

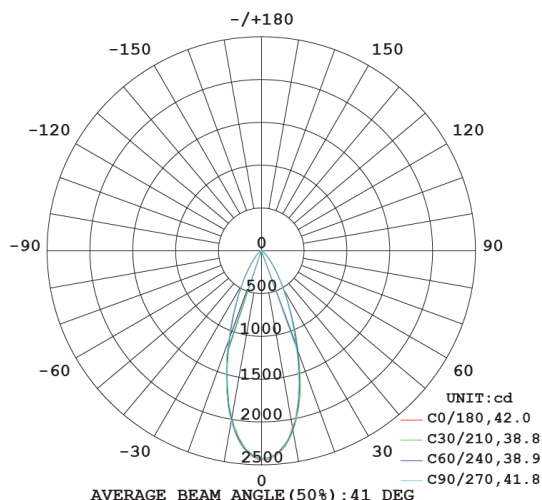
SPECIFICATION SHEET

GALUXPRO



LED Cylinder Aura-IP

Light distribution



Technical Characteristics

Nominal Power	10-14W
Total Lumen	100LM/W
LED Type	COB (Philips)
CCT	3000°k-6000°K
CRI	82
Beam Angle	41°
Protection	IP54
SDCM.	<5
Dimension	H:150*D:90mm
Weight	0.5 Kg
Mounting	Surface
Warranty	5 years

Electrical Characteristics

Power Supply	LED Driver
Voltage Range	220-240V
Power Factor	>0.95
Current (RMS)	0.067mA @14W

Materials

Body	Alu section
Emitting surface	Clear glass
Reflector	Specular

Life time

L70 (hours)	>50000h
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Code	Type	CCT
AuraIP.10.K--	LED Cylinder Surface AuraIP 10W	Variant
AuraIP.12.K--	LED Cylinder Surface AuraIP 12W	Variant
AuraIP.14.K--	LED Cylinder Surface AuraIP 14W	Variant

* K--: describes the CCT of Lighting fixture, Example **K30** define that CCT is 3000°K

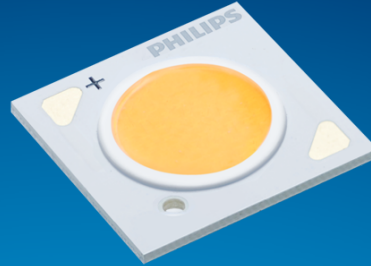
LED Data sheet

PHILIPS

CertaFlux

LED

CertaFlux SLM C 1203 L09
1515 G2



Datasheet

Experience good performance with affordable cost

CertaFlux LED SLM G2

CertaFlux LED SLM is a most cost effective and affordable CoB family from Philips. With upgrade from Gen 1 to Gen 2, 8% efficacy improvement is achieved. On top of this, we extend to 2 new product lines within the family - High Density range and Vivid White range, which can help our OEM customers with more flexibility to develop their luminaires with more extensive portfolio. Flux range from 500lm to 6000m, available in 2700K, 3000K, 3500K, 4000K, 5000K with CRI 80 and CRI90, and fully compatible with our Philips Drivers.

Key features and benefits

- Cost effective SLM CoB
- Complete portfolio
- Flexibility to select a different lumen output between 500lm to 6000m
- System approach (CoB + Driver + Holder)
- Flexibility to design Luminaire performance (high efficacy or high output)
- 50,000 hours lifetime

September 2021



Ordering data

Commercial product name	EOC	12NC	Box quantity
CertaFlux SLM C 827 1203 L09 1515 G2	8719514 282438 00	9290 028 37406	20
CertaFlux SLM C 830 1203 L09 1515 G2	8719514 282452 00	9290 028 37506	20
CertaFlux SLM C 835 1203 L09 1515 G2	8719514 282476 00	9290 028 37606	20
CertaFlux SLM C 840 1203 L09 1515 G2	8719514 282490 00	9290 028 37706	20
CertaFlux SLM C 850 1203 L09 1515 G2	8719514 282513 00	9290 028 37806	20
CertaFlux SLM C 860 1203 L09 1515 G2	8719514 282537 00	9290 028 37906	20
CertaFlux SLM C 927 1203 L09 1515 G2	8719514 282551 00	9290 028 38006	20
CertaFlux SLM C 930 1203 L09 1515 G2	8719514 282575 00	9290 028 38106	20
CertaFlux SLM C 935 1203 L09 1515 G2	8719514 282599 00	9290 028 38206	20
CertaFlux SLM C 940 1203 L09 1515 G2	8719514 282612 00	9290 028 38306	20

Drive currents

Parameter	Nominal*	Life**	Max***	Unit
CertaFlux SLM C 1203 L09 1515 G2	350	700	700	mA

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _c (case temperature at T _c point)	85	95	105	°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

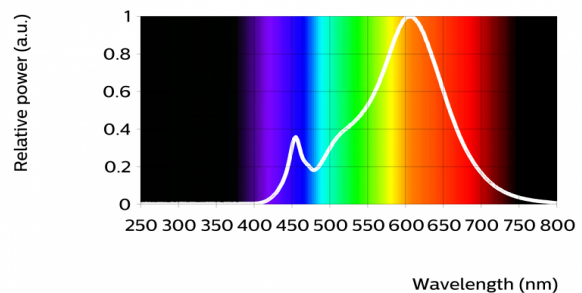
Optical characteristics - table per color (CCT)

CertaFlux SLM C 827 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1436	1544	1698	lm
Module efficacy		128		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.458, 0.410)		-
Color consistency			3	SDCM
CRI	82	82		
Photometric code		827/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	827	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1392	144
	Tc 85 °C	1269	134
	Tc 95 °C	1222	130
I-nom 350mA	Tc 25 °C	1702	138
	Tc 85 °C	1544	128
	Tc 95 °C	1483	124
I-max 700mA	Tc 25 °C	3059	114
	Tc 85 °C	2721	104
	Tc 95 °C	2590	99



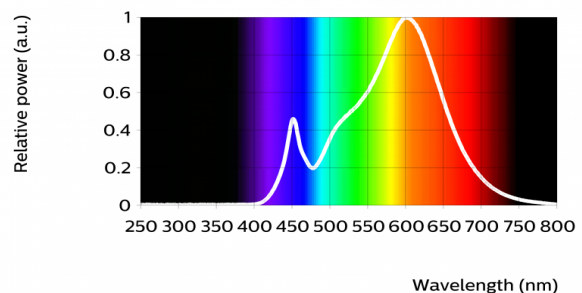
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82	93	94	81	83	93	81	57	8	85	82	80	85	97

CertaFlux SLM C 830 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1514	1628	1790	lm
Module efficacy		135		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			3	SDCM
CRI	82	82		
Photometric code		830/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	830	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1468	152
	Tc 85 °C	1338	142
	Tc 95 °C	1288	137
I-nom 350mA	Tc 25 °C	1795	146
	Tc 85 °C	1628	135
	Tc 95 °C	1563	131
I-max 700mA	Tc 25 °C	3226	120
	Tc 85 °C	2870	109
	Tc 95 °C	2732	105



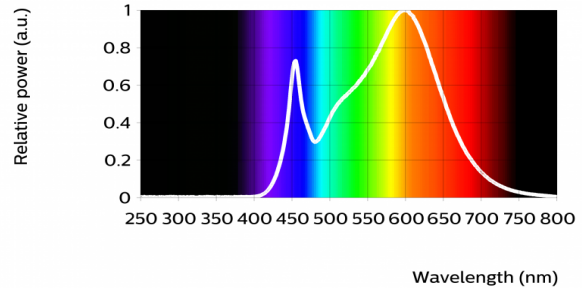
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81	91	96	81	82	90	83	58	4	80	81	75	83	98

CertaFlux SLM C 835 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1546	1663	1829	lm
Module efficacy		138		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.407, 0.392)		-
Color consistency			3	SDCM
CRI	82	82		
Photometric code		835/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	835	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1499	155
	Tc 85 °C	1367	145
	Tc 95 °C	1316	140
I-nom 350mA	Tc 25 °C	1833	149
	Tc 85 °C	1663	138
	Tc 95 °C	1597	133
I-max 700mA	Tc 25 °C	3296	123
	Tc 85 °C	2933	112
	Tc 95 °C	2792	107



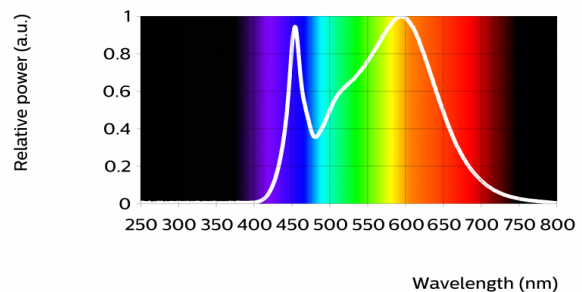
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82	93	95	81	83	90	83	61	8	83	81	72	85	98

CertaFlux SLM C 840 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1579	1697	1867	lm
Module efficacy		141		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.382, 0.380)		-
Color consistency			3	SDCM
CRI	82	82		
Photometric code		840/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	840	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1530	158
	Tc 85 °C	1395	148
	Tc 95 °C	1343	143
I-nom 350mA	Tc 25 °C	1871	152
	Tc 85 °C	1697	141
	Tc 95 °C	1630	136
I-max 700mA	Tc 25 °C	3366	126
	Tc 85 °C	2996	114
	Tc 95 °C	2851	109



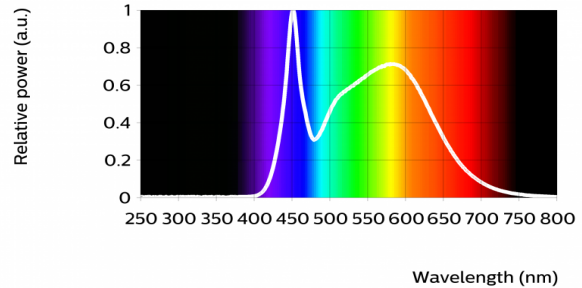
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82	91	96	81	82	88	84	62	5	81	81	67	84	98

CertaFlux SLM C 850 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1579	1698	1868	lm
Module efficacy		141		lm/W
Correlated color temperature (CCT)		5000		K
Color coordinates (CIEx, CIEy)		(0.345, 0.355)		-
Color consistency			3	SDCM
CRI	82	82		
Photometric code		850/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	850	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1531	158
	Tc 85 °C	1396	148
	Tc 95 °C	1344	143
I-nom 350mA	Tc 25 °C	1872	152
	Tc 85 °C	1698	141
	Tc 95 °C	1631	136
I-max 700mA	Tc 25 °C	3369	126
	Tc 85 °C	2999	114
	Tc 95 °C	2855	109



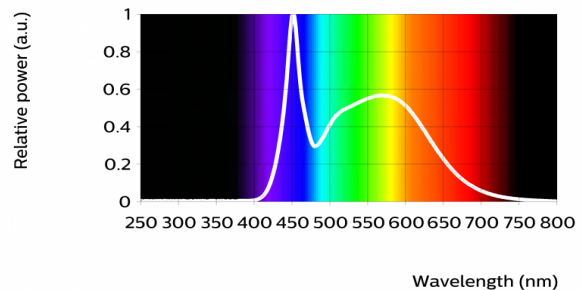
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81	88	94	82	82	84	86	66	3	72	82	67	82	97

