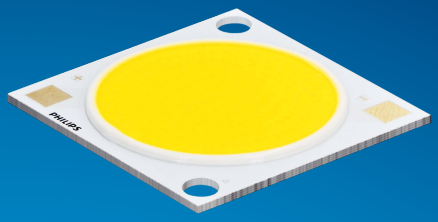
PHILIPS

Fortimo

LED

Fortimo SLM C 9xx 1212
L22 2828 G8N HE



Datasheet

Best combination of quality of light and efficacy with industry standard footprint

Fortimo LED SLM CRI90 G8N HE

Philips continues to develop its tried and trusted high efficiency COB range of products (since 2020) by introducing the third generation Fortimo SLM G8 HE. The Fortimo SLM CRI90 G8 HE range boasts an impressive 5% increase in efficacy and maintains color consistency of 2 SDCM similar to its predecessor, Fortimo SLM CRI90 G7HE+. Drawing on our four years of industry and R&D experience with high efficacy COB platforms, we have further optimized the quality of light and enhanced the product's robustness.
With the superior efficiency and color consistency, Fortimo SLM G8 HE helps unlock the extraordinary potential of light, facilitating innovation and inspiring the next generation of luminaire design for our OEM customers.
Check out the online Easy Design-in Tool for your perfect system combination (www.easydesignintool.com).

Key features and benefits

- Most widely used footprint to enable ease of use
- Best quality of light available for all applications
- ~5% efficacy improvement vs. current Fortimo SLM G7 HE+ range
- Excellent color consistency management (2 SDCM)
- System proposition (Module + Driver + Holder)
- Flexibility to optimize luminaire performance (high efficacy or high lm output)
- 50,000 hours lifetime

October 2024









Ordering data

Commercial product name	EOC	12NC	EPREL registration #	Box quantity
Fortimo SLM C 927 1212 L22 2828 G8N HE	8720169 383807 00	9290 039 08780	2093807	10
Fortimo SLM C 930 1212 L22 2828 G8N HE	8720169 383838 00	9290 039 08880	2093801	10
Fortimo SLM C 935 1212 L22 2828 G8N HE	8720169 383869 00	9290 039 08980	2093809	10
Fortimo SLM C 940 1212 L22 2828 G8N HE	8720169 383890 00	9290 039 09080	2093808	10
Fortimo SLM C 950 1212 L22 2828 G8N HE	8720169 383920 00	9290 039 09180	2093800	10
Fortimo SLM C 930 PW 1212 L22 2828 G8N HE	8720169 383951 00	9290 039 09280	2093823	10
Fortimo SLM C 935 PW 1212 L22 2828 G8N HE	8720169 383982 00	9290 039 09380	2093834	10
Fortimo SLM C 940 PW 1212 L22 2828 G8N HE	8720169 384019 00	9290 039 09480	2093832	10

Not all products are globally available by default.
Please contact your local sales representative for local availability and activation conditions.

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo SLM C 9xx 1212 L22 2828 G8N HE	1080	2160	2160	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T_c (case temperature at T_c point)	65	95	95	°C

* Nominal value at which typical performance is specified

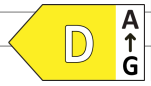
** Value at which life time is specified

*** Maximum value for safe operation, do not operate above this value

Optical characteristics - table per color (CCT)

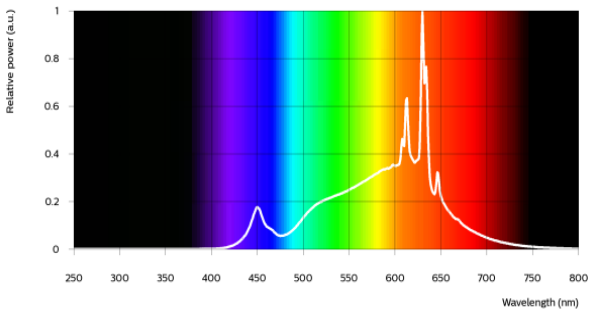
Fortimo SLM C 927 1212 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	5748	6050	6655	lm
Efficacy		161		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.458, 0.410)		-
Color consistency			2	SDCM
CRI	90			
R9	>50			
Photometric code		927/259		
Photobiological safety		RG1 unlimited		



