-0135		8.4	90	4000	110°	750	89		
	1030-336026-0136				5000		780	93		
	1030-148164-0132	COOSCH-L48-24V-2			3000		970	110	1171	-
	1030-148064-0133		8.8	80	4000	110°	1100	125		
	1030-148064-0134				5000		1100	125		
	1030-148264-0131		11	80	076	110°	800	73		
	1030-148164-0133				3000		900	82		
	1030-148064-0135		11	90	4000	110°	1000	91		
	1030-148064-0136				5000		1000	91		

[1]: The minimum power is 85% of typical values.
 [2]: CCT 076: The color temperature is applied to red meat and red fish.
 [3]: The minimum flux is 80% of typical values.
 [4]: Based on: grand total of luminaires Power should not exceed 80% of rated power output of LED power supply


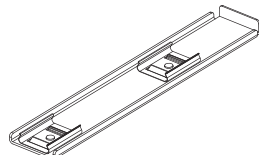
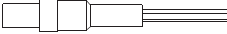
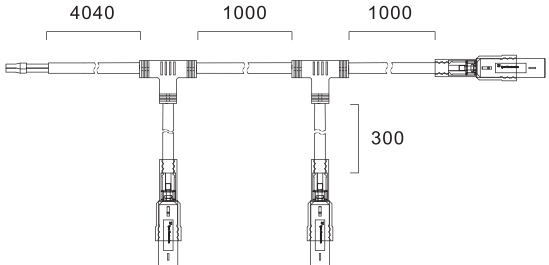
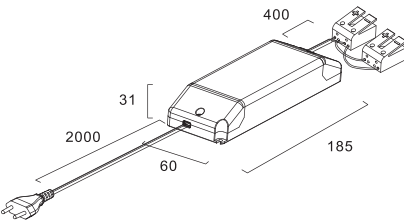
COOSCH series also including:

Linkable / 150mm(1.4W)	Single / 141mm(1.4W)
300mm(2.8W)	291mm(2.8W)
600mm(4.2W)	430mm(4.2W)
1500mm(14W)	1491mm(14W)

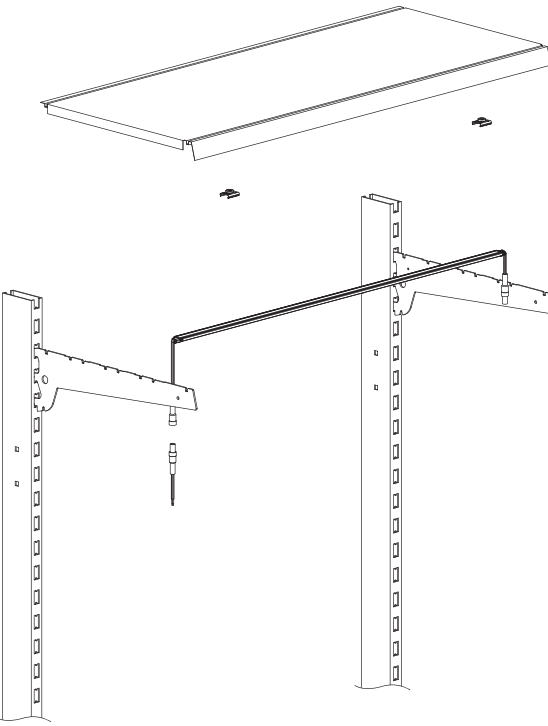
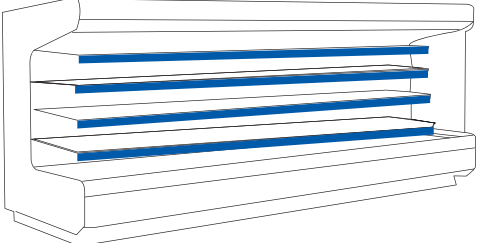
* models above only are available upon orders, please contact sales for more information



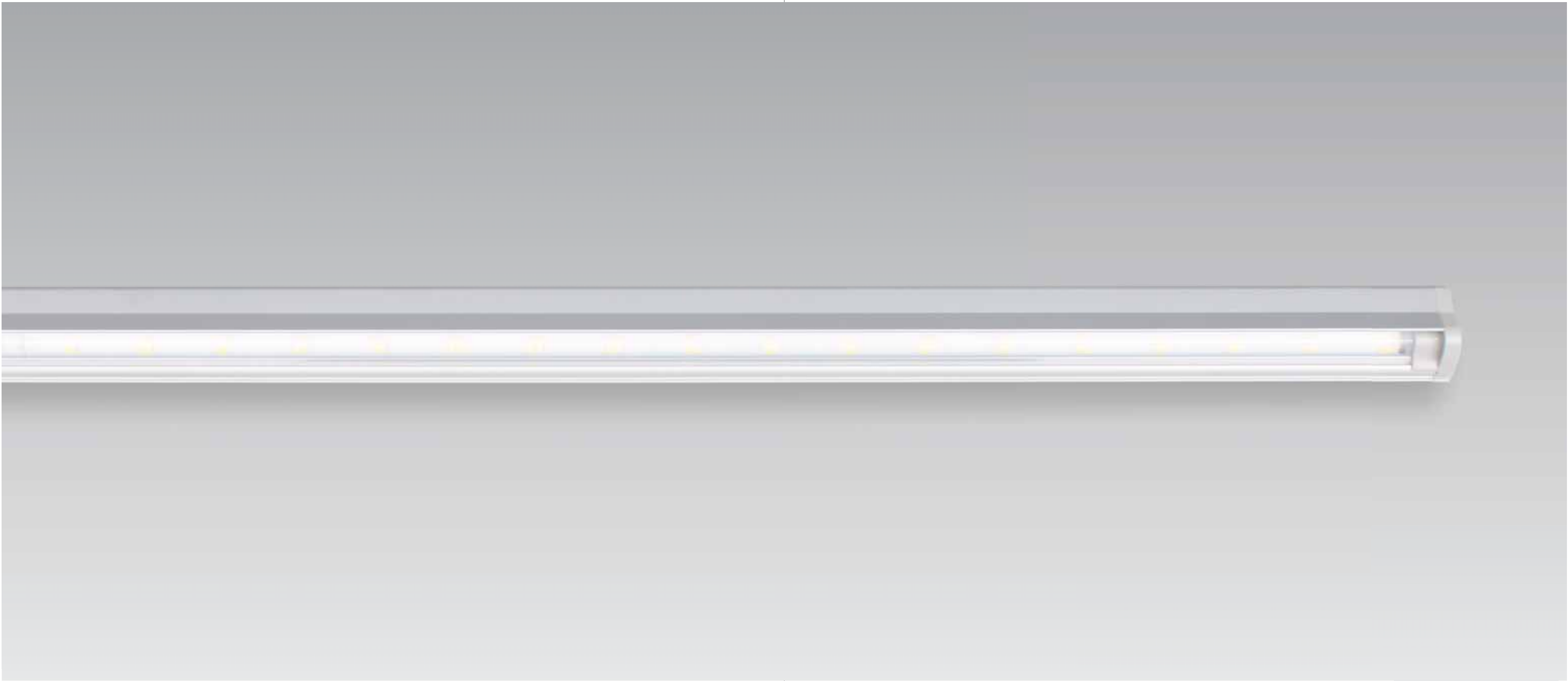
Cooler lighting
COOSCH

Accessories (optional)	Order No.	Description	Length (mm)	N.W. (g)
	1099-013662-0130	 Magnet mounting clip x 2	30	7
	1099-013662-0130	 Mounting brackets shelf arm x 2	-	100
	1099-013653-0133	 Input cable x 1	1500	55
	1099-013251-0132	 Tree input cable x 1	-	260
	1001-260021-0133	 Input cable x 1 Model: SLT75-24VL-E Matching driver, max. 75W. Input: 220-240VAC 2000mm cable +plug Output: 24V 400mm cable +2*DSG plug	-	-

