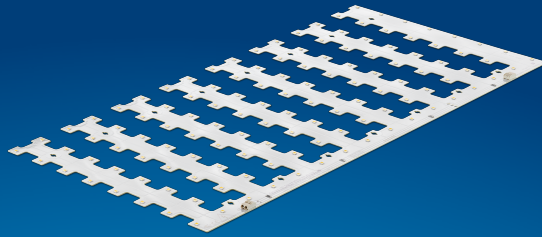


# PHILIPS

## Fortimo

### LED

Fortimo LED Square  
2500lm 8xx HV/LV3



## Datasheet

### Fortimo LED Square 2500lm 8xx HV/LV3

Fortimo LED Square systems consist of white light LED modules with square outer dimensions delivering high energy efficiency and high quality of light. Fortimo LED Square systems are ideal for office applications where the luminaires require a very homogeneous exit surface window. Typical applications are recessed, surface mounted and suspended office luminaires.

#### Key features and benefits

- LED module efficiency of 190 lm/W (nominal at 4000K, CRI80) or 180 lm/W in CRI90 (nominal at 4000K, CRI90)
- Long life-time: >50,000 hours
- High color rendering: choice between CRI >80 or CRI >90
- CRI90 products are based on our CRI90 High Efficiency technology
- Excellent color consistency of 3 SDCM
- Choice of color temperatures (3000 K, 4000 K and 6500 K)
- Two lumen packages: 1250lm and 2500lm
- FlexTune tunable white modules available in both lumen packages
- FlexTune tunable white modules can be tuned from 2700K to 6500K in CRI90
- FlexTune tunable white modules work perfectly together with the Xitanium FlexTune non-isolated drivers
- Tunable lumen output, efficacy and lifetime
- Wide temperature (Tc) range from -40 °C to +80 °C
- Push-in connectors enabling automated wiring
- Five year system warranty when paired with Xitanium drivers

December 2021



## Ordering data

Commercial product name	EOC	12NC	Box quantity
Fortimo LED Square 2500lm 830 HV/LV3	8719514 269675 00	9290 028 20506	20
Fortimo LED Square 2500lm 840 HV/LV3	8719514 269699 00	9290 028 20606	20
Fortimo LED Square 2500lm 865 HV/LV3	8719514 269712 00	9290 028 20706	20

## Drive currents

Parameter	Nominal*	Life**	Max***	Unit
Fortimo LED Square 2500lm 8xx HV/LV3	302	700	700	mA

## Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T <sub>c</sub> (case temperature at T <sub>c</sub> point)	45	65	80	°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)

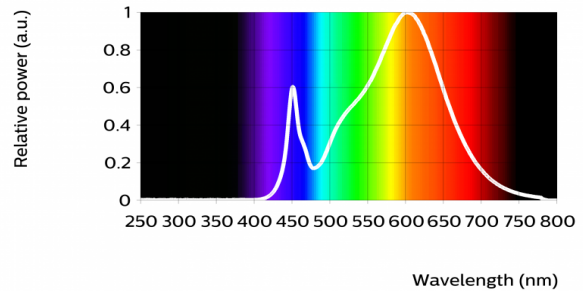
### Fortimo LED Square 2500lm 830 HV/LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	2220	2400	2580	lm
Efficacy	165	181	202	lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.433, 0.401)		-
Color consistency			3	SDCM
CRI	80			
R9		5		
Photometric code		830/339		
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 242mA	Tc 25 °C	1976	187
	Tc-nom 45 °C	1933	184
	Tc-max 80 °C	1836	178
I-nom 302mA	Tc 25 °C	2454	184
	Tc-nom 45 °C	2400	181
	Tc-max 80 °C	2279	175
I-max 700mA	Tc 25 °C	5433	167
	Tc-nom 45 °C	5311	164
	Tc-max 80 °C	5041	158



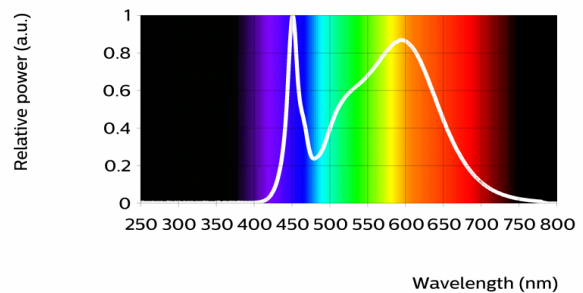
### Fortimo LED Square 2500lm 840 HV/LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	2310	2500	2690	lm
Efficacy	172	189	210	lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.381, 0.379)		-
Color consistency			3	SDCM
CRI	80			
R9		5		
Photometric code		840/339		
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 242mA	Tc 25 °C	2056	195
	Tc-nom 45 °C	2012	192
	Tc-max 80 °C	1915	185
I-nom 302mA	Tc 25 °C	2555	192
	Tc-nom 45 °C	2500	189
	Tc-max 80 °C	2380	182
I-max 700mA	Tc 25 °C	5669	174
	Tc-nom 45 °C	5546	171
	Tc-max 80 °C	5275	165