CertaFlux SLM C 860 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1580	1699	1869	lm
Module efficacy		141		lm/W
Correlated color temperature (CCT)		6000		K
Color coordinates (CIEx, CIEy)		(0.322, 0.337)		-
Color consistency			3	SDCM
CRI	82	82		
Photometric code		860/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	860	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1531	158
	Tc 85 °C	1396	148
	Tc 95 °C	1344	143
I-nom 350mA	Tc 25 °C	1873	152
	Tc 85 °C	1699	141
	Tc 95 °C	1632	136
I-max 700mA	Tc 25 °C	3372	126
	Tc 85 °C	3002	114
	Tc 95 °C	2859	110



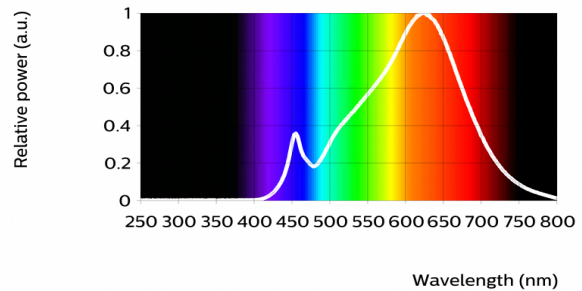
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
81	88	93	82	82	82	88	68	5	72	82	64	83	96

CertaFlux SLM C 927 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1222	1314	1445	lm
Module efficacy		109		lm/W
Correlated color temperature (CCT)		2700		K
Color coordinates (CIEx, CIEy)		(0.458, 0.410)		-
Color consistency			3	SDCM
CRI	92	92		
R9	50			
Photometric code		927/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	927	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1185	123
	Tc 85 °C	1080	114
	Tc 95 °C	1040	111
I-nom 350mA	Tc 25 °C	1449	118
	Tc 85 °C	1314	109
	Tc 95 °C	1261	105
I-max 700mA	Tc 25 °C	2602	97
	Tc 85 °C	2315	88
	Tc 95 °C	2203	84



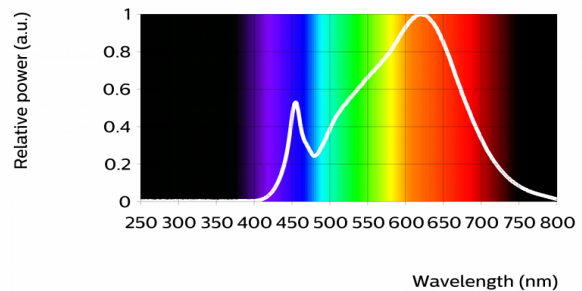
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
93	97	99	93	93	97	92	82	60	92	95	86	94	99

CertaFlux SLM C 930 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1286	1383	1521	lm
Module efficacy		115		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.434, 0.403)		-
Color consistency			3	SDCM
CRI	92	92		
R9	50			
Photometric code		930/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	930	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1247	129
	Tc 85 °C	1137	120
	Tc 95 °C	1094	117
I-nom 350mA	Tc 25 °C	1525	124
	Tc 85 °C	1383	115
	Tc 95 °C	1328	111
I-max 700mA	Tc 25 °C	2740	102
	Tc 85 °C	2437	93
	Tc 95 °C	2319	89



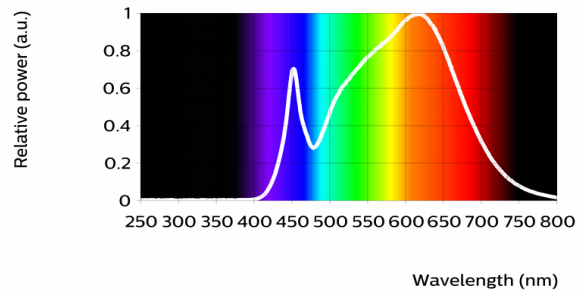
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
93	96	98	93	93	95	93	83	61	90	93	81	94	98

CertaFlux SLM C 935 1203 L09 1515 G2

Parameter	Min	Typ	Max	Unit
Luminous flux	1364	1467	1613	lm
Module efficacy		122		lm/W
Correlated color temperature (CCT)		3500		K
Color coordinates (CIEx, CIEy)		(0.407, 0.392)		-
Color consistency			3	SDCM
CRI	92	92		
R9	50			
Photometric code		935/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	935	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1322	137
	Tc 85 °C	1206	128
	Tc 95 °C	1161	124
I-nom 350mA	Tc 25 °C	1617	131
	Tc 85 °C	1467	122
	Tc 95 °C	1408	118
I-max 700mA	Tc 25 °C	2907	108
	Tc 85 °C	2587	98
	Tc 95 °C	2462	94



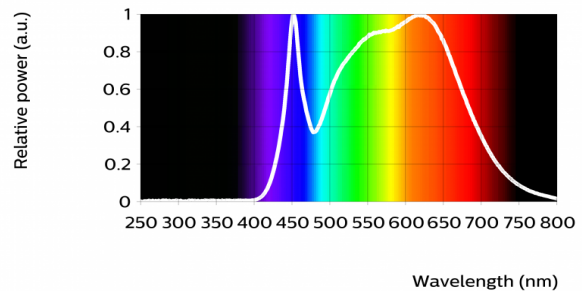
R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
92	94	96	92	91	92	93	83	59	86	92	77	92	97

CertaFlux SLM C 940 1203 L09 1515 G2

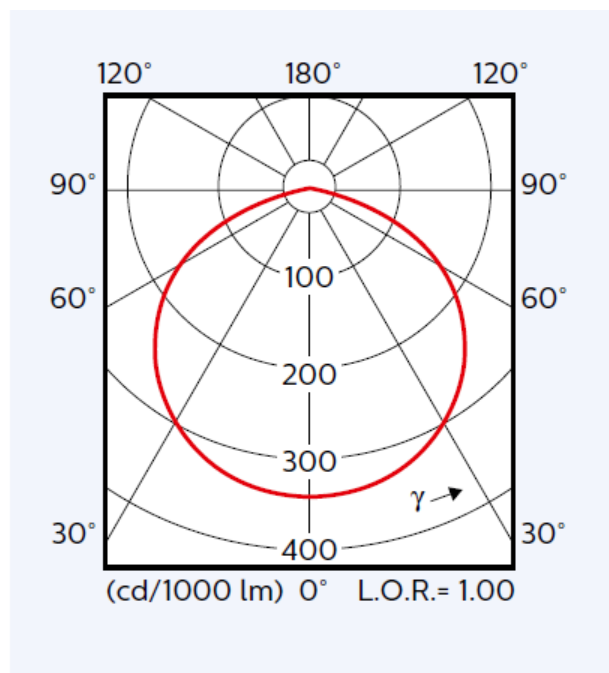
Parameter	Min	Typ	Max	Unit
Luminous flux	1364	1467	1614	lm
Module efficacy		122		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.382, 0.380)		-
Color consistency			3	SDCM
CRI	92	92		
R9	50			
Photometric code		940/359		
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	940	lm	lm/W
80% I-nom 280mA	Tc 25 °C	1322	137
	Tc 85 °C	1206	128
	Tc 95 °C	1161	124
I-nom 350mA	Tc 25 °C	1617	131
	Tc 85 °C	1467	122
	Tc 95 °C	1408	118
I-max 700mA	Tc 25 °C	2907	108
	Tc 85 °C	2587	98
	Tc 95 °C	2462	94



R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
93	94	94	94	92	93	96	89	71	85	93	74	94	96



Electrical characteristics

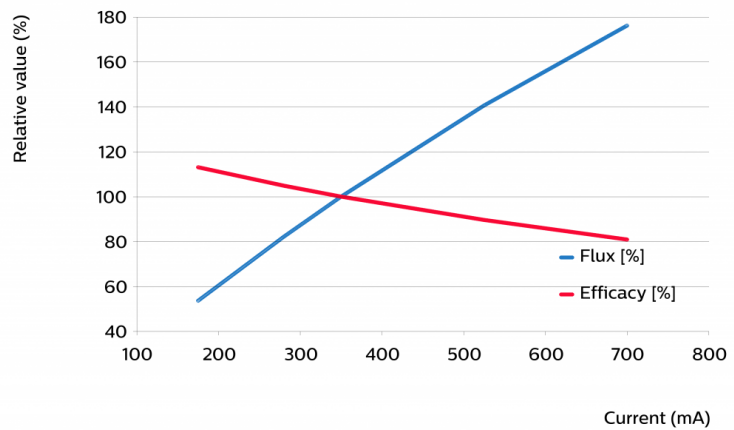
Parameter	Min	Typ	Max	Unit
Forward voltage	32.4	34.4	36.4	V
Power consumption	11.3	12.1	12.7	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules in parallel			1	

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

Tuning information

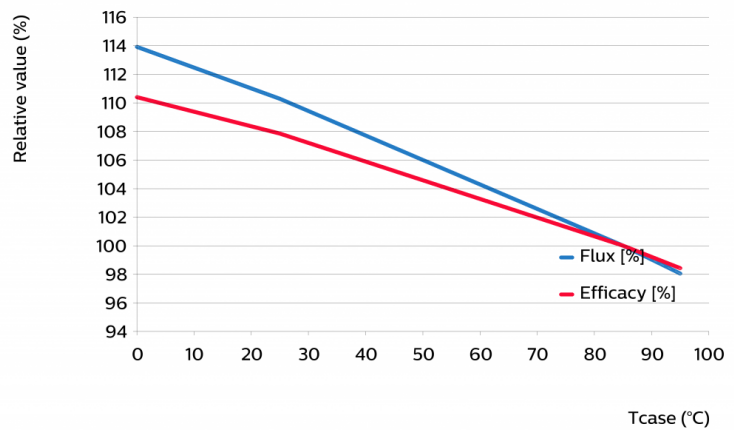
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
700	176	81
525	141	90
350	100	100
280	82	105
175	54	113



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

Tc [°C]	Flux [%]	Efficacy [%]
95	98	98
85	100	100
25	110	108
0	114	110



Lumen maintenance

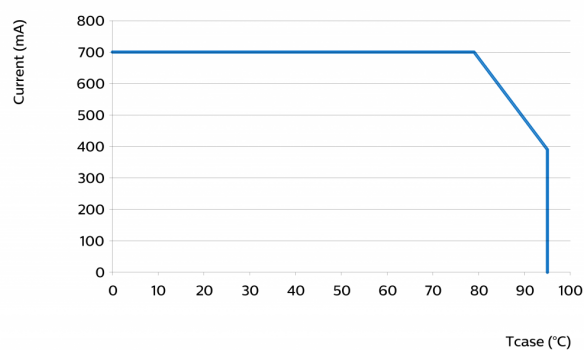
Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 280 mA	Tc 75°C	>50	>50	>50	49	41	38	23	19	18
	Tc 85°C	>50	>50	>50	44	37	34	21	17	16
	Tc 95°C	>50	>50	>50	41	34	31	19	16	15
I-nom 350 mA	Tc 75°C	>50	>50	>50	47	39	36	22	18	17
	Tc 85°C	>50	>50	>50	42	36	33	20	17	15
	Tc 95°C	>50	>50	48	39	33	30	18	15	14
I-max 700 mA	Tc 75°C	47	39	36	29	24	22	13	11	10
	Tc 85°C	42	35	32	26	22	20	12	10	9
	Tc 95°C	38	32	29	23	20	18	11	9	8

Lifetime

Parameter	Value	Unit
M70F50 nominal	>50000	hours
M70F50 life	>50000	hours

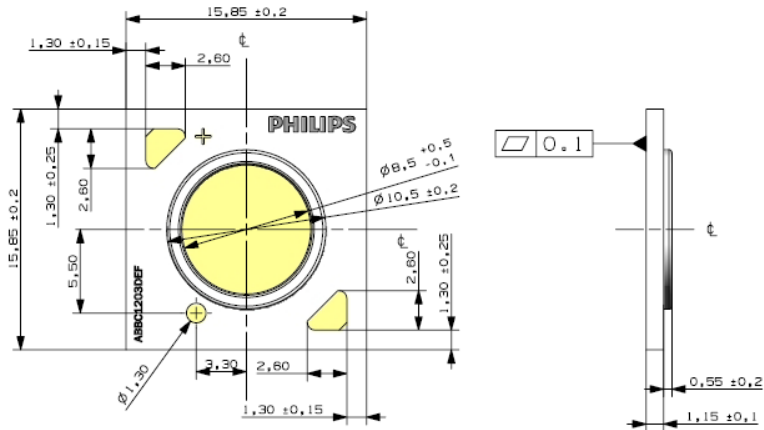
Switching cycles in accordance to EU 1194/2012: >15000.