Cooler lighting
COOSCH

Installation	Mounting clip shelf arm
	 

Cooler lighting
MULTIFRIO



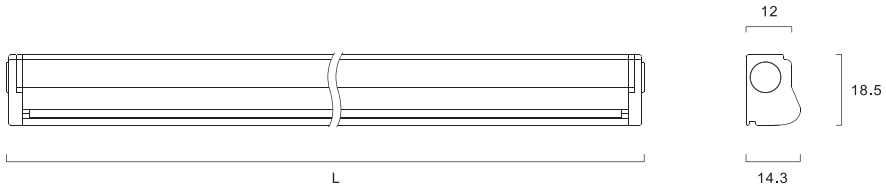
Cooler lighting
MULTIFRIO



- Housing: Extrusion aluminum oxidized.
- Optical cover: Extrusion plastic.
- LED parts: The highest efficacy chips, non-replaceable.
- CRI min.: 80/90.
- Chromaticity tolerance (initial MacAdam): 3 SDCM.
- Lifetime: 50,000 hrs (L80, B20, Ta = 25°C, 12 hrs/day).
- Heat management: Passive.
- Input voltage: 24VDC.
- N.W. : 70/145/210/290/420 g.
- Ta: -30~35°C.
- Impact resistance: IK02.
- Protection class: IP65.



Dimensions: (mm)



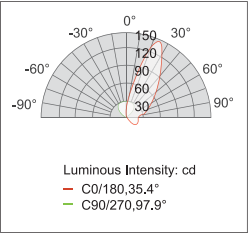
Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. linkable (PCS) ⁽⁴⁾
	1030-118148-0130	MULTIFRIO-L18-24V	3	80	3000	25°	300	100	300	14
	1030-118048-0130				4000		330	110		
	1030-118048-0132				5000		330	110		
	1030-118248-0130			076	190		63	300		
	1030-118148-0131			3000	210		70			
	1030-118048-0131	MULTIFRIO-L36-24V	6	90	4000	25°	230	77	600	7
	1030-118048-0133			5000	250		83			
	1030-136192-0130			80	3000		610	102		
	1030-136092-0130				4000		660	110		
	1030-136092-0132				5000		660	110		
	1030-136292-0130			076	380		63	600		
	1030-136192-0131	MULTIFRIO-L48-24V	8.5	80	3000	25°	430	72	850	5
	1030-136092-0131				4000		470	78		
	1030-136092-0133				5000		490	82		
	1030-148183-0130			90	3000		800	94		
	1030-148083-0130				4000		870	102		
	1030-148183-0132				5000		870	102		
	1030-148283-0130	MULTIFRIO-L72-24V	12	076	500	25°	59	850	1200	3
	1030-148183-0131			3000	560		66			
	1030-148083-0131			90	4000		73			
	1030-148083-0133			5000	650		76			

Cooler lighting
MULTIFRIO

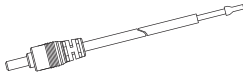
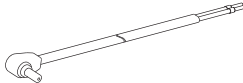
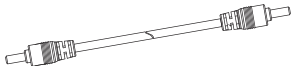

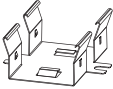

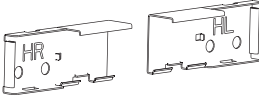
Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. linkable (PCS) ⁽⁴⁾
	1030-172165-0130	MULTIFRIO-L72-24V	12	80	3000	25°	1200	100	1200	3
	1030-172065-0130				4000		1300	108		
	1030-172065-0132				5000		1300	108		
	1030-172265-0130			076	750		63	1200		
	1030-172165-0131			3000	840		70			
	1030-172065-0131	MULTIFRIO-L96-24V	17	90	4000	25°	920	77	1700	2
	1030-172065-0133			5000	970		81			
	1030-196121-0130			80	3000		1570	92		
	1030-196021-0130				4000		1700	100		
	1030-196021-0132				5000		1700	100		
	1030-196221-0130			076	980		58	1700		
	1030-196121-0131	MULTIFRIO-L120-24V	20	90	3000	25°	1100	65	2000	2
	1030-196021-0131				4000		1210	71		
	1030-196021-0133				5000		1270	75		

[1]: The minimum power is 93% of typical values
[2]: CCT 076: The color temperature is application on meat and fish.
[3]: Minimum flux is 87% of typical values
[4]: Based on: grand total of luminaires Power should not exceed 80% of rated power output of LED power supply.

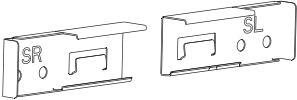
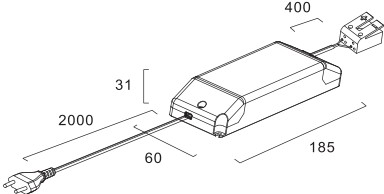
Photometrics



Cooler lighting
MULTIFRIO

Accessories (optional)	Order No.	Description	Length (mm)	N.W. (g)
	1099-013660-0137	 Power-in cable x1	1500	55.4
	1099-013660-0135	 Power-in cable with angle plug x1	1500	55.4
	1099-013660-0136	 Extension cable x1	50	12.5
	1099-014180-0143	 DC connector x1	22	0.9
	1099-013660-0132	 Vertical freezer Mounting clip centre x1	-	8
	1099-013660-0131	 Vertical freezer Mounting clip side x1	-	4
	1099-013660-0133	 Horizontal freezer Mounting clip x1 set	-	10

