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LED LINEAR™
A Fagerhult Group Company

VARIOLED IP67

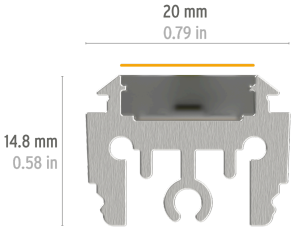
VarioLED SW HEC_ _ CL ___ _ IP67

Project name

Company

Phase / Luminaire type for tech. spec. document

Date



- Luminaire configuration: Stand-alone luminaire
- White — Light color / light source: Static White
- FS — Cable outlet position: Front Side
- Color rendering and efficiency: HEC - CRI > 94, high efficacy
- LED pitch / density: High Density
- S — Profile color: Silver (Anodized)
- Power supply position: External PSU
- Cable / connector configuration: MO - Male connector one side
- Cable / connector configuration: DC - Daisy chain
- Cable / connector configuration: OO - Open cable one side only
- Cable / connector configuration: OT - Open cable both sides
- IP67 — Protection class: IP67
- 24V — Input voltage [V]: 24V DC

SEAMLESS LIGHT FROM AN ENCAPSULATED ALUMINIUM PROFILE.

VarioLED IP67 is a fully encapsulated linear lighting system housed in a robust aluminium profile and designed for demanding outdoor environments. Clear polyurethane encapsulation provides true IP67 protection against water, UV radiation and chemicals while enabling a continuous, seamless line of light. Available with static white, tunable white or RGB light engines, the system delivers high output and consistent optical performance in harsh exterior conditions. Delivered ready-to-install with IP67 connectors, the system enables fast and reliable installation on site.

CERTIFICATES

Conformité Européenne (CE) | Ecodesign Directive | ETL certified | Protection Class III | WEEE

- IECEE CB Scheme

- IPx7 testing according to IEC 60529:1989 by Intertek
- Salt mist testing according to DIN EN 60068-2-52:2018 by Intertek

ELECTRICAL & OUTPUT DATA [1]

Power [W/m]	4	6	11	15	20	32
Efficiency [lm/W]	89.1	91.4	108.1	109.9	111.1	106.9
Max. daisy chain length [m]	12.5	10	7.5	7.5	5	3.5
CRI / R9	94/76	94/76	94/76	94/76	94/76	94/76
Rf / Rg	87/100	87/100	87/100	87/100	87/100	87/100
Ambient temperature [°C] max	40	40	40	40	35	25
Housing Temperature [°C] max	70	70	70	70	75	85

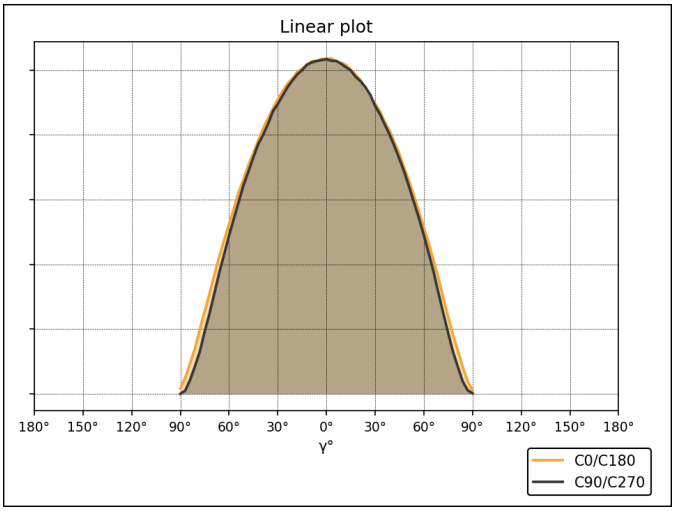
Power [W/m]	4	6	11	15	20	32
			Luminous flux [lm/m]			
W935	310	430	950	1380	1760	2880
W940	330	460	1040	1490	2000	3160
W945	350	480	1070	1540	2040	3260
W965	350	490	1090	1580	2070	3300
W999	360	500	1100	1610	2100	3330