Performance Window



Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	15.65	15.85	16.05	mm
Width	15.65	15.85	16.05	mm
Height PCB	1.05	1.15	1.25	mm
Height including dam	1.4	1.7	2	mm
Product mass		0.76		gram



Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		700	mA
Case temperature (Tc-max)		105	°C
ESD (direct contact)	8		kV
Working voltage		60	V _{dc}
Ambient temperature	-20	40	°C
Storage temperature	-40	80	°C

Application information

Certificates and Standards

IEC/EN 62031
IEC/TR 62778
UL 8750
CE
UL

Application

Dimming	Yes
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07/09/2021

LM-80 Test Report



CertaFlux LED SLM G2

Lumen Maintenance Report ID 2020L003

Introduction

This document provides the LM-80 test data of the LED used in the products listed below.

Products covered by this report

CertaFlux SLM C *zcc d* 1201 L06 1313 G2 *a*
CertaFlux SLM C *zcc d* 1202 L09 1515 G2 *a*
CertaFlux SLM C *zcc d* 1203 L09 1515 G2 *a*
CertaFlux SLM C *zcc d* 1204 L12 1818 G2 *a*
CertaFlux SLM C *zcc d* 1205 L12 1818 G2 *a*
CertaFlux SLM C *zcc d* 1208 L14 1818 G2 *a*
CertaFlux SLM C *zcc d* 1201 L04 1313 G2 HD
CertaFlux SLM C *zcc d* 1202 L06 1313 G2 HD
CertaFlux SLM C *zcc d* 1204 L09 1515 G2 HD

z: can be 8 or 9
cc: can be a number between 27 and 65
d: can be VW
a: optional suffix for commercial purpose

Description of the LED tested

Parameter	Value
Type	CertaFlux SLM C 927 1216 L23 2828 G2
CRI / CCT	CRI 90 / 2700K
T _{case} , Test current *	105/85°C @2400mA (150mA/die for non-HD types) 105/85°C @3200mA (200mA/die for non-HD types)

* Note: Equivalent current for the other types of CertaFlux SLM G2 can be determined by the table below.

1216 L23	2400mA	3200mA
1201 L06	150mA	200mA
1202 L09	300mA	400mA
1203 L09	450mA	600mA
1204 L12	600mA	800mA
1205 L12	750mA	1000mA
1208 L14	1200mA	1600mA
1201 L04 HD	113mA	150mA
1202 L06 HD	225mA	300mA
1204 L09 HD	450mA	600mA

Table 1. Normalized Lumen Maintenance and Chromaticity Shift ($\Delta u'v'$), $I_f = 2400\text{mA}$ (150mA/die for non-HD types)

		1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	α	B	Reported L70
105°C	Avg. $lm\%$	100.0%	99.6%	99.3%	98.9%	98.6%	98.2%	97.8%	97.4%	96.9%	96.5%	96.1%	4.305E-06	1.007	>61000
	Avg. $\Delta u'v'$	0.0003	0.0004	0.0006	0.0008	0.0012	0.0016	0.0013	0.0015	0.0016	0.0012	0.0015			
85°C	Avg. $lm\%$	100.0%	99.7%	99.5%	99.1%	98.8%	98.5%	98.1%	97.7%	97.3%	96.9%	96.5%	3.909E-06	1.008	>61000
	Avg. $\Delta u'v'$	0.0003	0.0003	0.0005	0.0011	0.0014	0.0015	0.0014	0.0016	0.0014	0.0012	0.0015			

Limited by TM-21 rule, the reported lifetime cannot be extrapolated beyond 5.5x the test time (61000hrs).

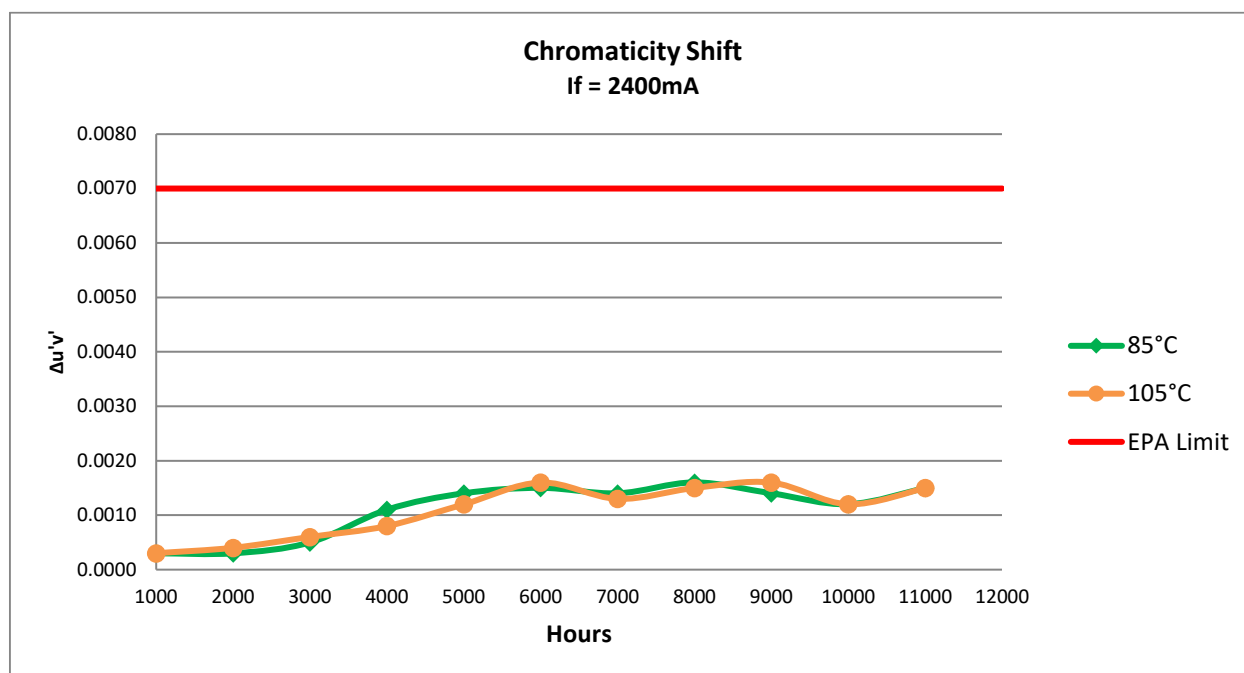
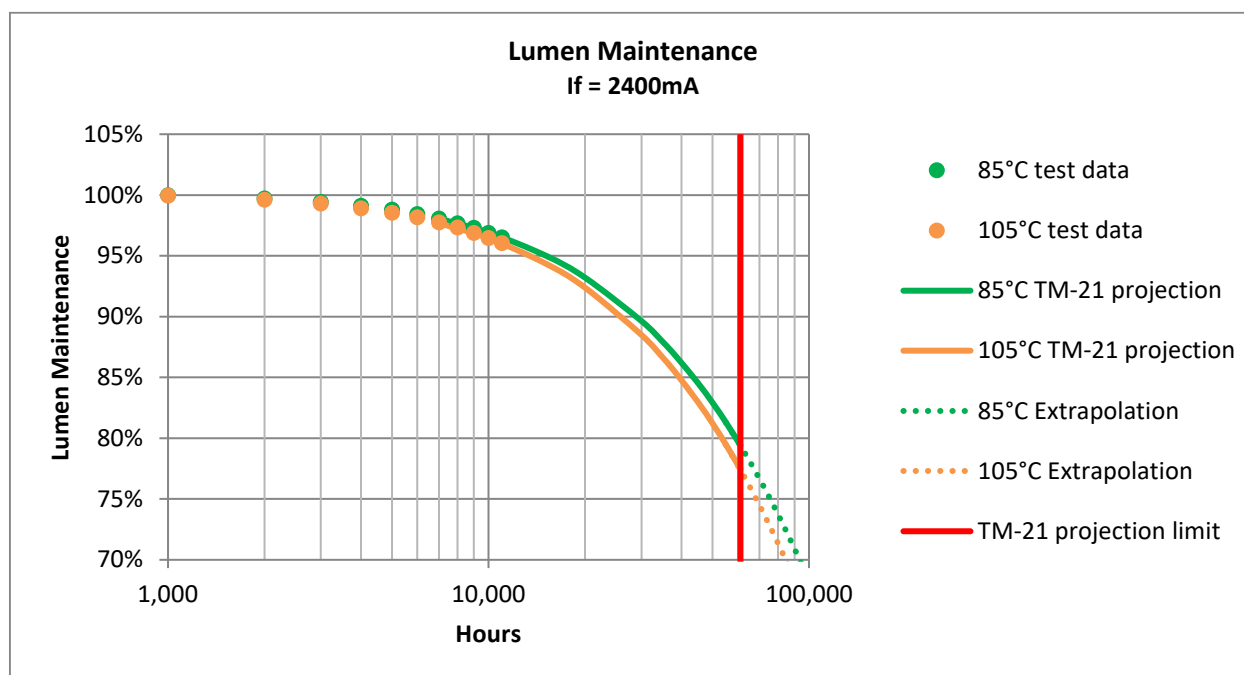
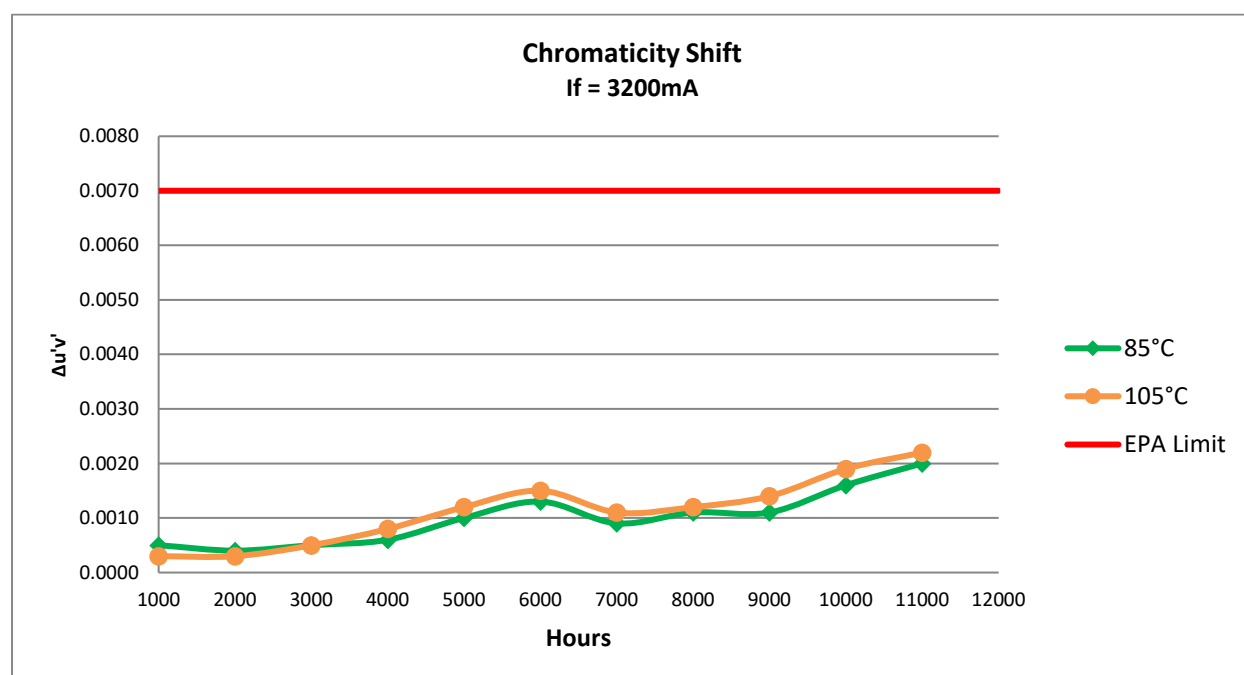
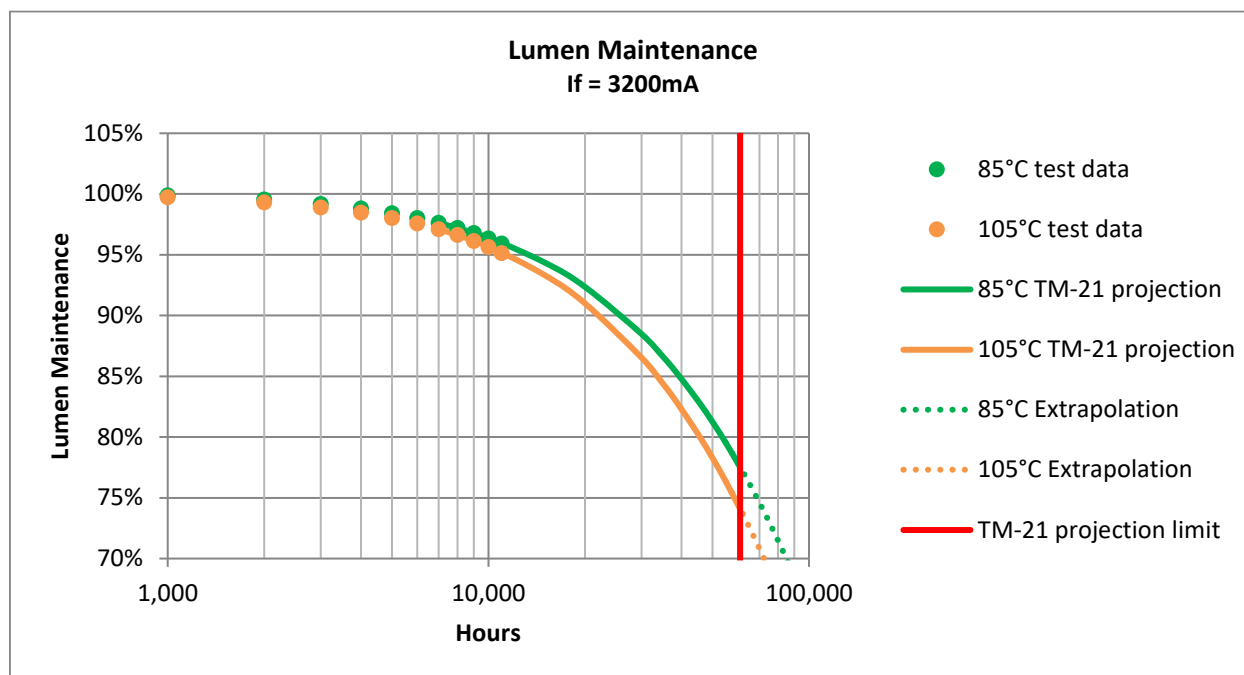