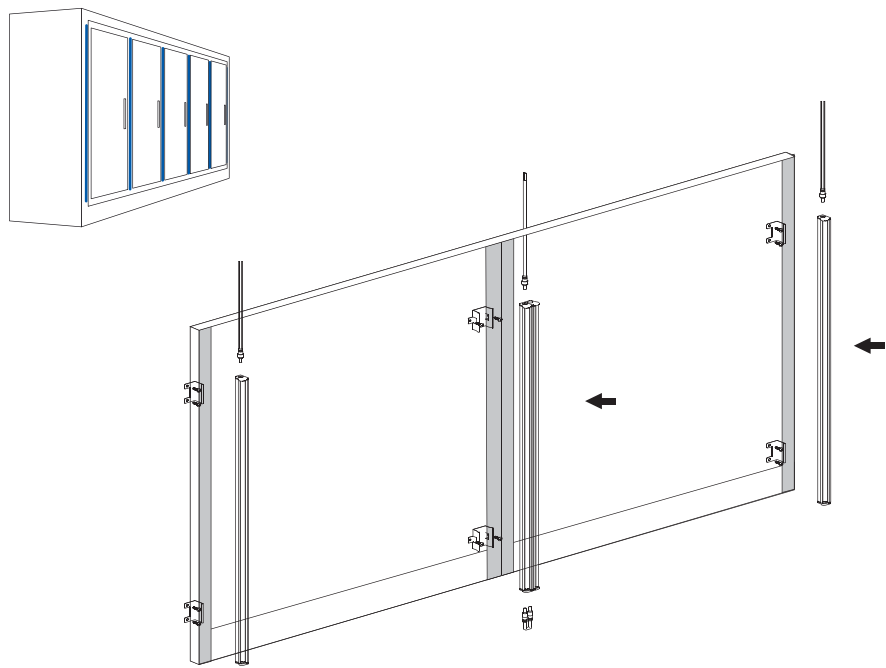
Cooler lighting
MULTIFRIO

Accessories (optional)	Order No.	Description	Length (mm)	N.W. (g)
	1099-013660-0134	 Shelf Mounting clip x1 set	-	10
	1001-260021-0136	 Model: SLT75-24VL-E Matching driver, max. 75 W. Input: 220 - 240 VAC, 2000 mm cable + plug Output: 24 V, 400 mm cable + 1*DSG plug		

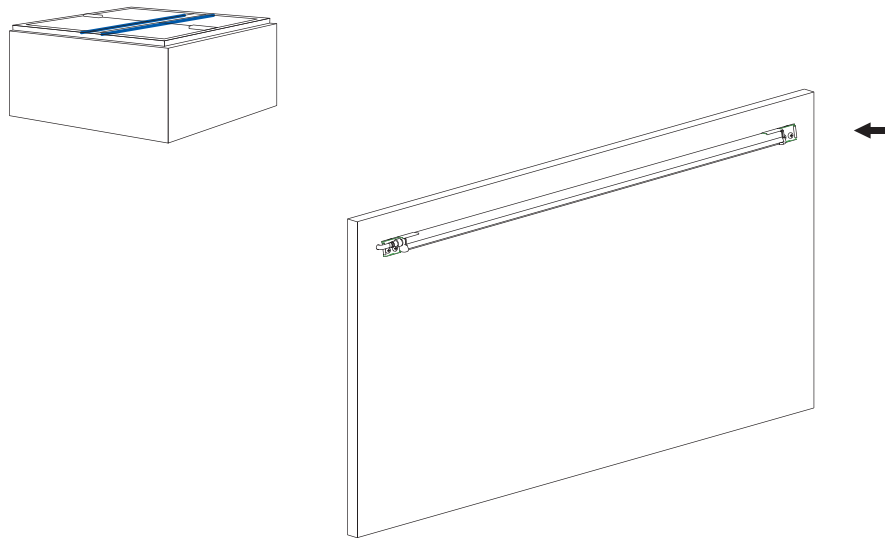
Cooler lighting
MULTIFRIO

Accessories (optional)