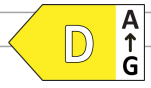
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	927	lm	lm/W
80% I-nom 864mA	Tc 25 °C	5166	173
	Tc-nom 65 °C	4909	167
	Tc-max 95 °C	4660	160
I-nom 1080mA	Tc 25 °C	6369	168
	Tc-nom 65 °C	6050	161
	Tc-max 95 °C	5740	155
I-max 2160mA	Tc 25 °C	11998	145
	Tc-nom 65 °C	11359	139
	Tc-max 95 °C	10737	133



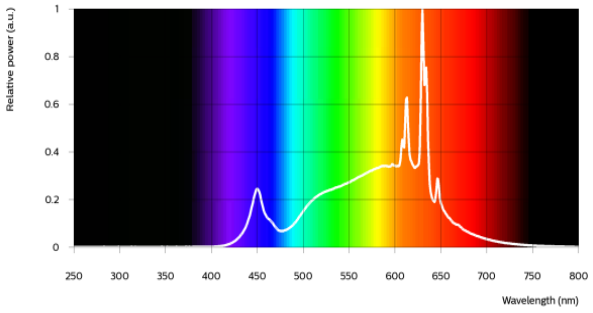
Fortimo SLM C 930 1212 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	6113	6435	7078	lm
Efficacy		172		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			2	SDCM
CRI	90			
R9	>50			
Photometric code		930/259		
Photobiological safety		RG1 unlimited		



Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	930	lm	lm/W
80% I-nom 864mA	Tc 25 °C	5494	184
	Tc-nom 65 °C	5221	178
	Tc-max 95 °C	4957	170
I-nom 1080mA	Tc 25 °C	6774	179
	Tc-nom 65 °C	6435	172
	Tc-max 95 °C	6106	165
I-max 2160mA	Tc 25 °C	12764	154
	Tc-nom 65 °C	12086	148
	Tc-max 95 °C	11426	141

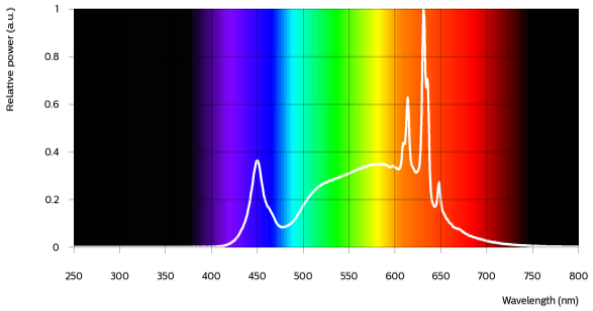


Fortimo SLM C 935 1212 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	6232	6560	7216	lm
Efficacy		175		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.408, 0.393)		-
Color consistency			2	SDCM
CRI	90			
R9	>50			
Photometric code		935/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	935	lm	lm/W
80% I-nom 864mA	Tc 25 °C	5600	188
	Tc-nom 65 °C	5322	181
	Tc-max 95 °C	5053	174
I-nom 1080mA	Tc 25 °C	6906	182
	Tc-nom 65 °C	6560	175
	Tc-max 95 °C	6224	168
I-max 2160mA	Tc 25 °C	13013	157
	Tc-nom 65 °C	12322	151
	Tc-max 95 °C	11650	144

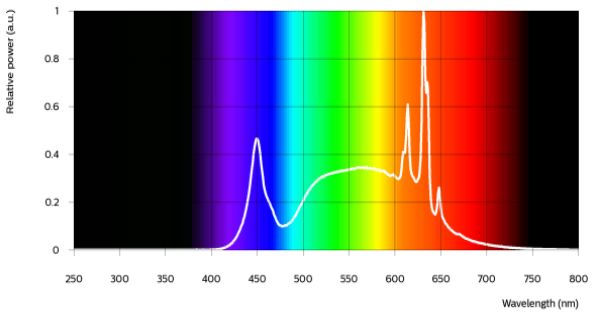


Fortimo SLM C 940 1212 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	6327	6660	7326	lm
Efficacy		178		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.382, 0.380)		-
Color consistency			2	SDCM
CRI	90			
R9	>50			
Photometric code		940/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	940	lm	lm/W
80% I-nom 864mA	Tc 25 °C	5685	191
	Tc-nom 65 °C	5403	184
	Tc-max 95 °C	5130	176
I-nom 1080mA	Tc 25 °C	7011	185
	Tc-nom 65 °C	6660	178
	Tc-max 95 °C	6319	171
I-max 2160mA	Tc 25 °C	13212	160
	Tc-nom 65 °C	12512	153
	Tc-max 95 °C	11831	146



