

PHILIPS

Fortimo

LED system

FastFlex
LED module
2x8/840 Gen3



Datasheet

Flexible system approach

Outstanding performance while enabling OEM optical differentiation in road, urban and industrial lighting applications.

Benefits

- Enables OEM optical differentiation with lenses from standard FastFlex portfolio matching every project's needs
- Unparalleled lumen per watt for fixture performance

Features

- State of the art specifications
- Temperature and driving current designed for fixture optimization
- Optical flexibility via FastFlex lenses
- Flexible lumen output
- Range of CCT and CRI versions

Applications

- Road lighting
- Urban street lighting
- Flood and Area lighting
- Tunnel lighting
- High bay lighting

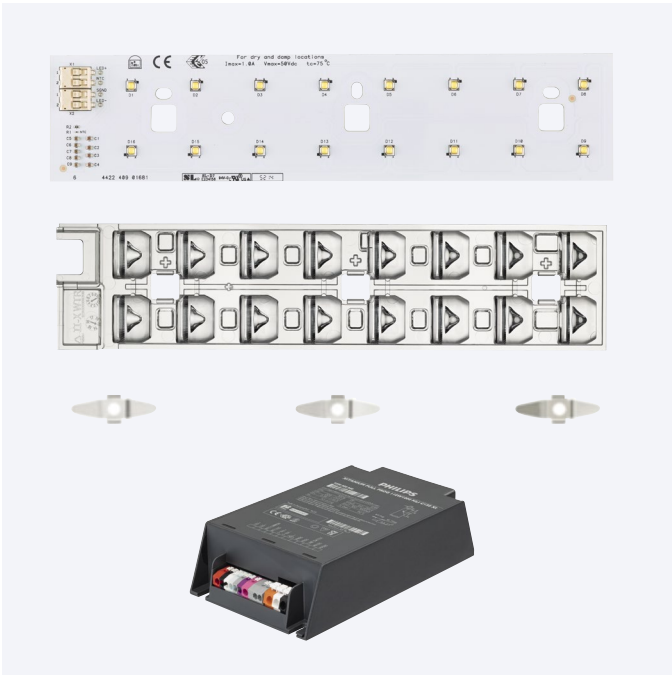
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Logistical data

Specification item	Value		
Product name	Fortimo FastFlex LED board 2x8/840 Gen3		
European order code	8718696 454350 00		
Logistic code 12NC	9290 009 55006		
Pieces per box	25		

Specification item (designed for the board)	European Order Code	12NC	Pieces/Board
Fortimo FastFlex lens 2x8/xx	See family sheet of lenses		1
Fortimo FastFlex module clip	9290 008 10003	8718291 224358 00	3

Basic configuration



To operate a system you will need one or more FastFlex LED modules, which are sold separately.

- Each Fortimo FastFlex LED module consists of:
- Fortimo FastFlex LED board 2x8/840 Gen3
 - Fortimo FastFlex lens 2x8 Gen3 (any type, see table above)
 - Fortimo FastFlex module clips (3 pieces are necessary for 1 FastFlex LED board)
 - Compatible Xitanium LED driver (see table of released system combinations for compatible drivers)

Operating Conditions

Specification item	Value	Unit	Condition
Reference output current	530	mA	
Reference case temperature	75	°C	
Ambient temperature	25	°C	Temperature outside luminaire
Min driver current	100	mA	
Max driver current	1000	mA	
Max ΔT (Tambient -Tcase)	50	°C	