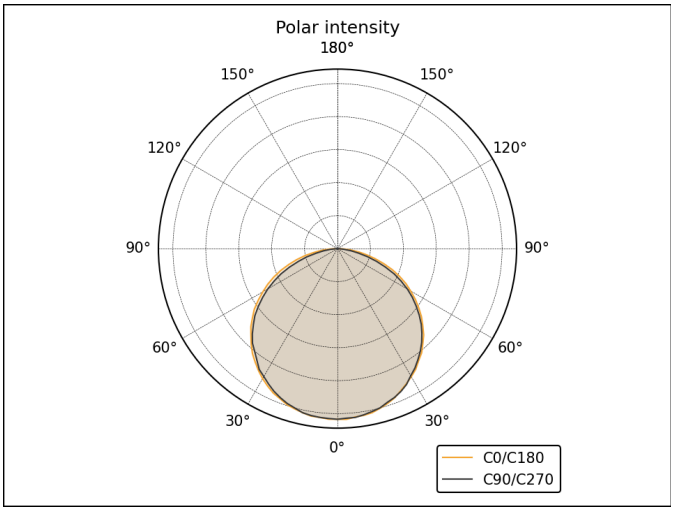
(1): Light engine family: HYDRA EXL SW HEC ; Light distribution: CL - Low cover, clear ; Light color / light source: Static White ; Profile color: Silver (Anodized) ; Integrated anti-glare: No integrated anti-glare ; Optional glare control accessory: No Accessories

PRODUCT INFORMATION

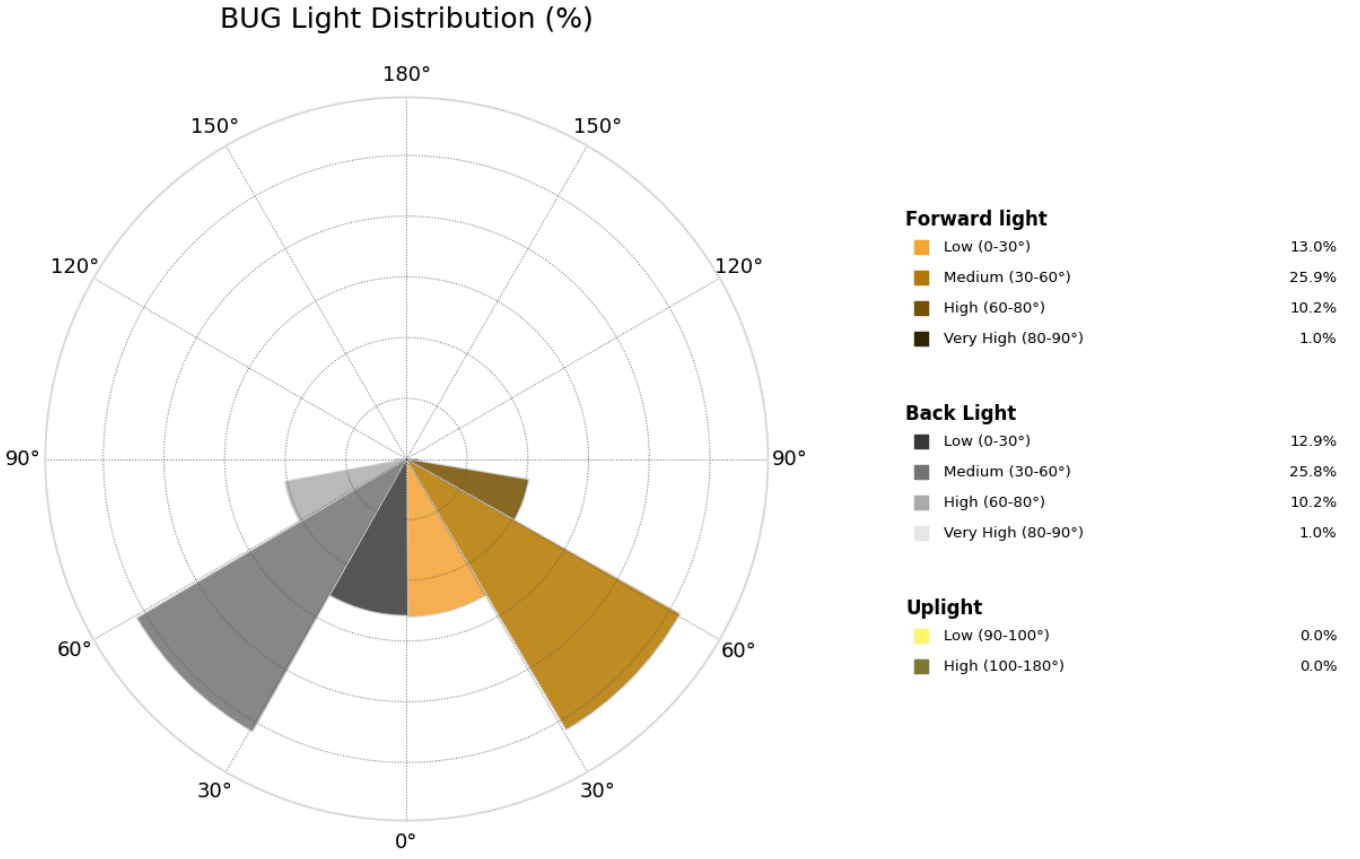
Product family	VARIOLED IP67	**Protection class**	IP67
Luminaire type (rigid / flexible)	Rigid luminaire	**Luminaire profile size**	Standard
Profile color	Silver (Anodized)	**Light distribution**	CL - Low cover, clear
Light color / light source	Static White	**Color rendering and efficiency**	HEC - CRI > 94, high efficacy
Light engine family	HYDRA EXL SW HEC	**Lumen maintenance (LED manufacturer specification)**	L90/B10
LED pitch / density	High Density	**ANSI LED binning**	3 SDCM
Cable outlet position	Front Side	**Integrated anti-glare**	No integrated anti-glare
Optional glare control accessory	No Accessories	**Power supply position**	External PSU
Control technology	No PSU with No Control Controller	**Input voltage [V]**	24V DC
Luminaire configuration	Stand-alone luminaire	**DarkSky certification**	Not DarkSky certified
Storage temperature [°C]	TS(min): -30°, TS(max): 85°	**Lifespan [h]**	60,000
fixed luminaire section [mm]	19	**LED step length [mm]**	62.5