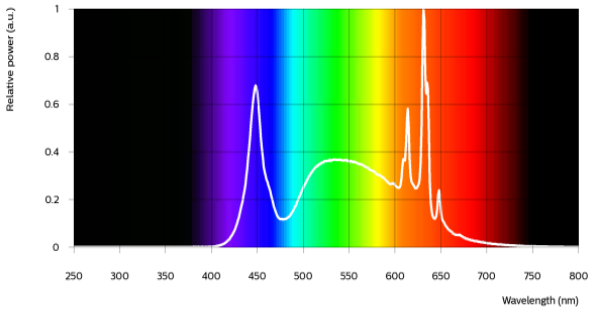
Fortimo SLM C 950 1212 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	6265	6595	7254	lm
Efficacy		176		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.345, 0.355)		-
Color consistency			2	SDCM
CRI	90			
R9	>50			
Photometric code		950/259		
Photobiological safety		RG1 unlimited		



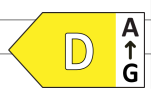
Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	950	lm	lm/W
80% I-nom 864mA	Tc 25 °C	5629	189
	Tc-nom 65 °C	5350	182
	Tc-max 95 °C	5080	175
I-nom 1080mA	Tc 25 °C	6942	183
	Tc-nom 65 °C	6595	176
	Tc-max 95 °C	6258	169
I-max 2160mA	Tc 25 °C	13085	158
	Tc-nom 65 °C	12393	152
	Tc-max 95 °C	11720	145



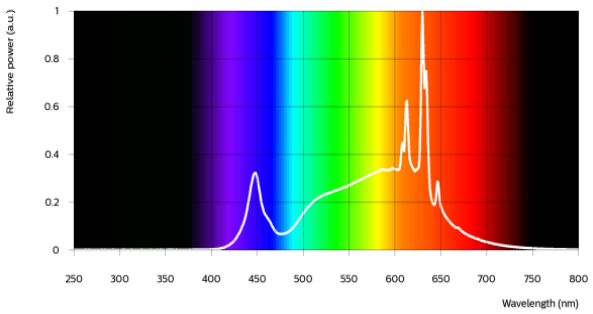
Fortimo SLM C 930 PW 1212 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	6052	6370	7007	lm
Efficacy		170		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.422, 0.386)		-
Color consistency			2	SDCM
CRI	90			
R9	>50			
Photometric code		930/259		
Photobiological safety		RG1 unlimited		



Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	930	lm	lm/W
80% I-nom 864mA	Tc 25 °C	5438	182
	Tc-nom 65 °C	5168	176
	Tc-max 95 °C	4907	169
I-nom 1080mA	Tc 25 °C	6706	177
	Tc-nom 65 °C	6370	170
	Tc-max 95 °C	6044	163
I-max 2160mA	Tc 25 °C	12636	153
	Tc-nom 65 °C	11966	146
	Tc-max 95 °C	11313	140

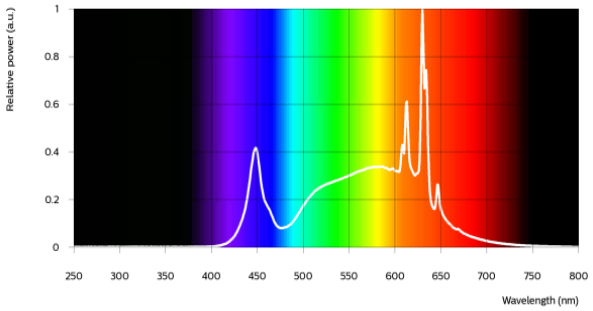


Fortimo SLM C 935 PW 1212 L22 2828 G8N HE

Parameter	Min	Typ	Max	Unit
Luminous flux	6237	6565	7222	lm
Efficacy		175		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.398, 0.376)		-
Color consistency			2	SDCM
CRI	90			
R9	>50			
Photometric code		935/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	935	lm	lm/W
80% I-nom 864mA	Tc 25 °C	5604	188
	Tc-nom 65 °C	5326	181
	Tc-max 95 °C	5057	174
I-nom 1080mA	Tc 25 °C	6911	182
	Tc-nom 65 °C	6565	175
	Tc-max 95 °C	6229	168
I-max 2160mA	Tc 25 °C	13024	157
	Tc-nom 65 °C	12334	151
	Tc-max 95 °C	11662	144