Vertical freezer cases



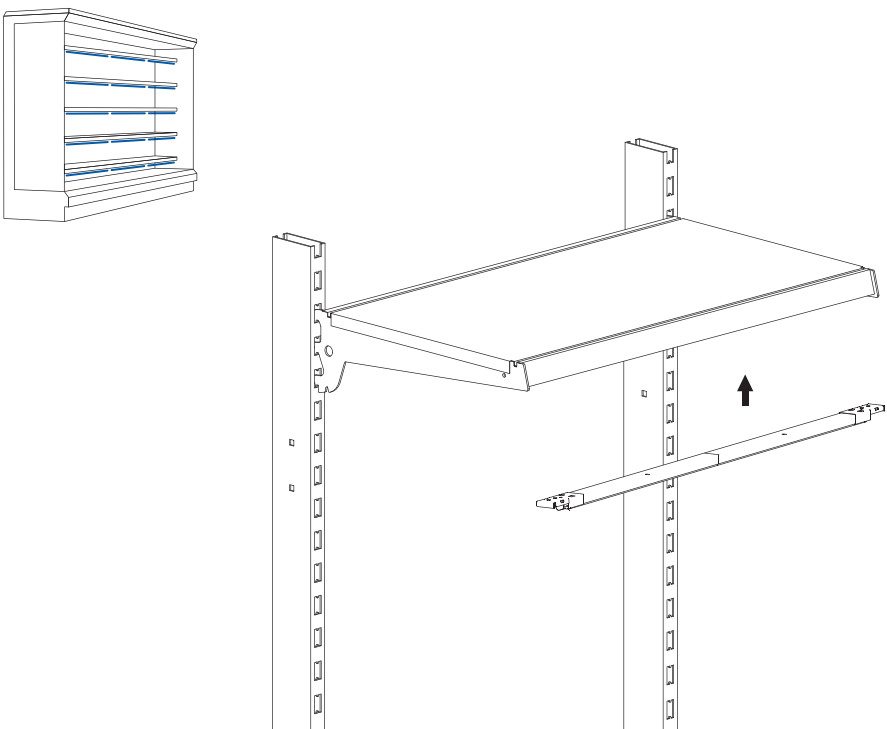
Horizontal freezer cases



Cooler lighting
MULTIFRIO

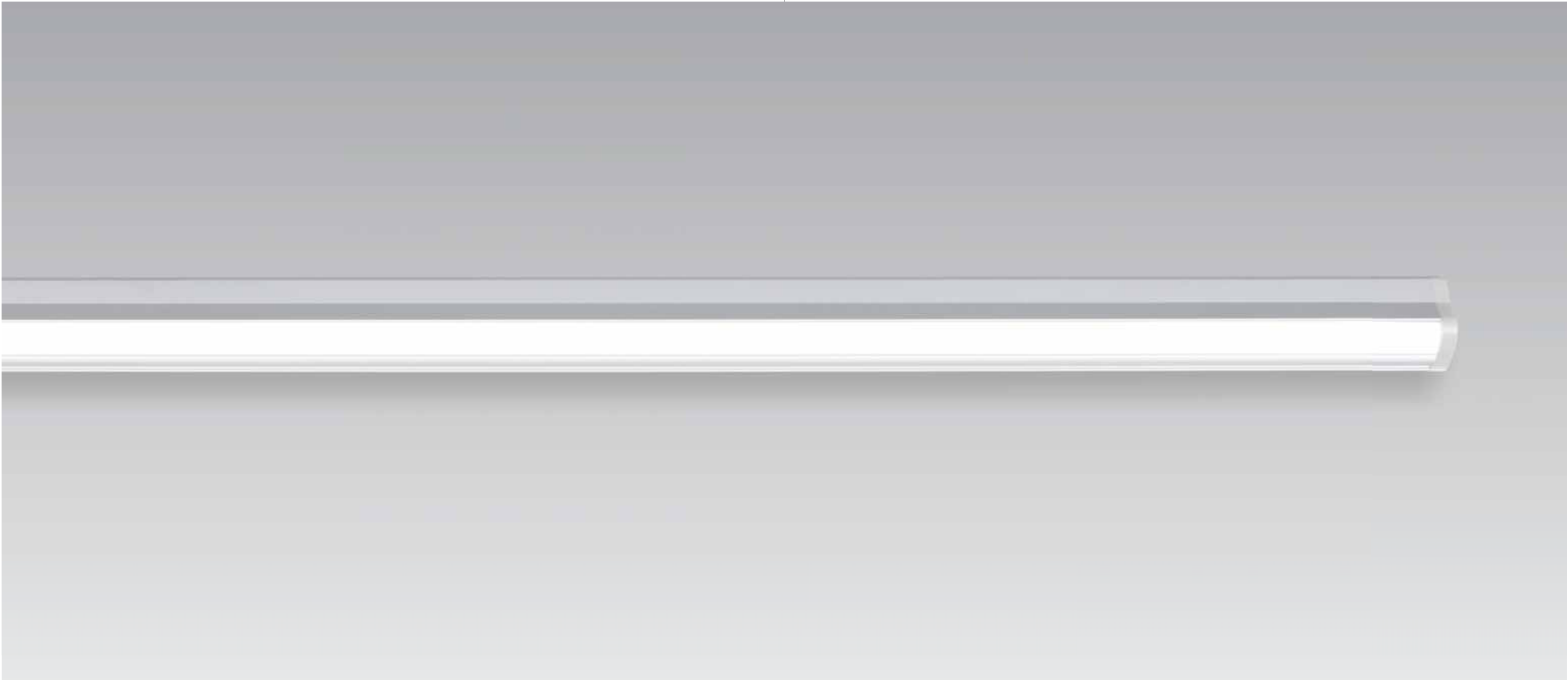
Accessories (optional)

Shelf case



* Mounting clip can be customized, suggest to install the lamp under the price tag.

Cooler lighting
MULTILINEAR



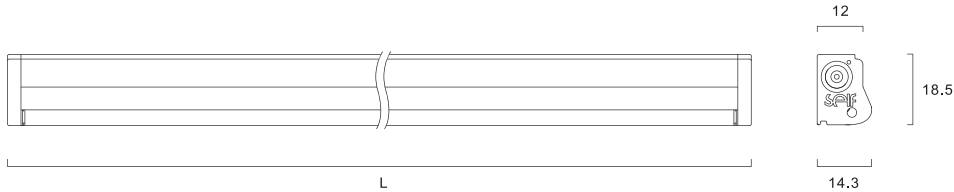
Cooler lighting
MULTILINEAR



- Housing: Extrusion aluminum oxidized.
- Optical cover: Extrusion plastic.
- LED parts: The highest efficacy chips, non-replaceable.
- CRI: Ra>80.
- Chromaticity tolerance (initial MacAdam): 3 SDCM.
- Lifetime: 50,000 hrs (L80, B20, Ta = 25°C, 12 hrs/day).
- Heat management: Passive.
- Input voltage: 24VDC.
- N.W. : 174/246/347 g.
- Ta: -30~35°C.
- Impact resistance: IK02.
- Protection class: IP65.



Dimensions: (mm)

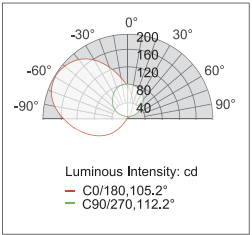


Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. linkable (PCS) ⁽⁴⁾
	1030-172169-0130	MULTILINEAR-L72-24V	3.8		3000K	110°	360	95	600	16
	1030-172069-0130			80	4000K		390	103		
	1030-172069-0131				5000K		390	103		
	1030-172269-0130		5.6		076		230	61		
	1030-172169-0131				3000K		250	66		
	1030-172069-0132			90	4000K		270	71		
	1030-172069-0133				5000K		290	76		
	1030-111117-0130	MULTILINEAR-L108-24V	5.6		3000K	110°	540	96	850	11
	1030-111017-0130			80	4000K		590	105		
	1030-111017-0131				5000K		590	105		
	1030-111217-0130		7.5		076		340	61		
	1030-111117-0131				3000K		380	68		
	1030-111017-0132			90	4000K		410	73		
	1030-111017-0133				5000K		430	77		
	1030-111118-0130	MULTILINEAR-L144-24V	7.5		3000K	110°	730	97	1200	7
	1030-111018-0130			80	4000K		780	104		
	1030-111018-0131				5000K		780	104		
	1030-111218-0130		7.5		076		460	61		
	1030-111118-0131				3000K		510	68		
	1030-111018-0132			90	4000K		550	73		
	1030-111018-0133				5000K		580	77		

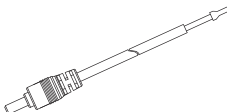
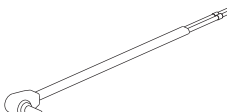
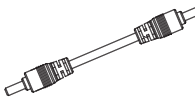

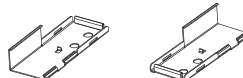
[1]: The minimum power is 85% of typical values.
[2]: CCT 076: The color temperature is applied to meat and fish.
[3]: The minimum flux is 80% of typical values.
[4]: Based on: grand total of luminaires Power should not exceed 80% of rated power output of LED power supply.

Cooler lighting
MULTILINEAR

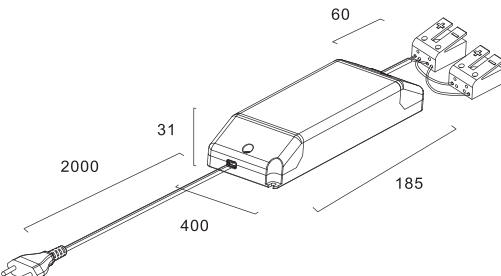
Photometrics



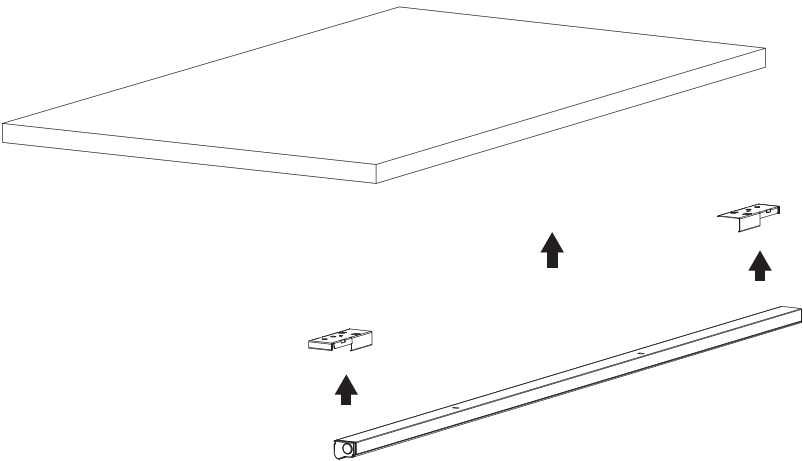
Cooler lighting
MULTILINEAR

Accessories (optional)	Order No.	Description	Length (mm)	N.W. (g)
	1099-013660-0137	 Power-in cable x1	1500	55.4
	1099-013660-0135	 Power-in cable x1	1500	55.4
	1099-013660-0136	 Soft connector x1	50	12.5
	1099-014180-0143	 DC connector x1	22	0.9
	1099-013660-0134	 Mounting clip x1 set	-	10