Released system combinations

Class I compliant system mapping - System driver I _{max} mapping (A)	Value	Number of Fortimo Fastflex LED Boards				
Driver name / description	12NC	1x	2x	3x	4x	5x
Xitanium Full Prog 35W 1000 NLD C150 Xt	9290 008 84606	0.70	-	-	-	-
Xitanium Full Prog 35W 1000 NL1 C150 Xt	9290 008 84706	0.70	-	-	-	-
Xitanium 40W 0.70A Prog+ GL-J sXt	9290 007 08803	0.70	-	-	-	-
Xitanium 40W 0.53A Prog+ GL-J sXt	9290 007 10303	0.53	-	-	-	-
Xitanium Full Prog 70W 1000 NLD C150 Xt	9290 008 84306	1.00	0.70	-	-	-
Xitanium Full Prog 70W 1000 NL1 C150 Xt	9290 008 84406	1.00	0.70	-	-	-
Xitanium Lite Prog 70W 1000 NL C150 OD	9290 008 84506	1.00	0.70	-	-	-
Xitanium 75W 0.35-0.70A 1-10V 230V sXt	9137 012 17502	-	0.70	-	-	-
Xitanium 75W 0.35-0.7A GL Prog sXt	9290 007 02302	-	0.70	0.53	-	-
Xitanium 75W 0.35-0.7A GL Prog+ sXt	9290 007 04903	-	0.70	0.53	-	-
Xitanium 75W 0.70A 1-10V 230V sXt	9290 007 05503	0.70	0.70	-	-	-
Xitanium 75W 0.7A AOCM 1-10V GL-Y sXt	9290 007 08003	-	0.70	-	-	-
Xitanium 75W 0.1-1.05A Prog+ sXt	9290 007 08903	1.00	-	-	-	-
Xitanium 75W 0.70A Prog+ GL-Z sXt	9290 007 10103	-	0.70	-	-	-
Xitanium 75W 0.53A AOCM 1-10V 230V-Y sXt	9290 007 12403	-	0.53	0.53	-	-
Xitanium 75W 0.70A Prog+ GL-Z sXt	9290 007 18603	-	0.70	-	-	-
Xitanium 100W 0.70A Prog+ GL-Z sXt	9290 007 08703	-	0.70	0.70	-	-
Xitanium 100W 0.53A Prog+ GL-Z sXt	9290 007 10403	-	-	0.53	0.53	-
Xitanium Full Prog 110W 1000 NLD C150 Xt	9290 008 83906	-	1.00	0.75	0.55	-
Xitanium Full Prog 110W 1000 NL1 C150 Xt	9290 008 84006	-	1.00	0.75	0.55	-
Xitanium Lite Prog 110W 1000 NL C150 OD	9290 008 84106	-	1.00	0.75	0.55	-
Xitanium 150W 0.70A 1-10V 230V sXt	9137 012 11603	-	0.70	0.70	0.70	-
Xitanium 150W 0.70A 230V sXt	9137 108 59002	-	0.70	0.70	0.70	-
Xitanium 150W 0.35-0.7A GL Prog sXt	9290 007 02202	-	-	0.70	0.70	0.60
Xitanium 150W 0.53A 0-10V Otd	9290 007 02402	-	-	0.53	0.53	0.53
Xitanium 150W 1.05A 1-10V 230V sXt	9290 007 04712	1.00	1.00	-	-	-
Xitanium 150W 0.35-0.7A GL Prog+ sXt	9290 007 05103	-	-	0.70	0.70	0.60
Xitanium 150W 0.1-1.05A Prog+ sXt	9290 007 09003	-	1.00	1.00	-	-
Xitanium 150W 0.7A Prog+ 230V-H sXt	9290 007 10503	-	-	0.70	0.70	0.60