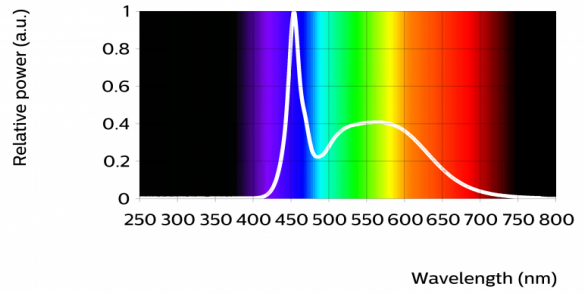


Fortimo LED Square 2500lm 865 HV/LV3

Parameter	Min	Typ	Max	Unit
Luminous flux	2303	2490	2677	lm
Efficacy	172	188	210	lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.309, 0.322)		-
Color consistency			3	SDCM
CRI	80			
R9		5		
Photometric code		865/339		
Photobiological safety			RG1 unlimited	

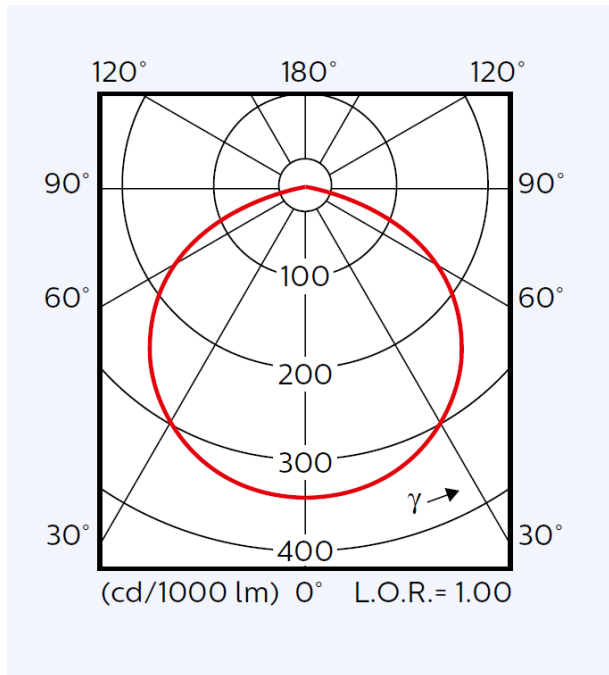
Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5

Operation point	865	lm	lm/W
80% I-nom 242mA	Tc 25 °C	2049	194
	Tc-nom 45 °C	2002	191
	Tc-max 80 °C	1906	185
I-nom 302mA	Tc 25 °C	2549	191
	Tc-nom 45 °C	2490	188
	Tc-max 80 °C	2371	182
I-max 700mA	Tc 25 °C	5682	174
	Tc-nom 45 °C	5550	171
	Tc-max 80 °C	5282	165



## Beam shape

The Philips LED module generates a Lambertian beam shape, which is a pragmatic starting point for OEMs wishing to design secondary optics.



## Electrical characteristics

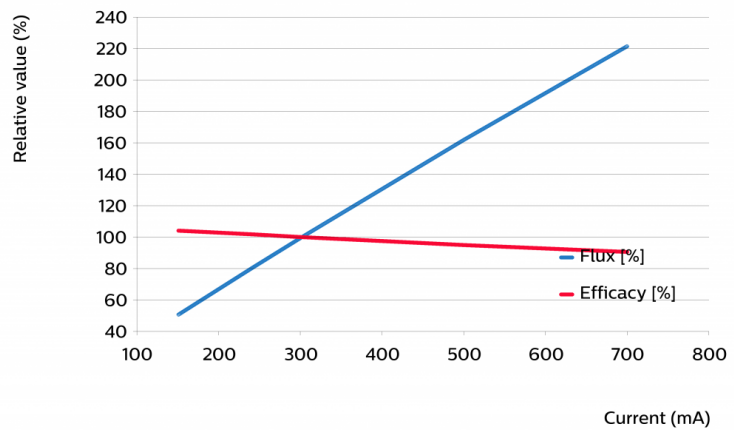
Parameter	Min	Typ	Max	Unit
Forward voltage	42.4	43.8	44.2	V
Power consumption	12.8	13.2	13.3	W = kWh/1000h
Number of modules in series per chain			7	
Number of modules in parallel			2	