Table 2. Normalized Lumen Maintenance and Chromaticity Shift ($\Delta u'v'$), $I_f = 3200\text{mA}$ (200mA/die for non-HD types)

		1000	2000	3000	4000	5000	6000	7000	8000	9000	10000	11000	α	B	Reported L70
105°C	Avg. $lm\%$	99.7%	99.3%	98.9%	98.5%	98.0%	97.6%	97.1%	96.6%	96.1%	95.7%	95.1%	5.014E-06	1.006	>61000
	Avg. $\Delta u'v'$	0.0003	0.0003	0.0005	0.0008	0.0012	0.0015	0.0011	0.0012	0.0014	0.0019	0.0022			
85°C	Avg. $lm\%$	99.9%	99.6%	99.2%	98.8%	98.4%	98.0%	97.6%	97.2%	96.8%	96.4%	95.9%	4.270E-06	1.006	>61000
	Avg. $\Delta u'v'$	0.0005	0.0004	0.0005	0.0006	0.0010	0.0013	0.0009	0.0011	0.0011	0.0016	0.0020			

Limited by TM-21 rule, the reported lifetime cannot be extrapolated beyond 5.5x the test time (61000hrs).





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Driver Data sheet

option 1

 GUANGDONG DONE POWER TECHNOLOGY CO.,LTD Service hotline: 400 0760 585 Website: www.donepower.com.cn	Application	DONE WATERPROOF LED DRIVER		
	Product Line	DL-12W-MCC	REV.	1. 1

Guangdong DonePower Technology Co.,Ltd.

SPECIFICATION

CUSTOMER			
MODEL NO.	DL-12W-MCC		
VERSION	V1. 1		
CUSTOMER			
TEST	CHECK	APPROVE	
CUSTOMER REMARKS			
Please return to us one copy of "SPECIFICATION FOR APPROVAL" with you approved signature.			
MANUFACTURE			
EDIT	CHECK	APPROVE	
Guangdong DonePower Technology Co.,Ltd. No. 3-1&3-2, Kanglong 3rd Road, XinMao Industry Zone, Henglan Town, Zhongshan City, Guangdong Province, P.R. China Post code:528478 TEL:0760-89838399 89838379 FAX:0760-89831157 89838396			

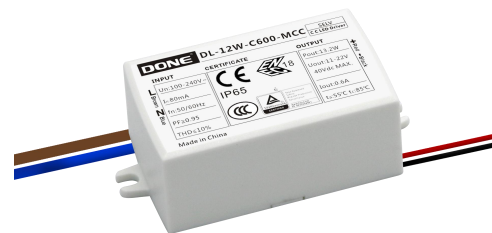
■ VERSION

[illegible]

DONE GUANGDONG DONE POWER TECHNOLOGY CO.,LTD Service hotline: 400 0760 585 Website: www.donepower.com.cn	Application	DONE WATERPROOF LED DRIVER		
	Product Line	DL-12W-MCC	REV.	1.1

FEATURES

- ◇ Class II structure
- ◇ Input Voltage:100-240V ~ 50/60Hz
- ◇ Input 230Vac, full load output, maximum efficiency up to 86%
- ◇ PF > 0.95 & THD < 10%
- ◇ Lightning surge : differential mode L-N Class II +/- 2 KV (2 ohm) 2KV
refer to IEC61000-4-5 2014
- ◇ With CCC, TUV, CE, SAA certification
- ◇ Long life design , 5 years warranty
- ◇ Internal glue , level of protection : IP65



TYPICAL APPLICATIONS

Indoor household lighting. Indoor commercial lighting.

Outdoor commercial lighting



MODEL LIST

Model	AC Input	Output power	Output voltage	Output current	Efficiency (Typ.)	THD	PF
DL-12W-C700-MCC	100-240V 50/60Hz	14W	11-20Vdc	0.7A	>84%	<10%	>0.95
DL-12W-C600-MCC	100-240V 50/60Hz	13.2W	11-22Vdc	0.6A	>84%	<10%	>0.93
DL-12W-C500-MCC	100-240V 50/60Hz	12.5W	11-25Vdc	0.5A	>84%	<10%	>0.9
DL-12W-C400-MCC	100-240V 50/60Hz	10W	11-25Vdc	0.4A	>84%	<15%	>0.9
DL-12W-C350-MCC	100-240V 50/60Hz	14.7W	21~42Vdc	0.35A	>84%	<10%	>0.95
DL-12W-C300-MCC	100-240V 50/60Hz	12.6W	21~42Vdc	0.3A	>84%	<10%	>0.93
DL-12W-C270-MCC	100-240V 50/60Hz	11.3W	21~42Vdc	0.27A	>84%	<15%	>0.9
DL-12W-C240-MCC	100-240V 50/60Hz	10.1W	21~42Vdc	0.24A	>84%	<15%	>0.9
DL-12W-C210-MCC	100-240V 50/60Hz	8.8W	21~42Vdc	0.21A	>84%	<15%	>0.9

Remark :

1. Default tested at 230Vac,full load with 30 minutes,Ta:25℃.

 GUANGDONG DONE POWER TECHNOLOGY CO.,LTD Service hotline: 400 0760 585 Website: www.donepower.com.cn	Application	DONE WATERPROOF LED DRIVER		
	Product Line	DL-12W-MCC	REV.	1. 1

■ SPECIFICATION

◇ INPUT

Rated voltage	100 - 240Vac
Rated frequency	50/60Hz
Power factor(PF)	PF>0.9 @230Vac full load
Total harmonic distortion(THD)	THD<10% @230Vac full load
Input current	I _{in} <0.28A @100Vac full load
Inrush current (Typ.)	Cold start (25°C)<70A @230Vac

◇ OUTPUT

Model	DL-12W-C700-MCC	DL-12W-C600-MCC	DL-12W-C500-MCC	DL-12W-C400-MCC	DL-12W-C350-MCC	DL-12W-C300-MCC	DL-12W-C270-MCC	DL-12W-C240-MCC	DL-12W-C210-MCC
Rated current	700mA	600mA	500mA	400mA	350mA	300mA	270mA	240mA	210mA
Output voltage range	11~20Vdc	11~22Vdc	11~25Vdc	11~25Vdc	21~42Vdc	21~42Vdc	21~42Vdc	21~42Vdc	21~42Vdc
Rated output power	14W	13.2W	12.5W	10W	14.7W	12.6W	11.3W	10.1W	8.8W
No load voltage	40V MAX.	40V MAX.	40V MAX.	40V MAX.	60V MAX.	60V MAX.	60V MAX.	60V MAX.	60V MAX.
Efficiency @230Vac full load (Typ.)	>84%	>84%	>84%	>84%	>84%	>84%	>84%	>84%	>84%
Accuracy off output current	±6%	±6%	±6%	±6%	±6%	±6%	±6%	±7%	±7%
Line regulation	±5%								
Load regulation	±5%								
Setup time	<500ms @ 230Vac								

 GUANGDONG DONE POWER TECHNOLOGY CO.,LTD Service hotline: 400 0760 585 Website: www.donepower.com.cn	Application	DONE WATERPROOF LED DRIVER		
	Product Line	DL-12W-MCC	REV.	1. 1

◇ Protection

Over Load Protection	Protection mode: hiccup restart mode, automatic recovery after removal of abnormal load conditions.
Short Circuit Protection	Doze mode, can automatically recover after abnormal conditions are removed.
Over Voltage Protection	Protection mode: hiccuping or clamping in output maximum voltage ,Production undamaged,When troubleshooting,Normal operation of power supply.