PHOTOMETRIC GRAPHS





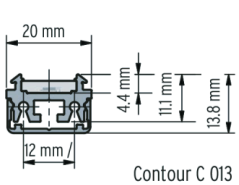
BUG LIGHT DISTRIBUTION



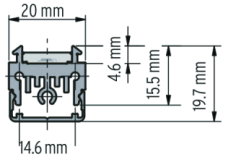
Light engine family: HYDRA EXL SW HEC ; Light distribution: CL - Low cover, clear ; Light color / light source: Static White ; Profile color: Silver (Anodized) ; Integrated anti-glare: No integrated anti-glare ; Optional glare control accessory: No Accessories

TECHNICAL SPECIFICATIONS

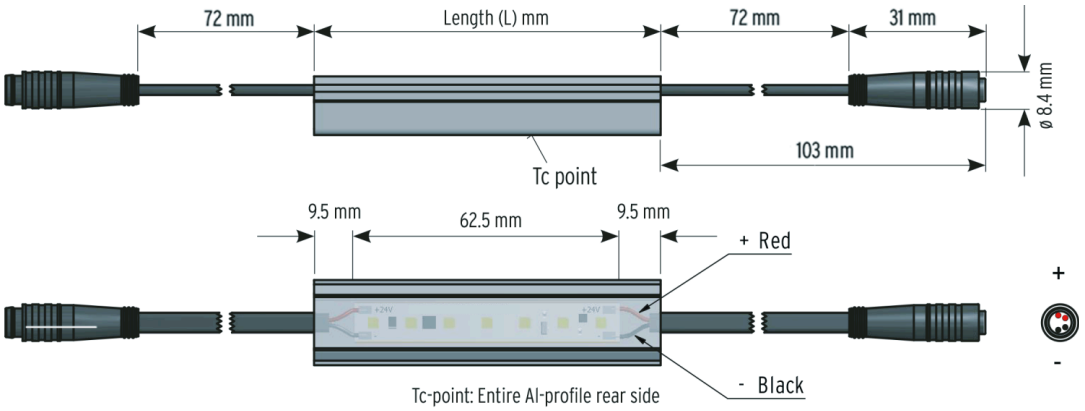
For general tolerances, including length tolerances, please refer to the technical drawing.