Released system combinations

Class II compliant system mapping - System driver I_{max} mapping	Value	Number of Fortimo Fastflex LED Boards					
Driver name / description	12NC	1x	2x	3x	4x	5x	6x
Xi LP 75W 0.3-1.0A SL 230V S240 sXt	9290 009 63106	1	0.70	-	-	-	-
Xi LP 75W 0.3-1.0A S1 230V S240 sXt	9290 009 63306	1	0.70	-	-	-	-
Xi LP 75W 0.2-0.7A SL 230V S240 sXt	9290 009 63006	-	0.70	0.53	-	-	-
Xi LP 75W 0.2-0.7A S1 230V S240 sXt	9290 009 63206	-	0.70	0.53	-	-	-
Xi LP 70W 0.3-1.0A SL 230V C150 sXT	9290 009 64106	1	0.70	-	-	-	-
Xi LP 70W 0.3-1.0A S1 230V C150 sXT	9290 009 64306	1	0.70	-	-	-	-
Xi LP 70W 0.2-0.7A SL 230V C150 sXT	9290 009 64006	-	0.70	0.35	-	-	-
Xi LP 70W 0.2-0.7A S1 230V C150 sXT	9290 009 64206	-	0.70	0.35	-	-	-
Xi LP 40W 0.3-1.0A SL 230V S175 sXt	9290 009 40906	0.70	-	-	-	-	-
Xi LP 40W 0.3-1.0A S1 230V S175 sXt	9290 009 40806	0.70	-	-	-	-	-
Xi LP 40W 0.2-0.7A SL 230V S175 sXt	9290 009 30806	0.70	-	-	-	-	-
Xi LP 40W 0.2-0.7A S1 230V S175 sXt	9290 009 30706	0.70	-	-	-	-	-
Xi LP 150W 0.3-1.0A SL 230V S240 sXt	9290 009 62706	-	1	1	0.70	-	-
Xi LP 150W 0.3-1.0A S1 230V S240 sXt	9290 009 62906	-	1	1	0.70	-	-
Xi LP 150W 0.2-0.7A SL 230V S240 sXt	9290 009 62606	-	-	0.70	0.70	0.53	0.53
Xi LP 150W 0.2-0.7A S1 230V S240 sXt	9290 009 62806	-	-	0.70	0.70	0.53	0.53
Xi LP 110W 0.3-1.0A SL 230V C150 sXT	9290 009 64506	-	1	0.70	-	-	-
Xi LP 110W 0.3-1.0A S1 230V C150 sXT	9290 009 64706	-	1	0.70	-	-	-
Xi LP 110W 0.2-0.7A SL 230V C150 sXT	9290 009 64406	-	0.70	0.70	0.53	-	-
Xi LP 110W 0.2-0.7A S1 230V C150 sXT	9290 009 64606	-	0.70	0.70	0.53	-	-
Xi FP 75W 0.3-1.0A SNLDAE 230V S240 sXt	9290 009 62506	1	0.70	-	-	-	-
Xi FP 75W 0.2-0.7A SNLDAE 230V S240 sXt	9290 009 62406	-	0.70	0.53	-	-	-
Xi FP 150W 0.3-1.0A SNLDAE 230V S240 sXt	9290 009 62306	-	1	1	0.70	-	-
Xi FP 150W 0.2-0.7A SNLDAE 230V S240 sXt	9290 009 62206	-	-	0.70	0.70	0.53	0.53
Xitanium Full Prog 35W 1000 NLD C150 Xt	9290 008 84606	0.7	-	-	-	-	
Xitanium Full Prog 35W 1000 NL1 C150 Xt	9290 008 84706	0.70	-	-	-	-	
Xitanium 40W 0.70A Prog+ GL-J sXt	9290 007 08803	0.70	-	-	-	-	
Xitanium Full Prog 70W 1000 NLD C150 Xt	9290 008 84306	1.00	0.70	-	-	-	
Xitanium Full Prog 70W 1000 NL1 C150 Xt	9290 008 84406	1.00	0.70	-	-	-	
Xitanium Lite Prog 70W 1000 NL C150 OD	9290 008 84506	1.00	0.70	-	-	-	
Xitanium Full Prog 110W 1000 NLD C150 Xt	9290 008 83906	-	1.00	0.75	0.55	-	
Xitanium Full Prog 110W 1000 NL1 C150 Xt	9290 008 84006	-	1.00	0.75	0.55	-	
Xitanium Lite Prog 110W 1000 NL C150 OD	9290 008 84106	-	1.00	0.75	0.55	-	

Solar driver mapping - Solar driver I_{max} mapping	Value	Number of Fortimo Fastflex LED Boards (A)			
Driver name / description	12NC	1x	2x	3x	4x
Xitanium 40W 0.2-0.7A LS 12-24VDC	9290 006 11903	0.70	0.41	-	-
Xitanium 70W 0.2-0.7A LS 12-24VDC	9290 006 12003	-	0.70	-	0.35

