

## Handrail Lighting

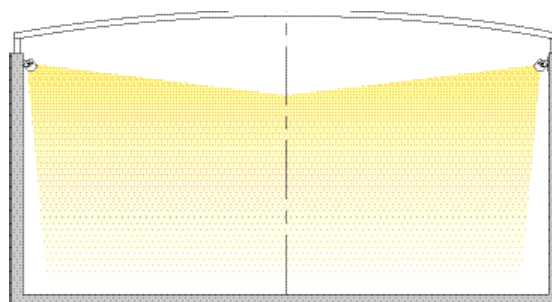
### REFRIGERATORS & FREEZERS LUMINAIRES

#### FEATURES & BENEFITS

- Efficient lighting of handrails for cooling and freezer equipment
- Available in a variety of light colours and can be matched to specific food types
- Ready-to-connect solution available, thanks to our Quick Connection System (QCS)
- High operational performance due to directional lighting, integrated heat removal and highly efficient LEDs
- Excellent product illumination thanks to the combination of SMD LEDs and innovative optics
- Safe-use operation due safety extra-low voltage (SELV)
- Simple installation with application of fixing plates
- Heat sink profile made of anodised, extruded aluminium
- LED modules protected against moisture & dust by Conformal coating
- End caps made of PBT
- Linear lenses made of PMMA
- Dimming capability

#### APPLICATION

Grocery & Supermarkets freezers and refrigerators .  
Other specialized uses for narrow enclosures.



## SPECIFICATIONS

Supply voltage	24V DC
Ambient temperature $t_a$	-30 ... +30 °C
Max. surface temperature on profile $t_c$	60 °C
Type of protection	IP 20
Protection class	III
Risk group (EN 62471:2008)	1
CRI	≥90

## SKU SPECIFICATIONS

Article Number	Description	Length (mm)	Nr. of modules	Luminous flux light engine (lm)	Power (W)	CCT
91420060	Bright-Line Handrail 630mm, 5000K CRI90, 8W, CLW8Q	630	4	790	7,6	CW
91420061	Bright-Line Handrail 630mm, 4000K CRI90, 8W, CLW8Q	630	4	830	7,6	NW
91420062	Bright-Line Handrail 630mm, 3000K CRI90, 8W, CLW8Q	630	4	720	7,6	WW
91420063	Bright-Line Handrail 630mm, 2700K CRI90, 8W, CLW8Q	630	4	690	7,6	PC
91420064	Bright-Line Handrail 630mm, Meat CRI90, 8W, CLW8Q	630	4	650	7,6	PM
91420065	Bright-Line Handrail 1200mm, 5000K CRI90, 16W, CLW8Q	1200	8	1580	15,2	CW
91420066	Bright-Line Handrail 1200mm, 4000K CRI90, 16W, CLW8Q	1200	8	1660	15,2	NW
91420067	Bright-Line Handrail 1200mm, 3000K CRI90, 16W, CLW8Q	1200	8	1440	15,2	WW
91420068	Bright-Line Handrail 1200mm, 2700K CRI90, 16W, CLW8Q	1200	8	1370	15,2	PC
91420069	Bright-Line Handrail 1200mm, Meat CRI90, 16W, CLW8Q	1200	8	1300	15,2	PM

\* All typical values for  $T_a=25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ , setting time =200ms

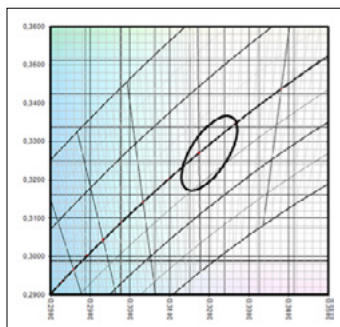
\* Luminous flux min. value = typ. value – 20%

\* Tolerance mechanical dimensions +/- 1mm

\* Tolerance electrical data +/- 15%

\* Tolerance optical data +/-10%

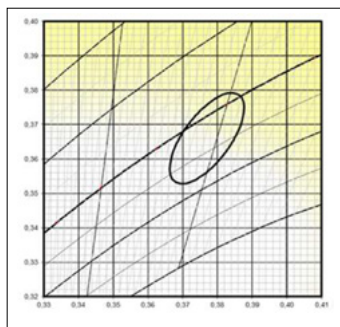
COORDINATES AND TOLERANCES ACCORDING TO CIE 1964



CIE - Coordinates

Cool white 4900K

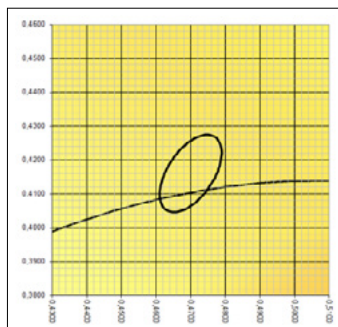
	x0	y0
Center point	0.3478	0.3535
MacAdam ellipse	3SDCM	



CIE - Coordinates

Neutral white 3950K

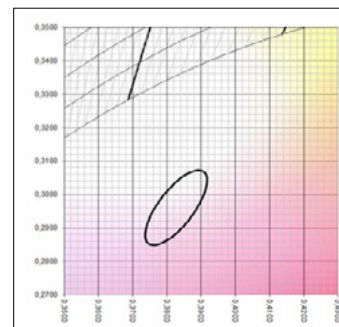
	x0	y0
Center point	0.3770	0.3660
MacAdam ellipse	3SDCM	



CIE - Coordinates

Pasta & Cheese 2660K

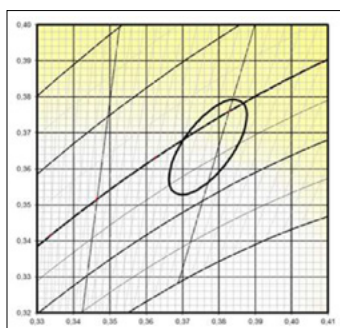
	x0	y0
Center point	0.4750	0.4160
MacAdam ellipse	3SDCM	



CIE - Coordinates

Meat & Deli

	x0	y0
Center point	0.3890	0.3030
MacAdam ellipse	3SDCM	



CIE - Coordinates

Warm white 2800K

	x0	y0
Center point	0.4480	0.3990
MacAdam ellipse	3SDCM	

OPTICAL PROPERTIES

Lifetime

tc <sub>LED</sub> temperature in °C	Luminous flux in %	Lifetime in h
0	70	50000
	80	30000
25	70	47000
	80	29000
45	70	45000
	80	28000

Standards

- \*EN 60598-1
- \*EN 60598-2-1
- \*EN 62031
- \*EN 62471

Thermal Behavior

Operating temperature (operation, no defects)	ta	-30 ... +30 °C
Storage temperature	ts	-30 ... +60 °C
Temperature cooling profile*	tc	-30 ... +60 °C

\*Values apply to operation at 100% output, natural convection.

\*If the maximum temperature limits are exceeded, the lifetime of the module will be greatly reduced or the module may be destroyed. The tc point temperature at the profile of the light should be measured in the thermally stable state and under operating conditions by means of a temperature sensor or temperature sensitive sticker in accordance with EN60598 - 1. The entire profile can be used as the tc point.