Contour C 013

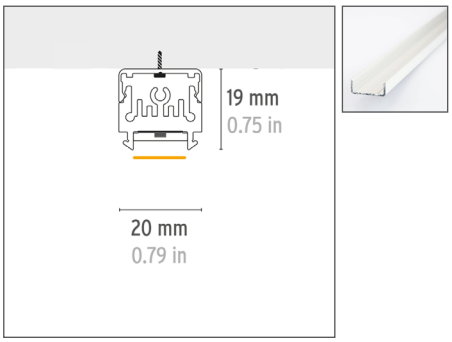
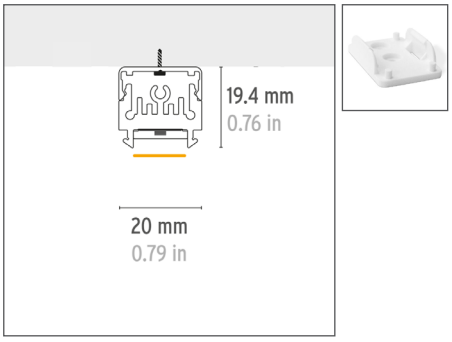
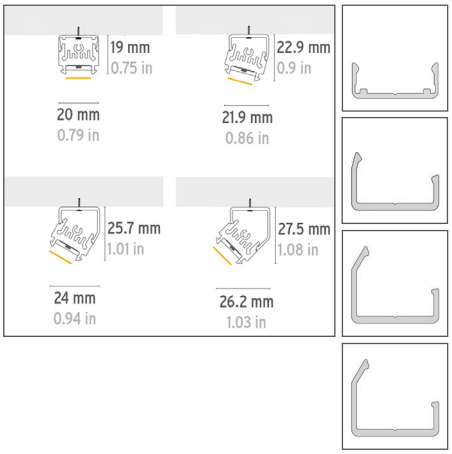


Contour C 016



MOUNTING ACCESSORIES (SELECTABLE WITH ORDER CODE)

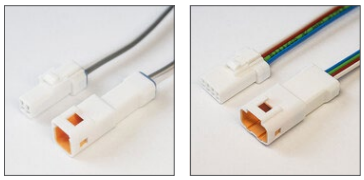
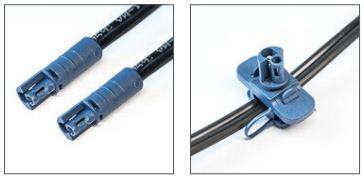
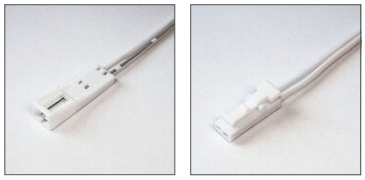
Please note: Mounting accessories are automatically included with the luminaire with the required amount of clips or the correct length of the mounting profile when chosen as part of the order code - see the digits in the order code below.

	Mounting accessories	Description
	**SURFACE MOUNTING PROFILE, 0°** Digits in order code: MP	Cut to length mounting channel silver anodized aluminum. Use according to the mounting instruction.
	**SURFACE MOUNTING WITH PLASTIC CLIPS** Digits in order code: PCL	White plastic mounting clip white color only. Recommended to use every 50 cm / 1.5 ft. Cannot be used together with the aluminum mounting profile. Use according to the mounting instruction.
	**SURFACE MOUNTING WITH ALUMINUM CLIPS** Digits in order code: C00 | C15 | C30 | C45	0°, 15°, 30° or 45° aluminum mounting clip in 90 mm / 3.54 in length. Available in silver anodized matching the profile color. Aluminum surface mounting bracket, recommended to use every 50 cm / 1.5 ft. Use according to the mounting instruction.

CABLING ACCESSORIES

Cables & Connectors: A complete overview of all extension cables and connectors and additional cabling accessory can be found on the global website: https://www.led-linear.com/products/cables-connectors

Not every product can be extended and used with every cable and connector system. Please contact your local sales team for further information.