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

## Tuning information

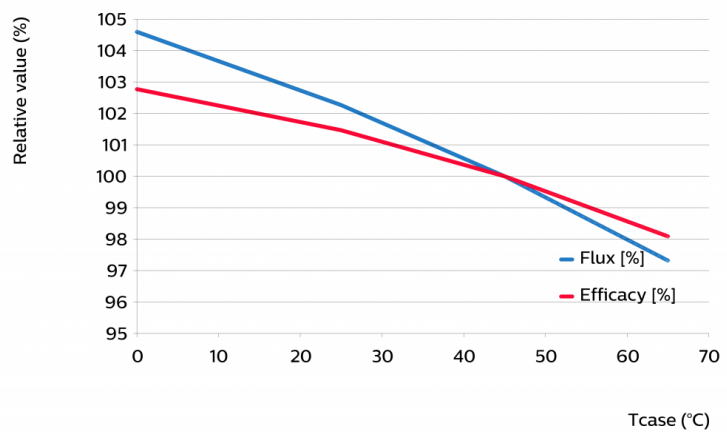
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
700	221	91
501	162	95
302	100	100
242	81	102
151	51	104



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

Tc [°C]	Flux [%]	Efficacy [%]
65	97	98
45	100	100
25	102	101
0	105	103



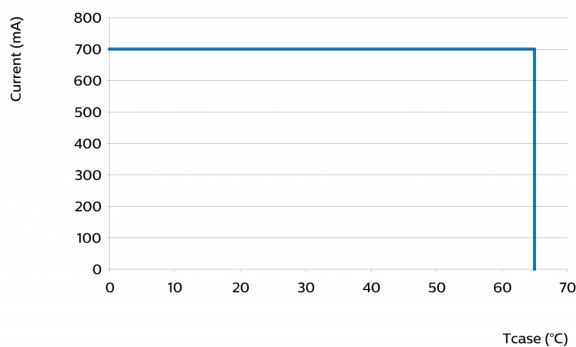
## Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80			L90		
		B50	B20	B10	B50	B20	B10	B50	B20	B10
80% I-nom 242 mA	Tc 25°C	>72	>72	>72	>72	>72	>72	66	60	57
	Tc-nom 45°C	>72	>72	>72	>72	>72	>72	52	51	50
	Tc life 65°C	>72	>72	>72	>72	>72	>72	42	41	40
I-nom 302 mA	Tc 25°C	>72	>72	>72	>72	>72	>72	66	60	57
	Tc-nom 45°C	>72	>72	>72	>72	>72	>72	52	51	50
	Tc life 65°C	>72	>72	>72	>72	>72	>72	42	41	40
L-life 700 mA	Tc 25°C	>72	>72	>72	>72	>72	>72	61	60	59
	Tc-nom 45°C	>72	>72	>72	>72	>72	>72	48	47	47
	Tc life 65°C	>72	>72	>72	>72	>72	>72	39	38	37

## Lifetime

Parameter	Value	Unit
M70F50 nominal	>72000	hours
M70F50 life	>72000	hours

## Performance Window

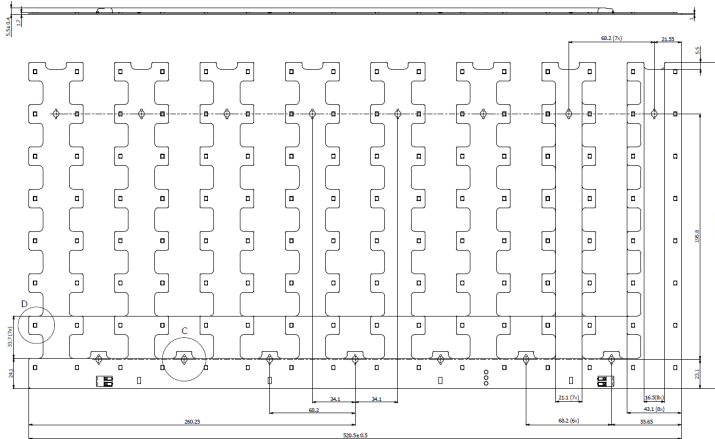


## Wiring

Specification item	Value	Unit	Condition
Input wire cross-section	0.25...0.75	mm <sup>2</sup>	solid wire
	18...24	AWG	solid wire
Input wire strip length	7.5...8.5	mm	
Input wire cross-section	0.33...0.5	mm <sup>2</sup>	stranded wire
	20...22	AWG	stranded wire
Input wire strip length	7.5...8.5	mm	

## Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	520	520.5	521	mm
Width	259.5	260	260.5	mm
Height PCB		1		mm
Height total	5.1	5.5	5.9	mm
Product mass		208		gram



## Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		700	mA
Case temperature (Tc-max)		80	°C
ESD (direct contact)	8		kV
Working voltage		350	V <sub>dc</sub>
Storage temperature	-40	80	°C



## Application information

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### Certificates and Standards

CE  
ENEC  
ENEC+

### Application

Dimming

Yes



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22/12/2021