Remarks:

1. All specifications are tested at 230Vac (50Hz) , rated load, and Ta:25°C.
2. Including setting error, linear adjustment rate and load adjustment rate.
- 3.Constant current mode operates under rated output voltage of 50%~100%, suitable for LED and other related industries

■ ENVIRONMENT

Working temperature	-40 ~ +55°C (Refer to "Derating Curve")
Working humidity	20 ~ 95% RH,non-condensing
Storage temperature/humidity	-40~+85°C, 10 ~ 95% RH
Resistant to vibration	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes
High-pot test	I/P-O/P:3.75KVAC
Insulation resistance	I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH
MTBF	470K hrs min. MIL-HDBK-217F (Ta=25°C)

■ SAFETY & EMC

Safety	GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS/NZS61347.2.13 ; GB19510.1、GB19510.14、EN61347-1、EN61347-2-13、IEC61347-1、IEC61347-2-13、AS/NZS61347.1、AS/NZS61347.2.13 ;
EMC	EN 55015、EN 61000-3-2 、GB/T 17743、GB17625.1、 EN 61000-3-3
Surge level	difference module L-N Class II +/- 2 KV (2 ohm) (IEC61000-4-5 2014)
Leakage current	<0.7mA / 230Vac

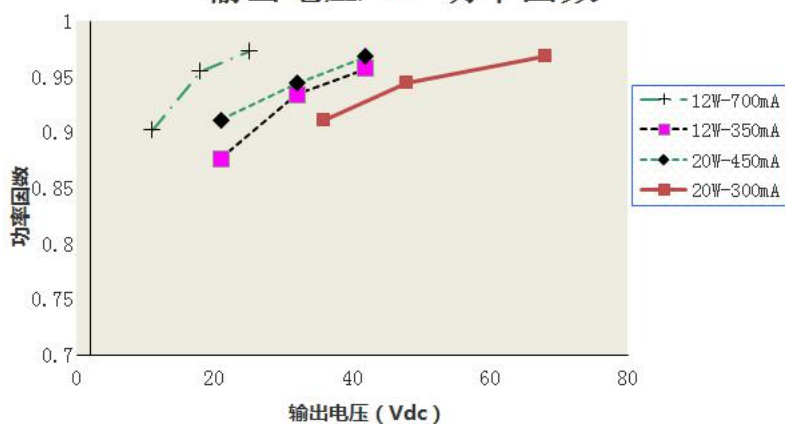
Remarks:

The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

DONE GUANGDONG DONE POWER TECHNOLOGY CO.,LTD Service hotline: 400 0760 585 Website: www.donepower.com.cn	Application	DONE WATERPROOF LED DRIVER		
	Product Line	DL-12W-MCC	REV.	1.1