Cooler lighting
MULTILINEAR

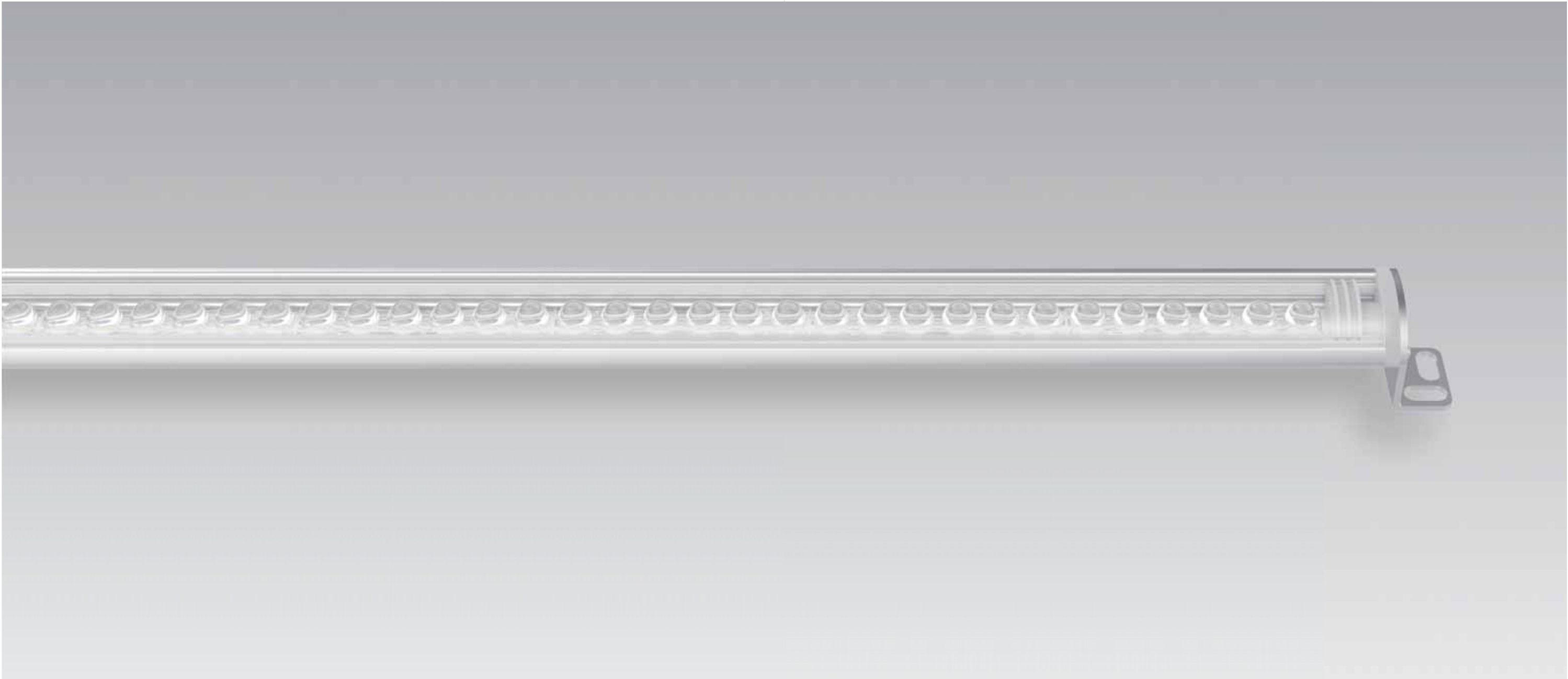
Accessories (optional)	Order No.	Description	Length (mm)	N.W. (g)
	1001-260021-0133	 Model: SLT75-24VL-E Matching driver, max. 75W. Input: 220-240VAC 2000mm cable +plug Output: 24V 400mm cable +1*DSG plug	-	420

Installation



* Mounting clip can be customized, suggest to install the lamp under the price tag.

Cooler lighting
FROST CANOPY



Cooler lighting

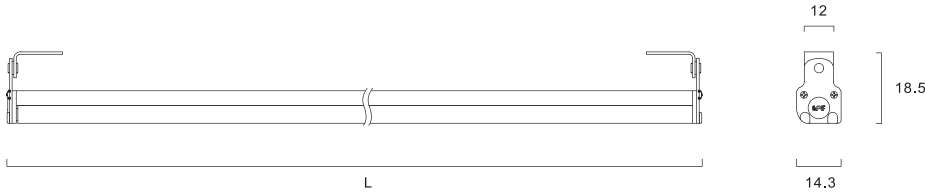
FROST CANOPY



- Housing: Extrusion aluminum oxidized.
- Lens: Injection plastic.
- Cover: Extrusion plastic.
- LED parts: The highest efficacy chips, non-replaceable.
- CRI min.: 80/90.
- Chromaticity tolerance (initial MacAdam): 3 SDCM.
- Lifetime: 50,000 hrs (L80, B20, Ta = 25°C, 12hrs/day).
- Heat management: Passive.
- Input voltage: 24VDC.
- N.W. : 388/540 g.
- Ta: -30~35°C.
- Impact resistance: IK02.
- Protection class: IP44.



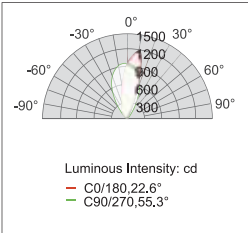
Dimensions: (mm)



Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. linkable (PCS) ⁽⁴⁾
	1030-184118-0130				3000		1200	100		
	1030-184018-0130			80	4000		1300	108		
	1030-184018-0131				5000		1300	108		
	1030-184218-0130	FROST CANOPY-L84-24V	12		076	55°	750	63	850	4
	1030-184118-0131				3000		940	78		
	1030-184018-0132			90	4000		1000	83		
	1030-184018-0133				5000		1000	83		
	1030-200109-0130				3000		1800	106		
	1030-200009-0130			80	4000		1900	112		
	1030-200009-0131				5000		1900	112		
	1030-200209-0130	FROST CANOPY-L114-24V	17		076	55°	1100	65	1200	3
	1030-200109-0131				3000		1400	82		
	1030-200009-0132			90	4000		1500	88		
	1030-200009-0133				5000		1500	88		

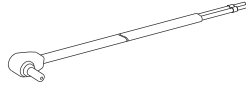
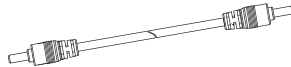
- [1]: The minimum power is 85% of typical values.
- [2]: CCT 076: The color temperature is applied to meat and fish.
- [3]: The minimum flux is 80% of typical values.
- [4]: Based on: grand total of luminaires Power should not exceed 80% of rated power output of LED power supply.