Performance Characteristics (under reference operating If and Tcase = 75 °C)

Specification item	Min	Typ	Max	Unit
Lumen output	2900	3245	3650	lm
Efficacy	109	137	-	lm/W
Power consumption	21.2	23.8	26.5	W
Forward voltage	-	44.9	50	V
Correlated Color Temperature (CCT)	-	3985	-	K
Color Rendering Index (CRI)	80	-	-	Ra
Initial color accuracy	-	4	-	SDCM
Color accuracy at 55,000 hours	-	-	7	SDCM
Lumen maintenance	>55,000 *	-	-	hour
Product lifetime	>55,000 *	-	-	hour

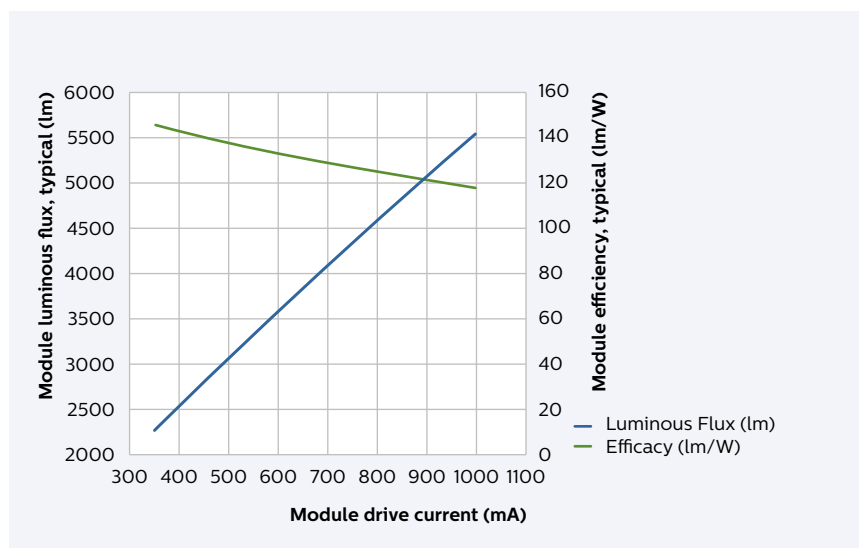
*Charts presenting module's Tc and current Vs expected lifetime (Up to 100,000 hours), as well as module's Tc and current Vs expected lumen depreciation (L70 and above) are available via your sales representative.

Note: The lumen output is specified at board level (lens optical losses not included). When using standard Fortimo Fastflex lenses, optical losses of 4% need to be taken into account.

Note: Philips maintains a tolerance of $\pm 7\%$ on luminous flux, ± 2 on CRI measurements and $\pm 5\%$ on CCT measurements.

Driver current (mA)	Typ Luminous flux (lm)	Typ efficacy (lm/W)	Typ thermal power (W)	Type power (W)	Max power (W)
350	2250	146	9.0	15.4	17.2
530	3245	137	14.6	23.8	26.5
700	4115	129	20.2	32	35.6
1000	5540	118	31.0	46.9	52