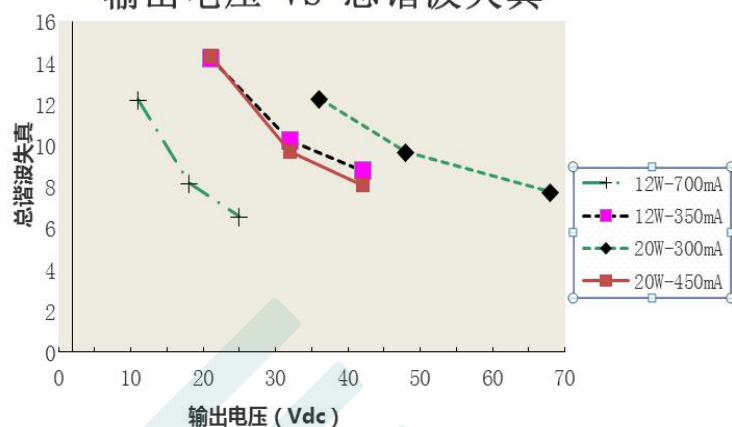
■ Vout VS PF

输出电压 VS 功率因数



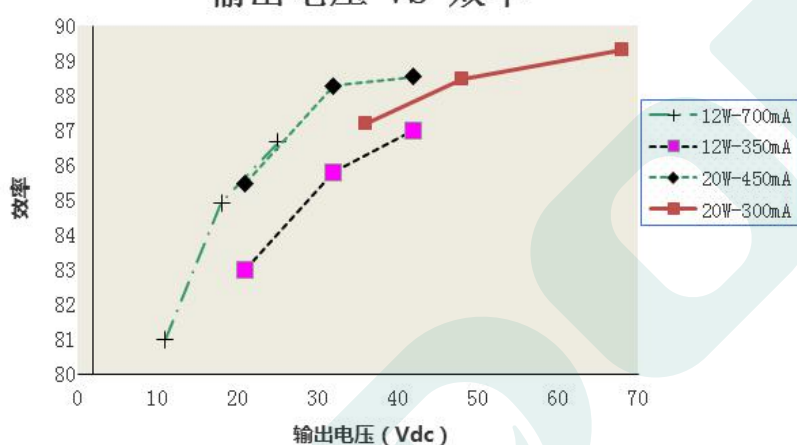
■ Vout VS THD

输出电压 VS 总谐波失真



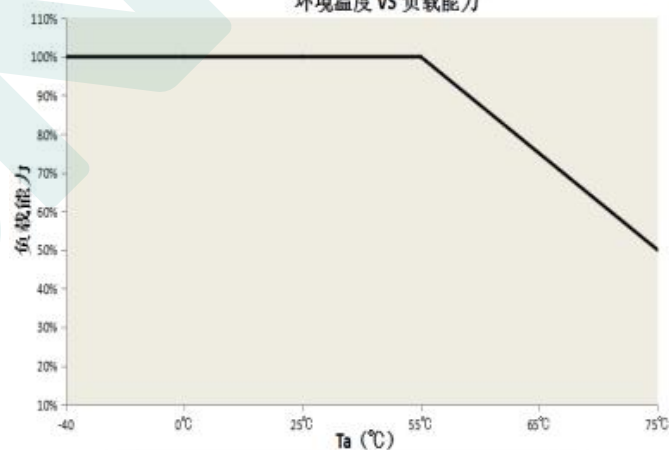
■ Vout VS Efficiency

输出电压 VS 效率



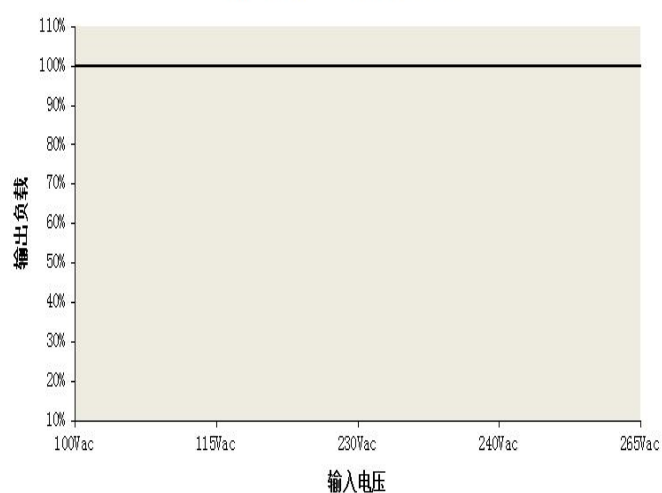
■ Load reduction curve

环境温度 vs 负载能力



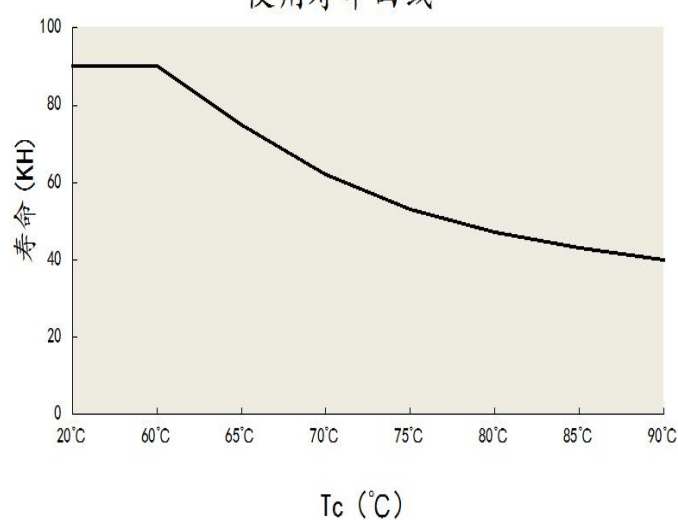
■ Pout VS Vin

输入电压VS输出负载



■ Tc VS Life

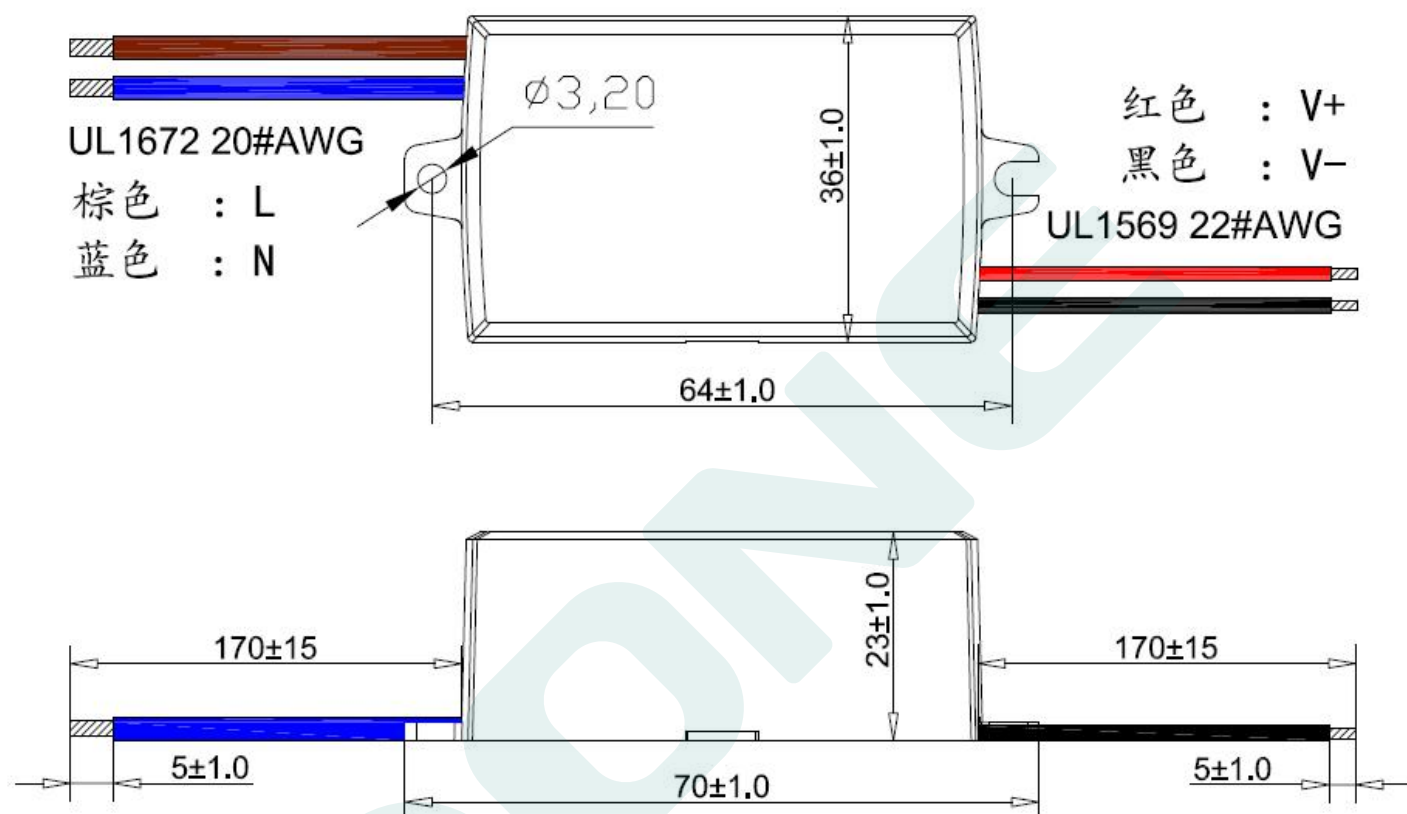
使用寿命曲线



DONE GUANGDONG DONE POWER TECHNOLOGY CO.,LTD Service hotline: 400 0760 585 Website: www.donepower.com.cn	Application	DONE WATERPROOF LED DRIVER		
	Product Line	DL-12W-MCC	REV.	1.1

■ MACHINE SIZE MAP:

Size (mm)	L70xW36xH23mm
Pack	/



■ WEIGHT

Weight	82g
--------	-----

Warn:

1. According to the certificate obtained by the power supply, the LED DRIVER with English label is applicable to luminaires sold in Europe, America and India;
2. The LED DRIVER with Chinese label is only used for luminaires sold to China.

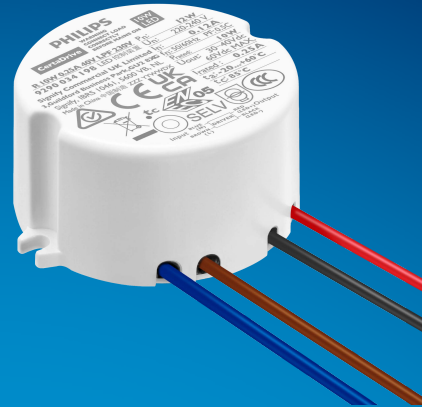
Driver Data sheet

option 2

PHILIPS

CertaDrive

LED driver



Datasheet

CertaDrive

CertaDrive R 10W 0.25A 40V LPF 230V

9290 034 19880

Affordable and reliable LED Drivers

Affordable LED Driver range offering Philips reliability. The CertaDrive range is compatible with COB and mid-power LEDs from any LED manufacturer.

Benefits

- Driver design based on Philips experience and knowledge of conventional fluorescent and HID technologies
- Various power wattage Drivers that are related to the lumen packages/applications
- Fixed output Drivers
- Independent-version housing design for stand-alone installations

Features

- High reliability
- Luminaire design flexibility to keep stable/constant
- Lumen output and light quality levels
- Fast Time to Market
- One supplier for professional general lighting LED Drivers
- Affordable LED Drivers

Application

- Public buildings (airports, cinemas, theaters, exhibition halls)
- Retail (supermarkets, shops)
- Office

Electrical input data

Specification item	Value	Unit	Condition
Rated input voltage range	220...240	V _{ac}	Performance range
Rated input voltage	230	V _{ac}	
Rated input frequency range	50...60	Hz	Performance range
Rated input current	0.12	A	@ rated output power @ rated input voltage
Rated input power	12	W	@ rated output power @ rated input voltage
Nominal Power factor	0.5		@ rated output power @ rated input voltage
Efficiency	82	%	@ rated output power @ rated input voltage @max. U _{out}
Input voltage AC range	198...264	V _{ac}	Operational range
Input frequency AC range	47.5...63	Hz	Operational range
Isolation input to output	SELV		

Electrical output data

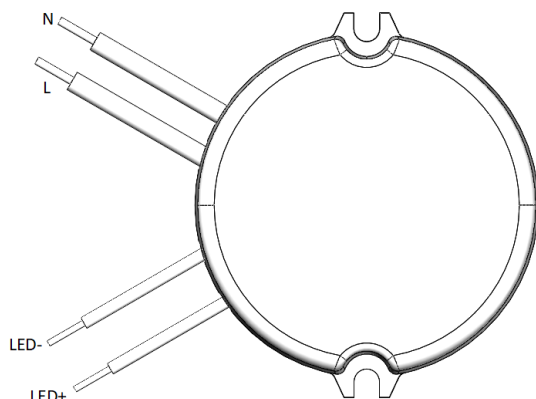
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	30...40	V _{dc}	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	0.25	A	
Output current tolerance ±	10	%	
Output current ripple LF	≤ 3	%	Ripple = peak / average, < 3kHz
Output current ripple HF	≤ 15	%	Ripple = peak to average total
Output P _{st} ^{LM}	≤ 0.02		In entire operating window
Output SVM	≤ 0.07		In entire operating window
Output power	7.5...10	W	

Electrical data controls input

Specification item	Value	Unit	Condition
Control method	Fixed		

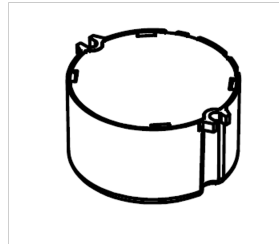
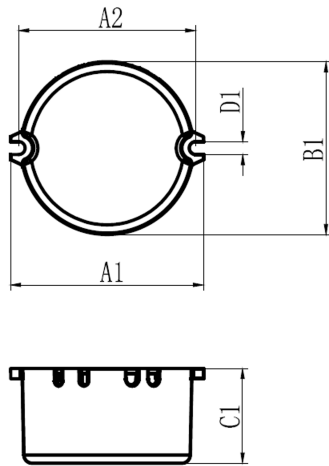
Wiring and Connections

Specification item	Value	Unit	Type
Maximum cable length	0.6	m	Total length of wiring including LED module, one way



Dimensions and weight

Specification item	Value	Unit	Tolerance (mm)
Length (A1)	47	mm	± 0.3
Mounting hole distance (A2)	43.1	mm	± 0.3
Width (B1)	42	mm	± 0.3
Height (C1)	23	mm	± 0.3
Mounting hole diameter (D1)	3.1	mm	± 0.1
Weight	53	gram	



Logistical data

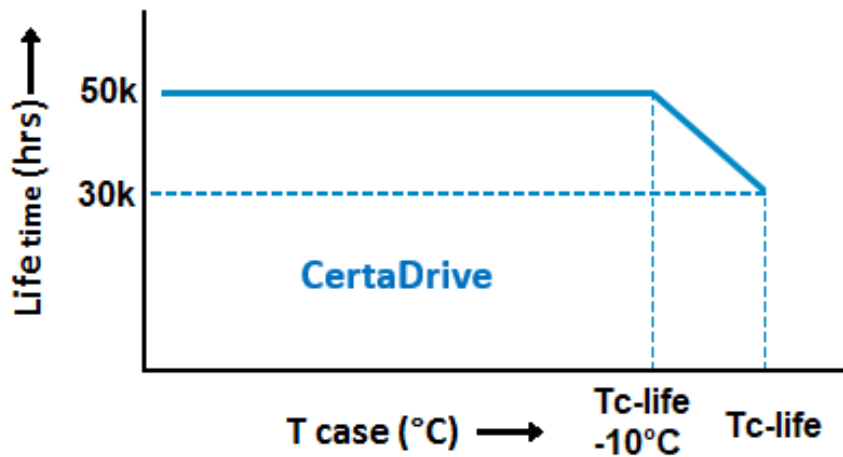
Specification item	Value
Product name	CertaDrive R 10W 0.25A 40V LPF 230V
Logistic code 12NC	9290 034 19880
Pieces per box	105

Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+60	°C	Higher ambient temperature allowed as long as T _{case-max} is not exceeded
T _{case-max}	85	°C	Maximum temperature measured at T _{case} -point
T _{case-life}	85	°C	Measured at T _{case} -point
Maximum housing temperature	130	°C	In case of a failure, inherent by design
Relative humidity	10...90	%	Non-condensing

Lifetime

Specification item	Value	Unit	Condition
Driver lifetime	30,000	hours	Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10%
Driver lifetime	50,000	hours	Measured temperature at Tcase-point is Tcase-life -10 degrees. Maximum failures = 10%



Storage temperature and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-25...+85	°C	
Relative humidity	5...95	%	Non-condensing

Programmable features

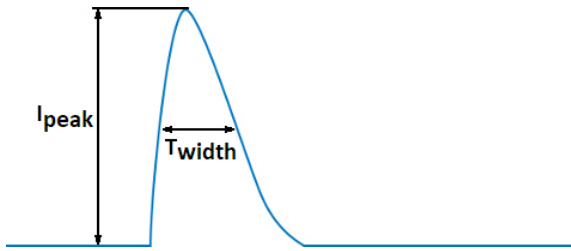
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)	No	250 mA	Fixed output current
LED Module Temperature Protection (MTP)	No		
Driver Temperature Limit (DTL)	No		
Constant Light Output (CLO)	No		
Corridor Mode	No		
DC emergency (DCemDim)	No		
Energy metering (DALI part 252)	No		
Diagnostics	No		

Features

Specification item	Value		Condition
Open load protection	Yes		Automatic recovering
Short circuit protection	Yes		Automatic recovering
Over power protection	Yes		Automatic recovering
Hot wiring	No		
Suitable for fixtures with protection class	II		per IEC60598

Inrush current

Specification item	Value	Unit	Condition
Inrush current	8.5	A	Input voltage 230V
Inrush peak width	220	μs	Input voltage 230 V, measured at 50% height
Drivers / MCB 16A type B	≤ 62	pcs	Indicative value at 230V



Please refer to the driver design in guide if you use other MCB-types.