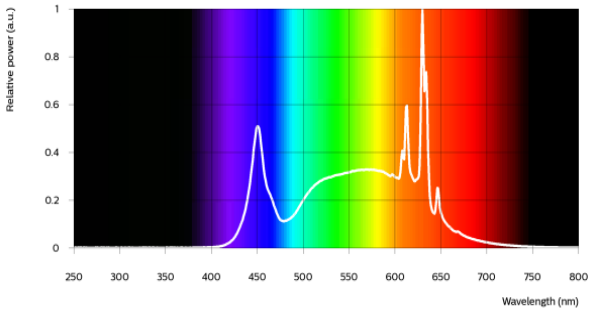


Fortimo SLM C 940 PW 1212 L22 2828 G8N HE

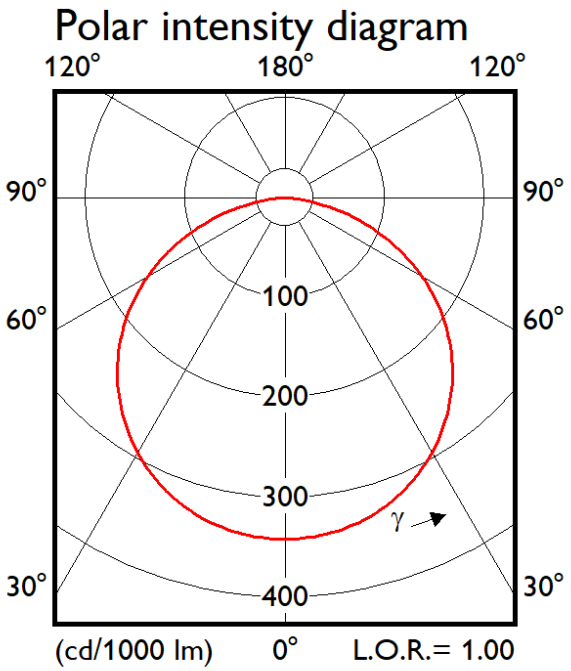
Parameter	Min	Typ	Max	Unit
Luminous flux	6265	6595	7254	lm
Efficacy		176		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.374, 0.364)		-
Color consistency			2	SDCM
CRI	90			
R9	>50			
Photometric code		940/259		
Photobiological safety		RG1 unlimited		

Measurement precision ± 5% for the flux data and ± 6% for the efficacy data. Measurement precision for color coordinates ± 0.005. Measurement precision for CRI ± 1.5.

Operation point	940	lm	lm/W
80% I-nom 864mA	Tc 25 °C	5629	189
	Tc-nom 65 °C	5350	182
	Tc-max 95 °C	5080	175
I-nom 1080mA	Tc 25 °C	6942	183
	Tc-nom 65 °C	6595	176
	Tc-max 95 °C	6258	169
I-max 2160mA	Tc 25 °C	13085	158
	Tc-nom 65 °C	12393	152
	Tc-max 95 °C	11720	145



Beam shape


Polar intensity diagram
120°
180°
120°
90°
90°
60°
60°
100
200
300
γ
30°
30°
400
(cd/1000 lm)
0°
L.O.R.= 1.00

Electrical characteristics

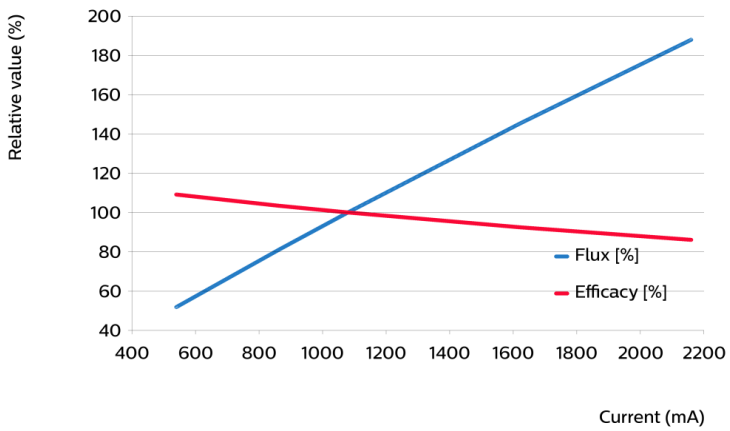
Parameter	Min	Typ	Max	Unit
Forward voltage	32.5	34.7	37.0	V
Power consumption	35.1	37.5	40.0	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules per chain			1	
Number of modules in parallel			1	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%