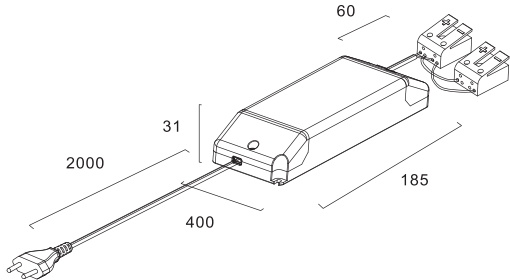
Photometrics



Cooler lighting

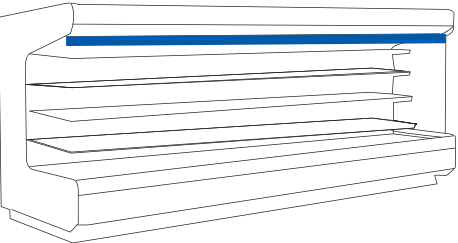
FROST CANOPY

Accessories (optional)	Order No.	Description	Length (mm)	N.W. (g)
	-	 Power-in cable x1	1500	55.4
		 Extension cable x1	310	78
	1001-260021-0133		-	420



Model: SLT75-24VL-E
Matching driver, max. 75W.
Input: 220-240VAC 2000mm cable + plug
Output: 24V 400mm cable +2*DSG plug

Accessories (optional)	Mounting clip shelf arm
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Cooler lighting
TAGLED



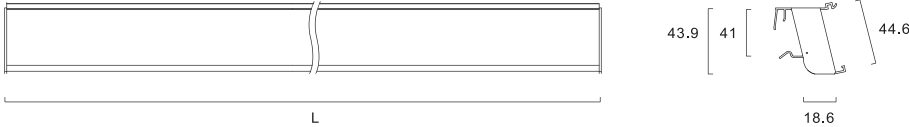
Cooler lighting
TAGLED



- Housing: Extrusion plastic.
- Optical cover: Extrusion plastic.
- LED parts: The highest efficacy chips, non-replaceable.
- CRI min.: 80/90.
- Chromaticity tolerance (initial MacAdam): 3 SDCM.
- Lifetime: 50,000 hrs (L80, B20, Ta = 25°C, 12hrs/day).
- Heat management: Passive.
- Input voltage: 24 VDC.
- N.W. : 95/143/290 g.
- Ta: -30~35°C.
- Impact resistance: IK02.
- Protection class: IP64.



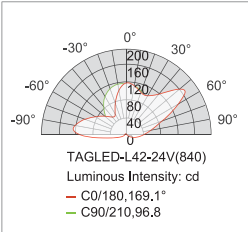
Dimensions: (mm)



Specifications	Order No.	Model	Power ⁽¹⁾ (W)	CRI	CCT ⁽²⁾ (K)	Beam Angle	Luminous Flux ⁽³⁾ (lm)	Luminaire efficacy (lm/w)	Length (mm)	Max. linkable (PCS) ⁽⁴⁾
	1030-135108-0130	TAGLED-L42-24V	4.9	80	3000	180°	460	94	650	-
	1030-135008-0130				4000		490	100		
	1030-135008-0131				5000		490	100		
	1030-135008-0134				meat color		280	57		
	1030-135108-0131				3000		320	65		
	1030-135008-0132				90 4000		340	69		
	1030-135008-0133				5000		370	76		
	1030-142113-0130	TAGLED-L63-24V	7.5	80	3000	180°	690	92	995	-
	1030-142013-0130				4000		750	100		
	1030-142013-0131				5000		750	100		
	1030-142013-0134				meat color		410	55		
	1030-142113-0131				3000		480	64		
	1030-142013-0132				90 4000		520	69		
	1030-142013-0133				5000		560	75		
	1030-184119-0130	TAGLED-L77-24V	9.4	80	3000	180°	870	93	1235	-
	1030-184019-0130				4000		940	100		
	1030-184019-0131				5000		940	100		
	1030-184019-0134				meat color		520	55		
	1030-184119-0131				3000		610	65		
	1030-184019-0132				90 4000		660	70		
	1030-184019-0133				5000		700	74		

[1]: The minimum power is 84% of typical values.
[2]: CCT 076: The color temperature is applied to red meat and red fish.
[3]: The minimum flux is 84% of typical values.
[4]: Based on: grand total of luminaires Power should not exceed 80% of rated power output of LED power supply.

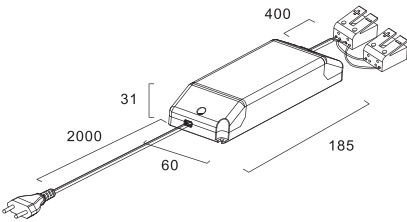
Photometrics



Cooler lighting
TAGLED

Accessories (optional)	Order No.	Description	Length (mm)	N.W. (g)
	1099-013653-0133	 Input cable x 1	1500	55
	1099-013251-0132	 Tree input cable x 1	-	260

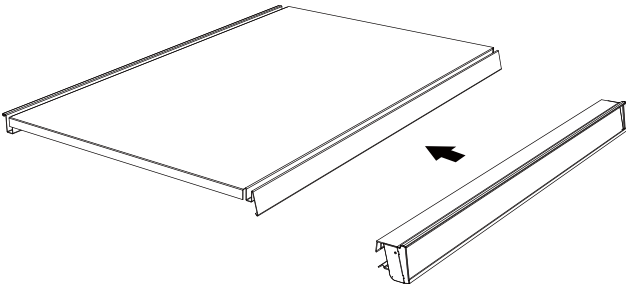
1001-260021-0133



Input cable
x 1

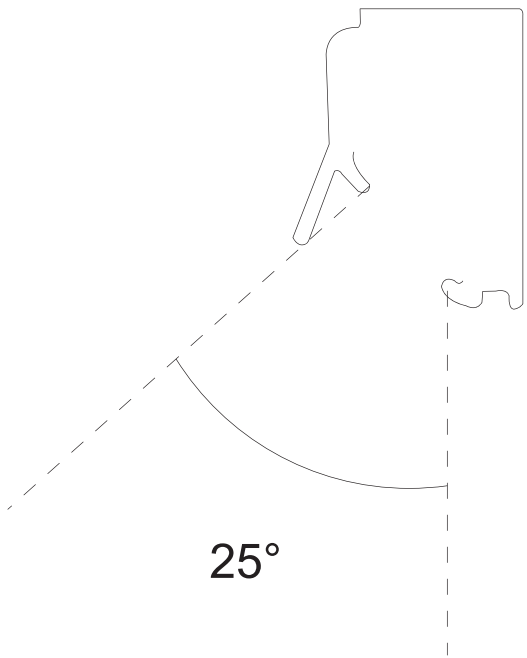
Model: SLT75-24VL-E
Matching driver, max. 75W.
Input: 220-240VAC 2000mm cable +plug
Output: 24V 400mm cable +2*DSG plug

Installation



Modular structured STAR products - MULTIFRIO

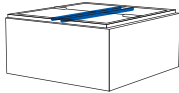
Multi-functions in one, MULTIFRIO was designed to satisfy lighting requirements of all types of cooler and shelves-systems. This modular structure allows to fit different requirements of lengths and heights onto your application. The all in one solution even helps to reduces stock. Thoughtful groove design suits more installation methods for variety of display case structures. By the studying of the common size of the display cases such coolers and freezers, we finally set 5 kinds of sizes of MULTIFRIO. Each size is one type of MULTIFRIO module. By combining the different modules, the unique MULTIFRIO is formed to satisfy different needs.