Driver touch current / protective conductor current / earth leakage current

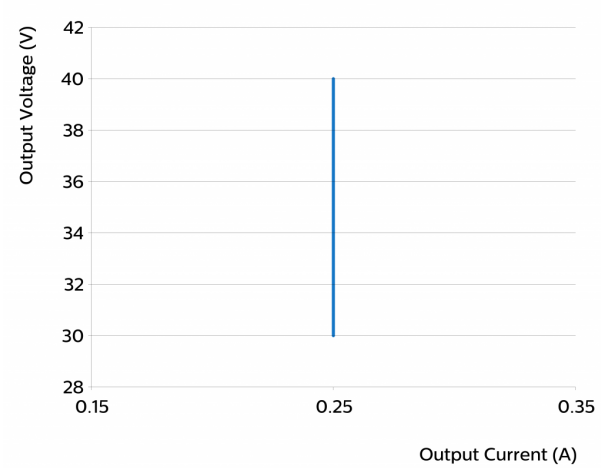
Specification item	Value	Unit	Condition
Typical Touch Current (ins. Class II)	0.7	mA peak	Acc. IEC61347-1. LED module contribution not included

Surge immunity

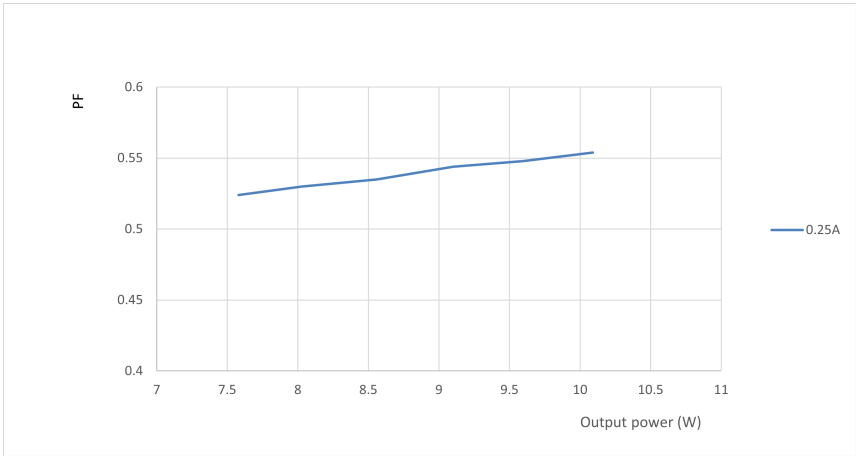
Specification item	Value	Unit	Condition
Mains surge immunity (diff. mode)	1	kV	Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us
Mains surge immunity (comm. mode)	2	kV	Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us

Application Info

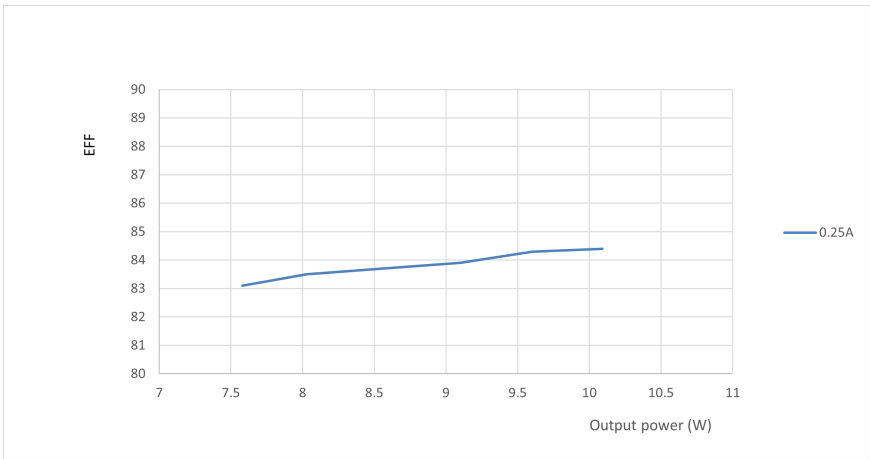
Specification item	Value
Approval marks and Certifications	CB / CCC / CE / ENEC / RCM / TISI
Ingress Protection classification (IP)	20
Noise and hum dB(A)	20
Application	Indoor Point
Mounting Type	Built-in



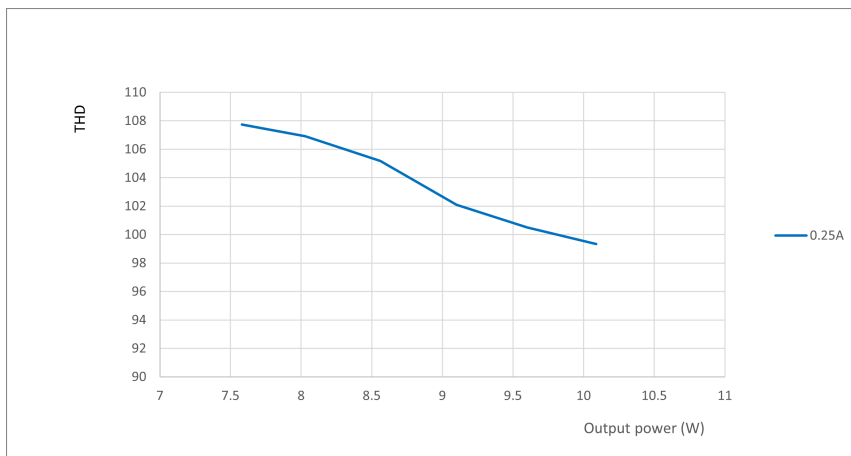
Power factor versus output power



Efficiency versus output power



THD versus output power



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Date of release: April 27, 2022 v1

www.philips.com/oem

Driver Data sheet

option 3

Driver LC 14W 250-350mA flexC R ADV2

advanced round series

Product description

- Fixed output built-in LED Driver
- Constant current LED Driver
- For luminaires of protection class I and II
- Adjustable output current 250 or 350 mA
- Up to 90 % efficiency
- For ambient temperatures up to 60 °C
- Nominal lifetime up to 50,000 h (at ta 50 °C)
- 5 years guarantee (conditions at www.tridonic.com)



Housing properties

- Casing: polycarbonat, white
- Type of protection IP20

Functions

- Overload protection
- Short-circuit protection
- No-load protection

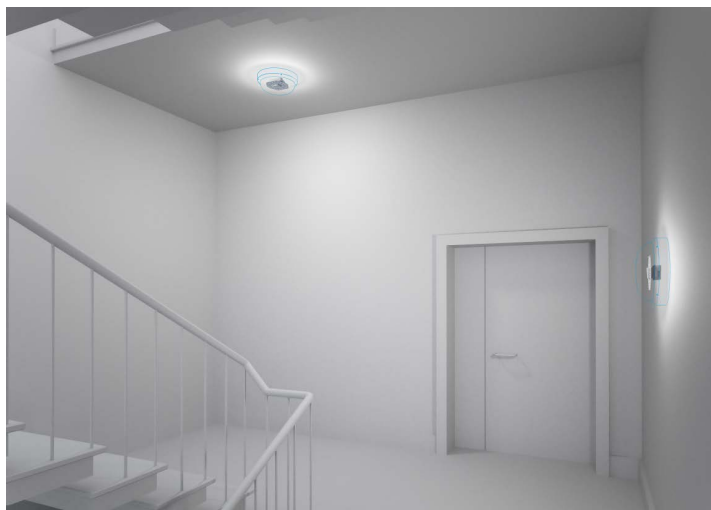
Typical applications

- For spot light, track light and wall light in retail and hospitality application



Standards, page 3

Wiring diagrams and installation examples, page 3



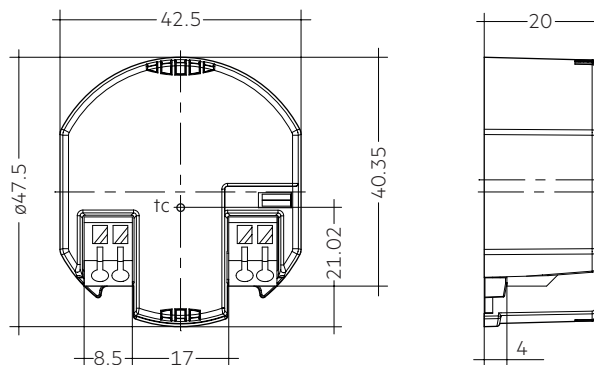
IP20 SELV  RoHS

Driver 14W 250-350mA flexC R ADV2

advanced round series

Technical data

Rated supply voltage	220 – 240 V
AC voltage range	198 – 264 V
Mains frequency	50 / 60 Hz
Typ. efficiency (at 230 V / 50 Hz / full load) ^①	90 %
λ (at 230 V, 50 Hz, full load) ^①	0.95
THD (at 230 V, 50 Hz, full load) ^①	< 25 %
Output current tolerance ^②	± 7.5 %
Max. output current peak	361 mA
Max. output voltage (U-OUT)	50 V
Typ. output LF current ripple at full load	± 5 %
Output P_{ST}^{LM} (at full load)	≤ 1
Output SVM (at full load)	≤ 0.4
Starting time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Turn off time (at 230 V, 50 Hz, full load)	≤ 0.5 s
Hold on time at power failure (output)	0 s
Ambient temperature t_a (at lifetime 50,000 h)	50 °C
Storage temperature t_s	-20 ... +60 °C
Mains burst capability	1 kV
Mains surge capability (between L – N)	1 kV
Mains surge capability (between L/N – PE)	2 kV
Lifetime	up to 50,000 h
Guarantee (conditions at www.tridonic.com)	5 years
Dimensions L x W x H	47 x 42 x 20 mm



Ordering data

Type	Article number	Packaging, carton	Packaging, pallet	Weight per pc.
LC 14/250-350/40 flexC R ADV2	28003210	200 pc(s).	7,200 pc(s).	0.047 kg

Specific technical data

Type	Output current ^②	Min. forward voltage	Max. forward voltage	Max. output power	Typ. power consumption (at 230 V, 50 Hz, full load)	Typ. current consumption (at 230 V, 50 Hz, full load)	Max. casing temperature t_c	Ambient temperature t_a	I-out select
LC 14/250-350/40 flexC R ADV2	250 mA	24 V	40 V	10 W	12 W	60 mA	85 °C	-20 ... +60 °C	open
	350 mA	24 V	40 V	14 W	16 W	80 mA	85 °C	-20 ... +60 °C	short-circuit

^① Test result at 350 mA.

^② Output current is mean value.

1. Standards

EN 55015
EN 61000-3-2
EN 61000-3-3
EN 61347-1
EN 61347-2-13
EN 61547
EN 62384

1.1 Glow-wire test

according to EN 61347-1 with increased temperature of 850 °C passed.

2. Thermal details and lifetime

2.1 Expected lifetime

Expected lifetime			
Type	ta	50 °C	60 °C
LC 14/250-350/40 flexC R ADV2	tc	75 °C ^①	85 °C ^①
	Lifetime	50,000 h	30,000 h

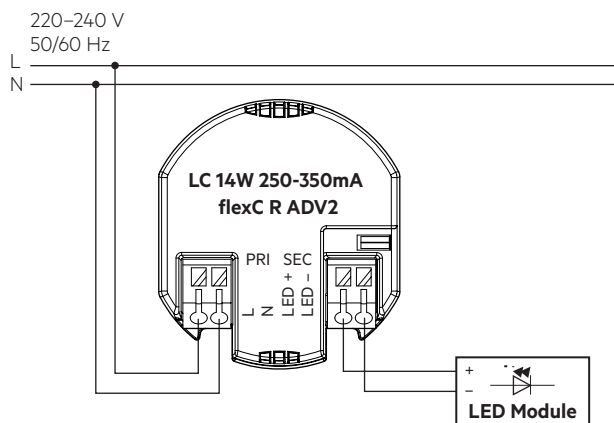
^① Test result at max. output voltage.