PRODUCT FAMILY	CABLE ACCESSORY	INFORMATION	EXAMPLE
VENUS TC Family IP67 AMOR IP67 VARIO LED FLEX IP67 XOOLINE IP40 / IP67 ULTIMA Family IP40 LUNA IP40	VarioConnect IP67 Mini	Single shielded, flat, white cable IP67 connector male / female Different lengths for 2 up to 5 wires 2 wires = 0.34 mm² / 4 wires = 0.25 mm² 5 wires = 0.2 mm²	
VENUS Family IP67 ADONIS IP67* FUSION IP67 XOOLUM IP40 / IP67* XOOLIGHT IP67 VARIOLED IP67	VarioConnect IP67	Double shielded, oval, black, IP68 cable IP67 connector male / female w/o nut Different lengths for 2 up to 4 wires 2 wires = 0.34 mm² / 4 wires = 0.25 mm²	
XOOCOVE IP40	VarioConnect IP20 Cove	IP20 connector system with 2 x 0.75mm²	
OCEANOS IP67	VarioCon Oceanos	IP67 connector system with 4 x 0.75mm² Stainless Steel Newton-Meter Clutch	
VARIO CABLE	Most products can be ordered with a open lead cable. Use the configurator „cable and connector configuration" to choose between „00" (open one side) and „0T"(open two side) cables, if possible.		
Assembled Solutions (North America only)	VarioConnect IP20 Mini	Single shielded, flate, white cable IP20 connector male / female Different lengths for 2 wires 2 wires = 0.34 mm²	

*RGBW cable is always a flat ribbon IP67 Mini cable and connector system.

POWER SUPPLY UNIT (PSU) & CONTROLS

Recommended PSU: A complete overview of all PSUs and controls with different power ratings can be found on the website:

GLOBAL https://www.led-linear.com/products/drivers-controls
USA https://www.ledlinearusa.com/products/drivers-controllers

Recommended controls: A complete overview of all controls can be found on the website:

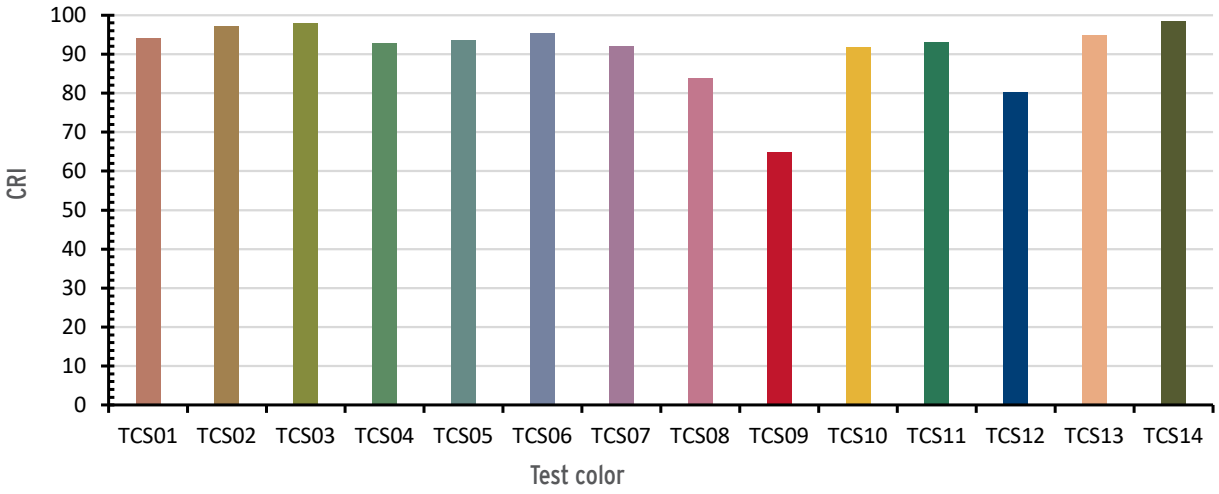
GLOBAL https://www.led-linear.com/products/smart-lighting
USA https://www.ledlinearusa.com/products/drivers-controllers

Smart Lighting accessory: A complete overview of all smart lighting accessories and controls can be found on the website:

GLOBAL https://www.led-linear.com/products/smart-lighting

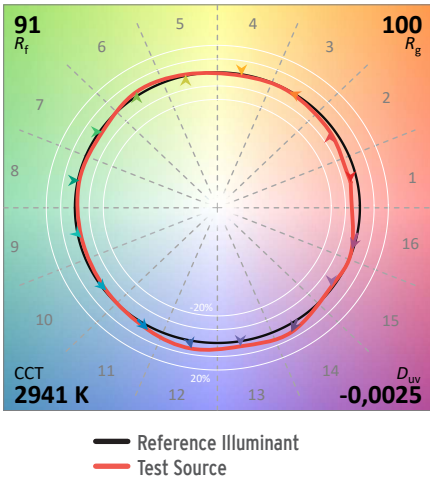
Example for „HYDRA EXL“ at 3.000K

CRI

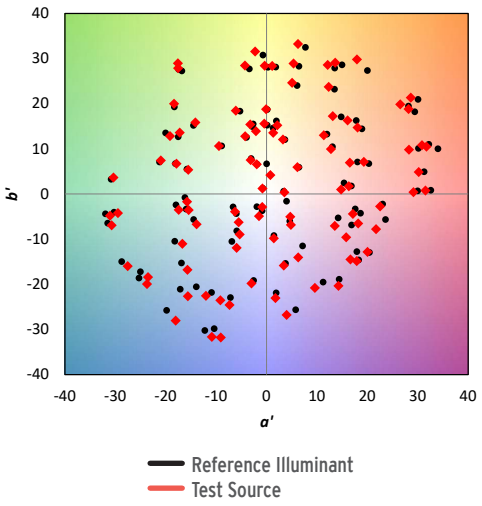


TM-30-18

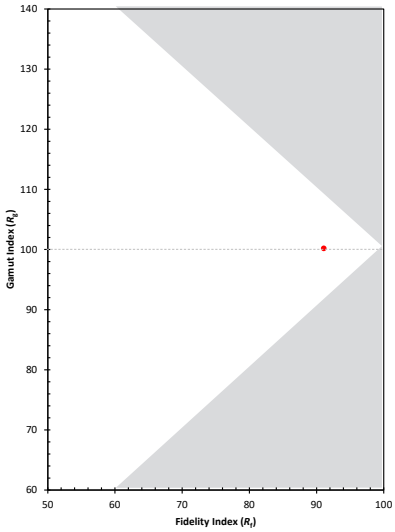
Color Vector Graphig

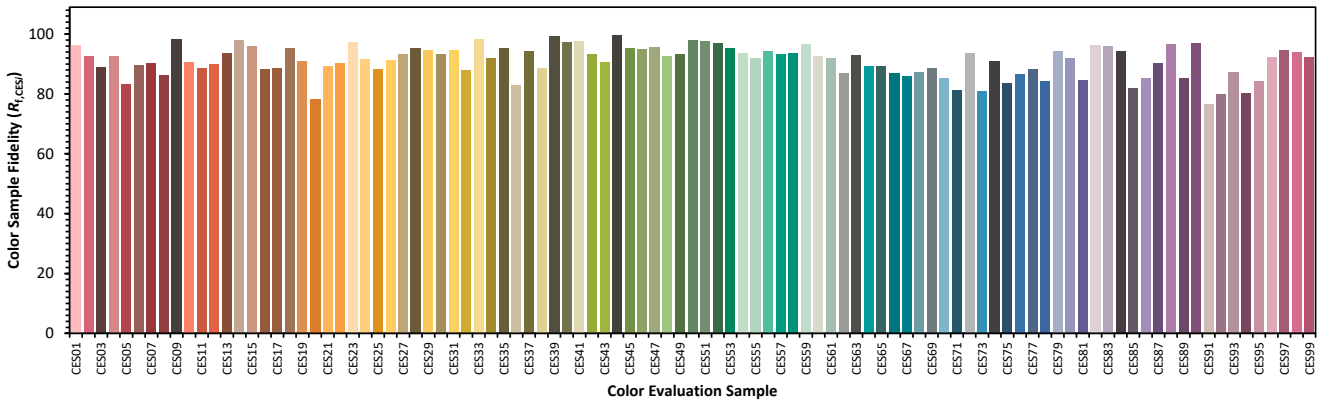


Shift in Hue-Chroma Plane



Gamut Index vs. Fidelity Index





The Fidelity Index chart shows the color fidelity index for each of the 99 reference colors. The reference colors are arranged under the 5000 K reference source, which was also used to determine the color of each bar. The colors are approximate and depend on the correct monitor calibration. Some colors may be outside the color gamut of the monitor used and will not be displayed accurately.