Adopting wall-wash technology in the optical design, MULTIFRIO generates homogeneous light rays which results uniform lighting effect at the objects in the cooler.

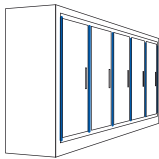
“ One for all ” design concept

Horizontal freezers



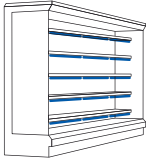
With a low height and horizontal structure this type of freezer requires special light application. According to the lighting requirements, MULTIFRIO can be applied on single side of the freezer or both sides which give brighter visual effects.

Vertical freezers



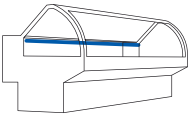
Based on ergonomics, people handle vertical doors freely and comfortably. On the other hand, vertical doors leave highly unnecessary shadows on the displayed products. Therefore, a sufficient level of light must be installed in the freezers to highlight the products. Anti-glare and unique optical lens design made MULTIFRIO perfectly suited to this application, and the distance between the product and the installation surface can be as close as 60 mm.

Multi-deck coolers



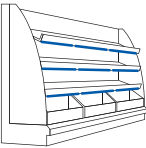
Refrigeration shelves in multi-deck cooler cabinets are for displaying meat, beverage and dairy products without glass doors. Customers' eyes fall directly on the items they want to buy. An energy-saving solution is better suited to this type to ensure open-air circulation. MULTIFRIO adopts unique optical lens design which is able to achieve homogeneous lighting effect and brings more brightness into each level of the cooler.

Sales counter



Sales counter are the common way to sell fresh products. They are built by glass mainly. This design requires invisible light and true color CRI system to bring natural product into natural color. MULTIFRIO is optimized of CRI and colour temperature (076, special light colour for meat) to generate best presentation effect in each type of cases.

Shelf-systems



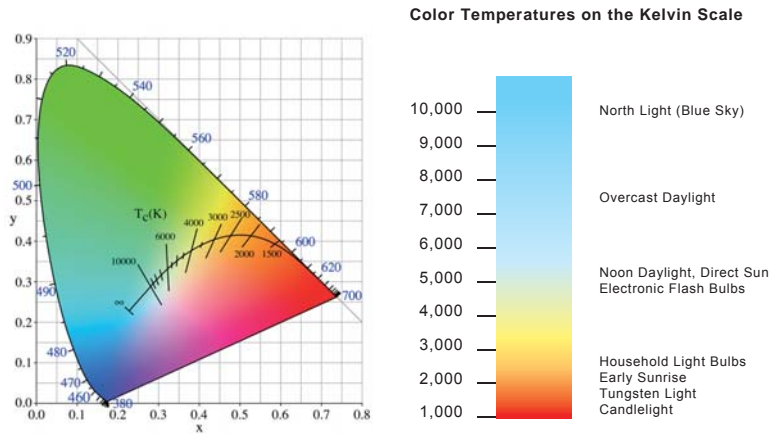
New store concept requires bright and clear displays and shelves. MULTIFRIO with slim design and high efficiency fulfill this requirement on a perfect way.

Technical Information

Light Color Temperature

The color temperature of a light source is the temperature of an ideal black-body radiator that radiates light of a comparable hue to that of the light source.

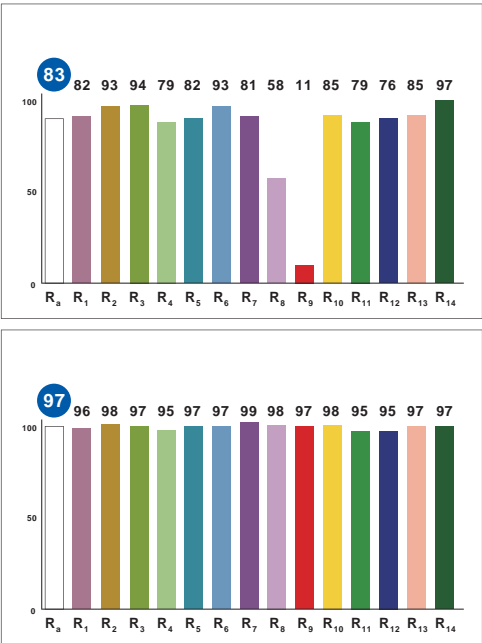
The color of light is designed in kelvin (K). The lower the kelvin, the " warmer " the light - from yellow to orange to red. The higher the Kelvin, the " cooler " (bluish-looking) the light.



CRI (Color Rendering Index)

The color rendering index (CRI), sometimes called the color rendition index, is a quantitative measure of the ability of a light source to reveal the colors of various objects faithfully in comparison with an ideal or natural light source.

The highest possible CRI is 100, for a black-body (incandescent lamps are effectively blackbodies), dropping to negative values for some light sources. Low-pressure sodium lighting has a negative CRI; fluorescent lights range from about 50 for the basic types, up to about 90 for the best tri-phosphor type. Typical LEDs have about Ra>80, although up to 95 can be achieved.



Testfarben / Test colour samples

DIN 6169

Ra	White
R1	Light greyish red
R2	Dark greyish yellow
R3	Strong yellow green
R4	Moderate yellowish green
R5	Light bluish green
R6	Light blue
R7	Light violet
R8	Light reddish purple
R9	Strong red
R10	Strong yellow
R11	Strong green
R12	Strong blue
R13	Light yellowish pink
R14	Moderate olive green (leaf)

Recommended values for COMMERCIAL LIGHTING

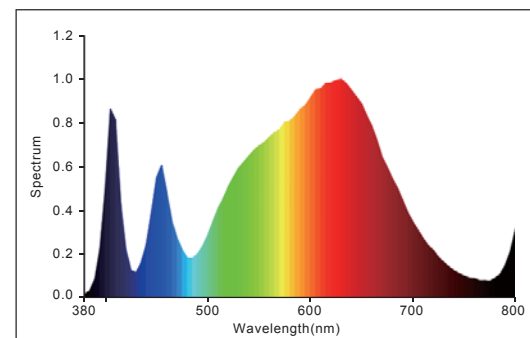
Area of application	Cool White		White		Warm White				Crisp White	Meat color
Retail premises	865	850	840	940	830	930	827	927	930	876
	6500K	5000K	4000K	4000K	3000K	3000K	2700K	2700K	3000K	
Food, general	□		■		■		■			
Bread and cakes							■	■		
Refrigerated counters, deepfreezers	■									
Cheese, fruit, vegetables			■		■		■			
Fish			■		■		■			
Meat, sausages	□									■
Textiles, leather goods	■	■		■	■	■	■	■		
Furniture, carpets					■	■	■	■		
Sporting goods, toys, stationery			■	□	■	□				
Photos, watches, jewelry	□	□	■	□	■	□				
Cosmetics, hairdressers			□	■	□	■	□	■		
Flowers	□	□	■	■		■	□			
Fashion				■		■			■	
Offices, administrative buildings										
Offices, corridors			■		■					
Meeting rooms					■		■			
Industry, trade, commerce										
Warehouses, transport depots			■							