The LED Drivers are designed for a lifetime stated above under reference conditions and with a failure probability of less than 10 %.

The relation of tc to ta temperature depends also on the luminaire design. If the measured tc temperature is approx. 5 K below tc max., ta temperature should be checked and eventually critical components (e.g. ELCAP) measured. Detailed information on request.

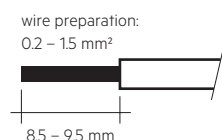
3. Installation / wiring

3.1 Circuit diagram



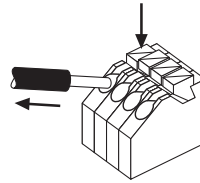
3.2 Wiring type and cross section

The wiring can be in stranded wires with ferrules or solid with a cross section of 0.2-1.5 mm². Strip 8.5-9.5 mm of insulation from the cables to ensure perfect operation of the push-wire terminals. Use one wire for each terminal connector only.



3.3 Release of the wiring

Press down the “push button” and remove the cable from front.



3.4 Wiring guidelines

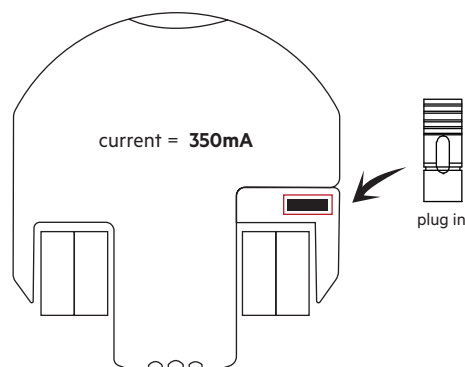
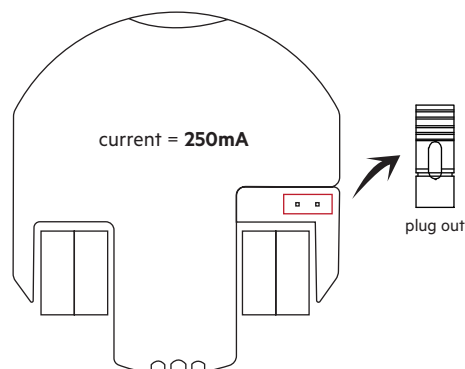
- All connections must be kept as short as possible to ensure good EMI behaviour.
- Mains leads should be kept apart from LED Driver and other leads (ideally 5 – 10 cm distance)
- Max. length of output wires is 2 m.
- The secondary wires (LED module) should be routed in parallel to ensure good EMC performance.
- Secondary switching is not permitted.
- Incorrect wiring can damage LED modules.
- To avoid the damage of the Driver, the wiring must be protected against short circuits to earth (sharp edged metal parts, metal cable clips, louver, etc.).

3.5 Replace LED module

1. Mains off
2. Remove LED module
3. Wait for 20 seconds
4. Connect LED module again

Hot plug-in or secondary switching of LEDs is not permitted and may cause a very high current to the LEDs.

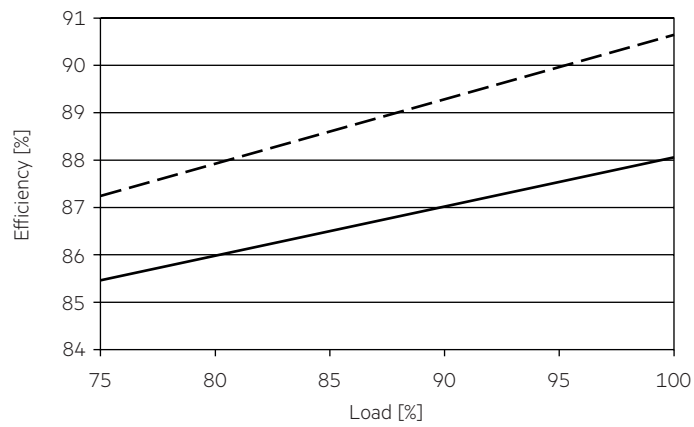
3.6 Current setting



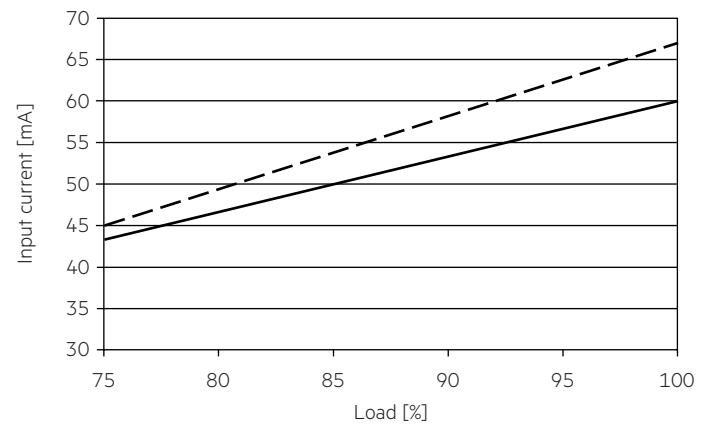
4. Electrical values

4.1 Diagrams

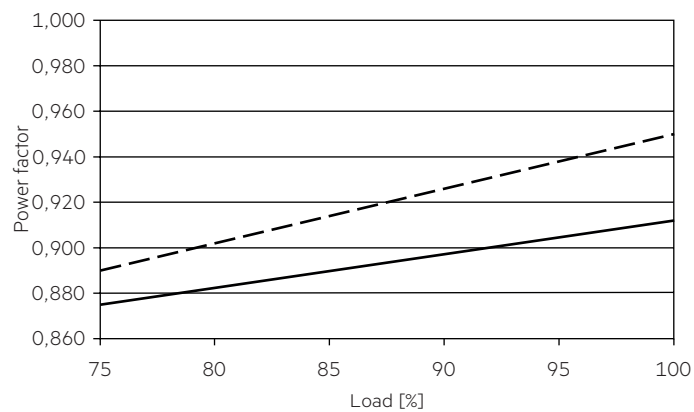
4.1.1 Efficiency vs load



4.1.4 Input current vs load

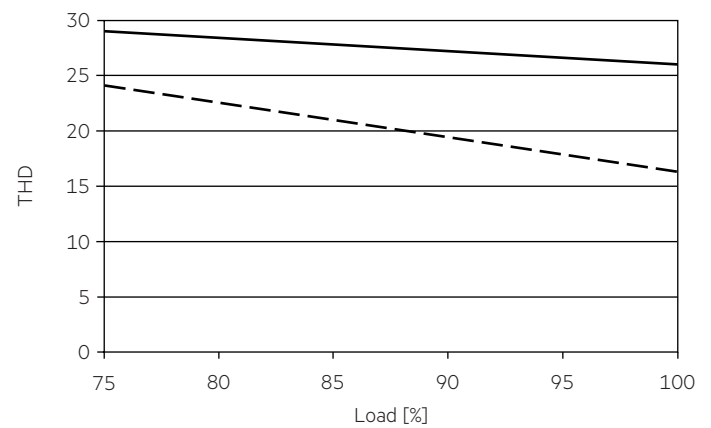


4.1.2 Power factor vs load

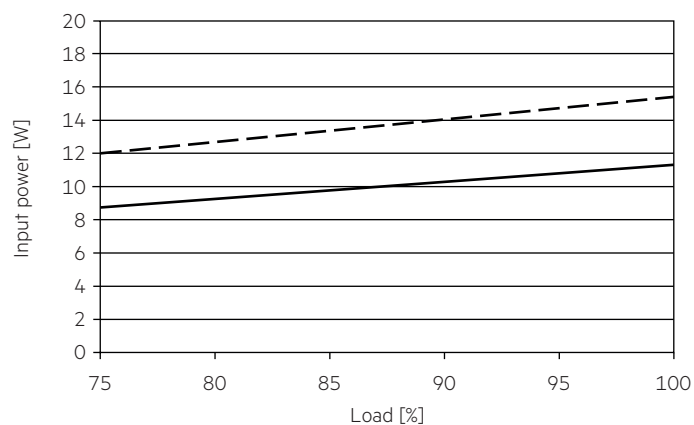


4.1.5 THD vs load

THD without harmonic < 5 mA (0.6 %) of the input current:



4.1.3 Input power vs load



— 250 mA
- - 350 mA

4.2 Maximum loading of automatic circuit breakers in relation to inrush current

Automatic circuit breaker type	C10	C13	C16	C20	B10	B13	B16	B20	Inrush current	
Installation Ø	1.5 mm ²	1.5 mm ²	1.5 mm ²	2.5 mm ²	1.5 mm ²	1.5 mm ²	1.5 mm ²	2.5 mm ²	I _{max}	Time
LC 14/250-350/40 flexC R ADV2	75	91	106	126	45	55	64	76	10 A	152 µs

This are max. values calculated out of inrush current! Please consider not to exceed the maximum rated continuous current of the circuit breaker.
Calculation uses typical values from ABB series S200 as a reference.
Actual values may differ due to used circuit breaker types and installation environment.

4.3 Harmonic distortion in the mains supply (at 230 V / 50 Hz and full load) in %

	THD	3.	5.	7.	9.	11.
LC 14/250-350/40 flexC R ADV2	< 25	< 18	< 7	< 5	< 4	< 3

Acc. to 6100-3-2. Harmonics < 5 mA or < 0.6 % (whatever is greater) of the input current are not considered for calculation of THD.

5. Functions

5.1 Short-circuit behaviour

In case of a short circuit on the secondary side (LED) the LED Driver switches off. After elimination of the short-circuit fault the LED Driver will recover automatically.

5.2 No-load operation

The LED Driver works in burst working mode to provide a constant output voltage regulation which allows the application to be able to work safely when LED string opens due to a failure.

5.3 Overload protection

If the maximum load is exceeded by a defined internal limit, the LED Driver will protect itself and the output current will decrease till LED flicker. After elimination of the overload, the nominal operation is restored automatically.

6. Miscellaneous

6.1 Insulation and electric strength testing of luminaires

Electronic devices can be damaged by high voltage. This has to be considered during the routine testing of the luminaires in production.

According to IEC 60598-1 Annex Q (informative only!) or ENEC 303-Annex A, each luminaire should be submitted to an insulation test with 500 V_{DC} for 1 second. This test voltage should be connected between the interconnected phase and neutral terminals and the earth terminal.
The insulation resistance must be at least 2 MΩ.

As an alternative, IEC 60598-1 Annex Q describes a test of the electrical strength with 1500 V_{AC} (or 1.414 x 1500 V_{DC}). To avoid damage to the electronic devices this test must not be conducted.

6.2 Conditions of use and storage

Humidity: 5 % up to max. 85 %, not condensed
(max. 56 days/year at 85 %)

Storage temperature: -20 °C up to max. +60 °C

The devices have to be within the specified temperature range (ta) before they can be operated.

The LED Driver is declared as inbuilt LED controlgear, meaning it is intended to be used within a luminaire enclosure.
If the product is used outside a luminaire, the installation must provide suitable protection for people and environment (e.g. in illuminated ceilings).

6.3 Additional information

Additional technical information at www.tridonic.com → Technical Data

Lifetime declarations are informative and represent no warranty claim.
No warranty if device was opened.