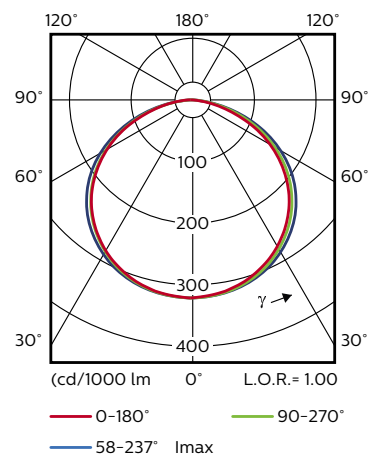
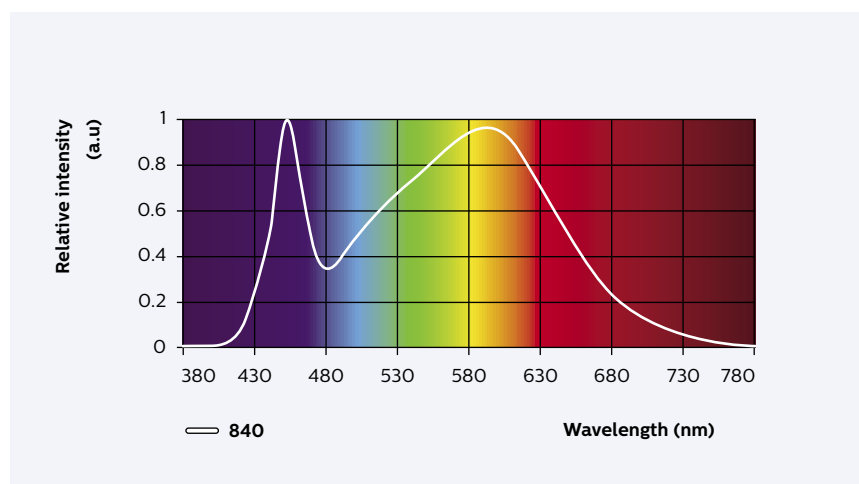
The Fortimo FastFlex Gen3 has been specified with a typical color consistency of 4 SDCMs at the beginning of its lifetime. Application conditions may affect the way how color consistency of the product changes during the given life time of the product. In the case of the Fortimo FastFlex DA and DS versions, variations at the lens of your section need to be taken into account.



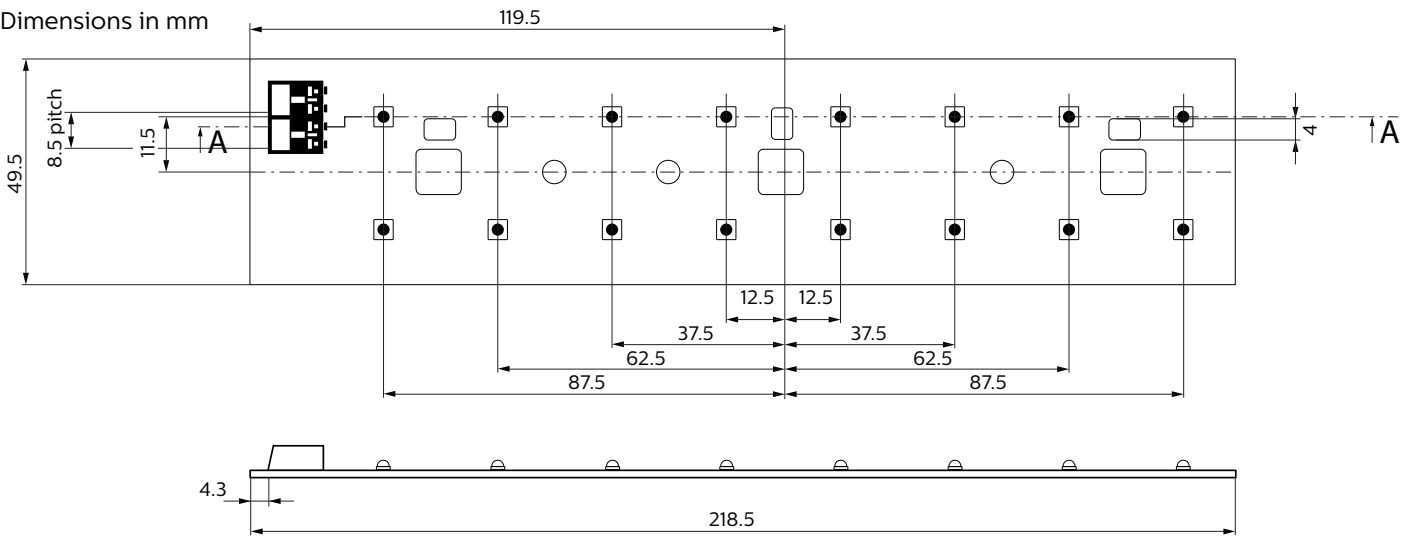
Temp. T _c Current	55 °C	65 °C	75 °C
350 mA	✓	✓	✓
530 mA	✓	✓	✓
700 mA	✓	✓	✓
1000 mA	✓	out of spec.	out of spec.