■ First choice □ Second choice

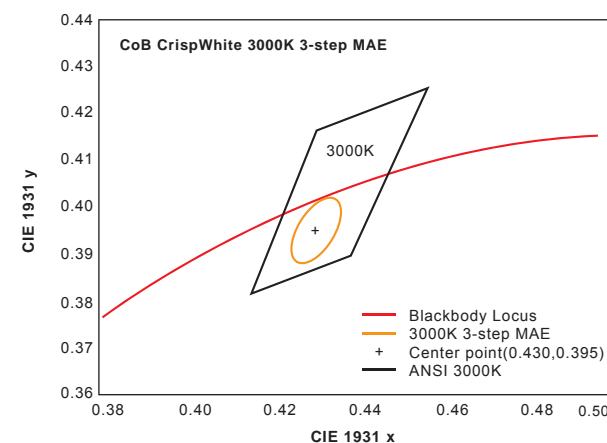
Technical Information

CRISP WHITE

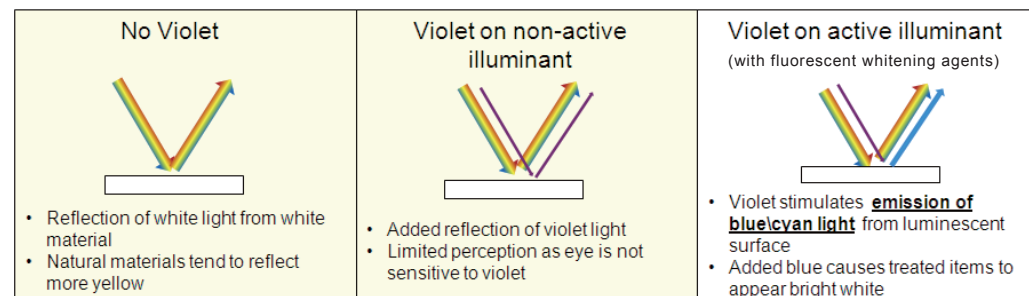
CrispWhite technology creates the most impactful retail lighting ever available, by revealing the richest whites, vibrant reds and colors that pop. CrispWhite technology delivers the warm saturated colors of high 90CRI solutions while creating a natural crisp whiteness by activating the fluorescent whitening agents in paints and fabrics to properly display merchandise in retail stores; ideal for CDM/CMH replacements.



To keep the high CRI and enhance the white perception, we have added a second blue peak to the spectrum (~410 nm).



CDM also has a second blue peak in the spectrum. However to keep the same color point as CDM, we have ensured that all Crisp White versions are available with a 3-step MacAdam ellipse below the Black body Line (BBL).



- The CrispWhite spectrum is only activated in materials containing active fluorescent whitening agents. Almost all fabrics, clothes, and paints have these whitening agents.
- The CrispWhite technology will make them appear brighter and more attractive.

Energy efficacy (light output)

Unit: lumens per watt (lm/W).

Luminous efficacy is a measure of how well a light source produces visible light. It is the ratio of luminous flux to power.

[illegible]

Technical Information

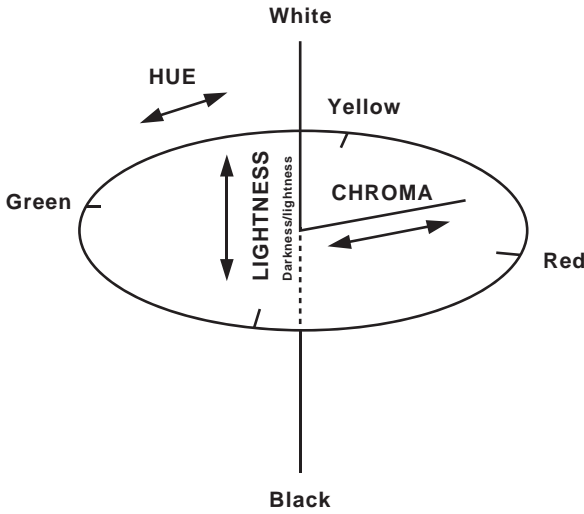
Average Rated Life

This means the period of operating time after which the total number of lamps which continue to operate corresponds to the lamp survival factor of the lamp under defined conditions and switching frequency. For LED lamps, lamp lifetime means the operating time between the start of their use and the moment when only 50% of the total number of lamps survive or when the average lumen maintenance of the batch falls below 70%,whichever occurs first (ex.L70F50) .

Average rated life of different lamps	
Incandescentlamp E14/E27	Approx.1,000hrs
Low-voltage halogen lamp (no name)	500~2,000hrs
Low-voltage halogen lamp (brand product)	2,000~4,000hrs
Fluorescent lamp T5 (6~13W)	Approx.7,000hrs
Fluorescent lamp T8	13,000~20,000hrs
Energy-saving lamp	4,000~19,000hrs
Fluorescent lamp T5 HO	Approx.24,000hrs
LED(depending on brand of LED chip,LED driver,cooling...)	10,000~100,000hrs&up

Color Difference

There are three parameters that can define the color difference: hue, lightness, chroma. Hue is the most important one, .g. say yellow or green. The second is lightness and the last parameter is chroma.



UGR (Unified glare rating)

The unified glare rating (UGR) is a measure of the glare in a given environment, proposed by Sorensen in 1987 and adopted by the International Commission on Illumination (CIE). It is basically the logarithm of the glare of all visible lamps, divided by the background lumination L_b .

$$UGR = 8log \frac{0.25}{L_b} \sum_n (L_n^2 \frac{w_n}{p_n^2})$$

where log is the common logarithm (base 10), L_n is the luminance of each light source numbered n , w_n is the solid angle of the light source seen from the observer and p_n is the Guth position index, which depends on the distance from the line of sight of the viewer.

European Standard EN 12464 regulates the lighting of indoor workplaces. In doing so, the unified glare rating method is used to evaluate (psychological) glare.

- UGR limits (UGRL) that must not be exceeded:
- ≤ 16 Technical drawing.
 - ≤ 19 Reading, writing, training, meetings, computer-based work.
 - ≤ 22 Craft and light industries.
 - ≤ 25 Heavy industry.
 - ≤ 28 Railway platforms, foyers.

For your notes

[illegible]

Think Life Enjoy Light

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