VOLTAGE DROP INFORMATION FOR THE FEED-IN LINE (EXTERNAL PSU / CONTROL TO FIXTURE)

Cable cross section	mm²						
	0.25	0.34	0.5	0.75	1.0	1.5	2.5
Total wattage of light line* [W]	MAX. CABLE LENGTH BETWEEN PSU / CONTROL UNIT AND THE LUMINAIRE						
	m						
0 - 5	29	39	58	87	116	174	291
0 - 10	14	19	29	43	58	87	145
10 - 15	9.7	13	19	29	38	58	97
15 - 20	7.2	9.9	14	21	29	43	72
20 - 25	5.8	7.9	11	17	23	34	58
25 - 30	4.8	6.6	9.7	14	19	29	48
30 - 35	4.1	5.6	8.3	12	16	24	41
35 - 40	3.6	4.9	7.2	10	14	21	36
40 - 45	3.2	4.4	6.4	9.7	12	19	32
45 - 50	2.9	3.9	5.8	8.7	11	17	29
50 - 60	2.4	3.3	4.8	7.2	9.7	14	24
60 - 70	2.0	2.8	4.1	6.2	8.3	12	20
70 - 80	1.8	2.4	3.6	5.4	7.2	10	18
80 - 90	1.6	2.2	3.2	4.8	6.4	9.7	16
90 - 100	1.4	1.9	2.9	4.3	5.8	8.7	14
100 - 110	1.3	1.8	2.6	3.9	5.2	7.9	13
110 - 120	1.2	1.6	2.4	3.6	4.8	7.2	12.
120 - 130	1.1	1.5	2.2	3.3	4.4	6.7	11
130 - 140	1.0	1.4	2.0	3.1	4.1	6.2	10
140 - 150	0.9	1.3	1.9	2.9	3.8	5.8	9.7
150 - 160	0.9	1.2	1.8	2.7	3.6	5.4	9.1
170 - 180	0.8	1.1	1.6	2.4	3.2	4.8	8.0
180 - 190	0.7	1.0	1.5	2.3	3.0	4.6	7.6
190 - 200	0.7	0.9	1.4	2.1	2.9	4.3	7.2

Cable cross section	AWG						
	24	22	21	19	18	16	14
Total wattage of light line* [W]	MAX. CABLE LENGTH BETWEEN PSU / CONTROL UNIT AND THE LUMINAIRE						
	ft						
0 - 5	95	130	191	286	382	573	956
0 - 10	47	65	95	143	191	286	478
10 - 15	31	43	63	95	127	191	318
15 - 20	23	32	47	71	95	143	239
20 - 25	19	26	38	57	76	114	191
25 - 30	15	21	31	47	63	95	159
30 - 35	13	18	27	40	54	81	136
35 - 40	11	16	23	35	47	71	119
40 - 45	10	14	21	31	42	63	106
45 - 50	9.5	13	19	28	38	57	95
50 - 60	7.9	10	15	23	31	47	79
60 - 70	6.8	9.2	13	20	27	40	68
70 - 80	5.9	8.1	11	17	23	35	59
80 - 90	5.3	7.2	10	15	21	31	53
90 - 100	4.7	6.5	9.5	14	19	28	47
100 - 110	4.3	5.9	8.6	13	17	26	43
110 - 120	3.9	5.4	7.9	11.9	15	23	39
120 - 130	3.6	5.0	7.3	11	14	22	36
130 - 140	3.4	4.6	6.8	10	13	20	34
140 - 150	3.1	4.3	6.3	9.5	12	19	31
150 - 160	2.9	4.0	5.9	8.9	11	17	29
170 - 180	2.6	3.6	5.3	7.9	10.6	15	26
180 - 190	2.5	3.4	5.0	7.5	10	15	25
190 - 200	2.3	3.2	4.7	7.1	9.5	14	23

*** Multiply the number of lights within the light line by the wattage per m or ft to determine the total power of the light line.**

Please note, these cables are not supplied by the factory. For table calculation, the underscored power level is used.
Calculation refers to the cable configuration on site for static white applications.
For tunable white, RGB, RGBW or other multichannel luminaires, the individual wattage per channel must be considered.
This might differ due the control type used.
The information listed in the table only refers to the conductor-based voltage drop of max. 0.85V at 24V DC input voltage.

Regarding the electromagnetic combability (EMC) the maximum cable length is defined by the power supply manufacturer.
A cable length between power supply and planned product longer than indicated by the datasheet of the power supply is possible. However the electromagnetic combability can then be influenced by the conditions of the installation site. There is no data on electromagnetic compatibility for longer cable lengths, which might lead to the necessity of an evaluation of the electromagnetic compatibility by a third party.
Datasheets and mounting instructions of the components in combination with the planned product must be carefully read and followed.