Note : Philips do not support the use of the Fortimo FastFlex Gen3 under conditions above showed as (out of spec)

Optical Characteristics

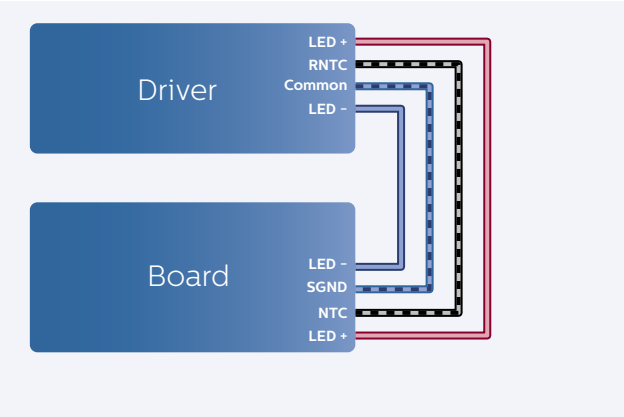


Mechanical Characteristics



Electrical Characteristics

Connection between driver and FF-module

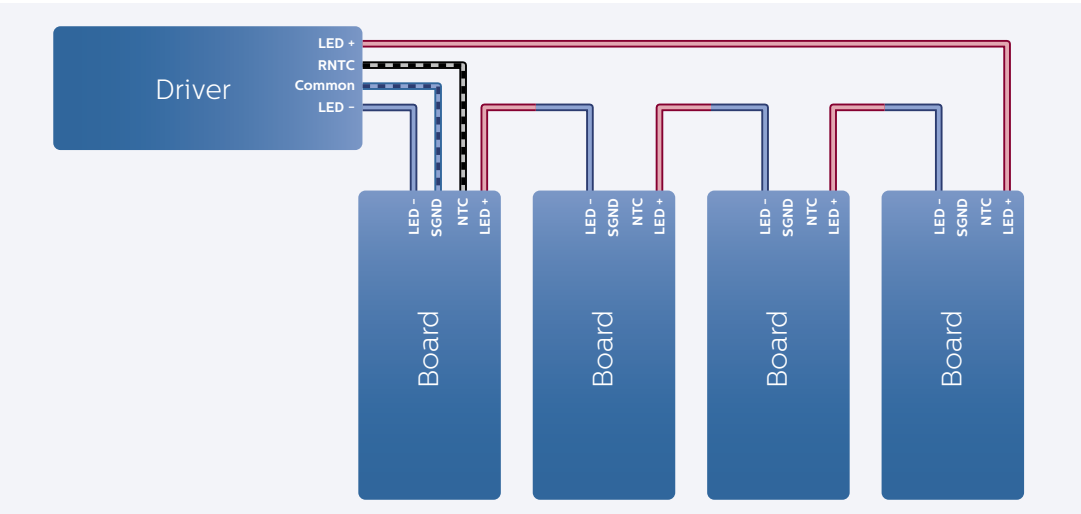


Signal	Discription
LED+	LED driver current input (+)
LED-	Power ground (-)
NTC	Temperature sensor (RNTC)
SGND/Common	Signal ground

The temperature protection has been implemented with an NTC resistor in series with a fixed resistor where the fixed resistor has a value 390 Ohms and the NTC has a value of 15,000 Ohms (e.g. Murata NCP15XW153E03RC or equivalent).

It is recommended to use solid wire AWG 20-22 (0.5 mm²-0.33 mm²) with suitable isolation (depending on the application).
It is recommended to use Molex Lite-trap specification for strip length & tolerance for wiring (spec.= 8 +/-0.5 mm).

Multiple boards on one driver



- If a system consists of multiple FastFlex boards connected to a single driver:
- the first board connected to the driver is the master
 - only this board is monitored by the NTC

Certificates and standards

Specification item	Value
Approval marks	CE, ENEC
RoHS and Reach	Compliant with European Directives