Tuning information

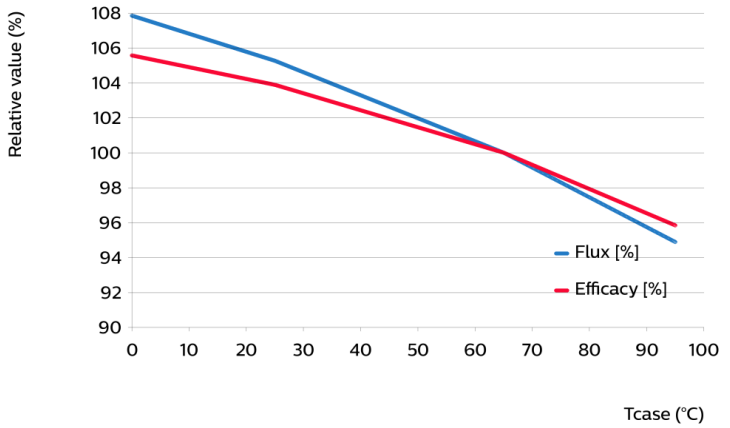
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
2160	188	86
1620	145	92
1080	100	100
864	81	103
540	52	109



Flux and efficacy versus temperature at Tc (at I nominal)

Tc [°C]	Flux [%]	Efficacy [%]
95	95	96
65	100	100
25	105	104
0	108	106



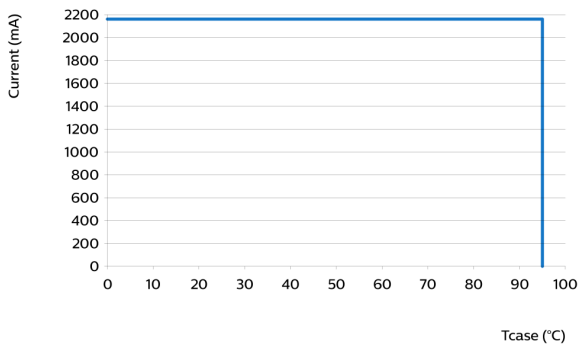
Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 864mA	Tc 50°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
	Tc 65°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
	Tc 95°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
I-nom 1080mA	Tc 50°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
	Tc 65°C	>66	>66	>66	>66	>66	>66	>66	>66	>66
	Tc 95°C	>66	>66	>66	>66	>66	>66	>66	>66	62
I-max 2160mA	Tc 50°C	>66	>66	>66	>66	>66	>66	50	42	39
	Tc 65°C	>66	>66	>66	>66	>66	62	38	32	29
	Tc 95°C	>66	>66	60	49	41	38	23	19	17

Lifetime

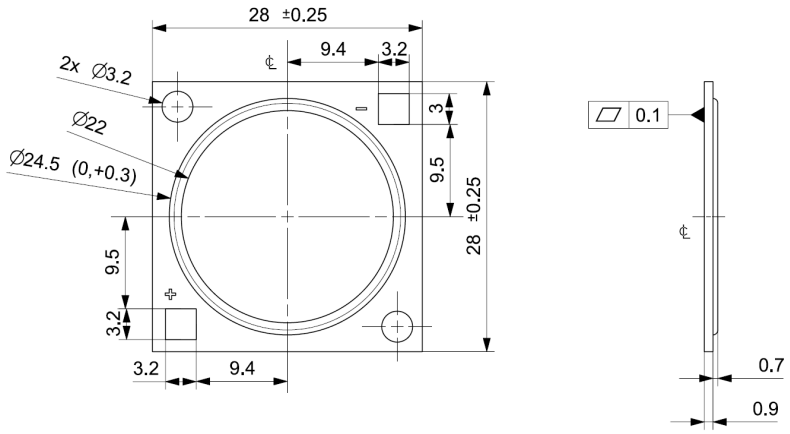
Parameter	Value	Unit
M70F50 nominal	>66000	hours

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	27.75	28	28.25	mm
Width	27.75	28	28.25	mm
Height	0.8	0.9	1	mm
Height	1.3	1.6	1.9	mm
Product mass		2.2		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		2160	mA
Case temperature (Tc-max)		95	°C
ESD (direct contact)	8		kV
Working voltage		60	V_{dc}
Ambient temperature	-20	40	°C
Storage temperature	-40	80	°C

At illumination levels exceeding 1342 lux risk group classification may be RG2.

Application information

Certificates and Standards
CB
CE
ENEC
ENEC+
EPRS 001
IEC 62031
UKCA
UL
UL 8750

Environmental
RoHS/REACH

Application	
Dimming	Yes



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