



# Setting the standard in LED modules

Philips Fortimo LED High Brightness Module –  
an easy to design-in, compact LED module for white light  
applications

**PHILIPS**  
sense and simplicity

# Philips Fortimo LED High Brightness Module (HBM) is an elegant solution for OEMs looking to incorporate LEDs into their application portfolio.

Long-lasting and low maintenance, LED-based luminaires are an excellent white light solution. LED technology is rapidly evolving, with each generation of LEDs increasing in efficacy. To take full advantage of these efficiency improvements, luminaire creators working with peak design (optic lenses -based applications) had to frequently re-design the luminaire. Now, with Philips Fortimo LED High Brightness Module (HBM) luminaire designers receive the full benefit of LED modules without the complexity and high R&D costs.

## Design-in ease and flexibility

The compact rectangular light engine with non-integrated driver allows for creation of different light distributions using a metal reflector, similar to HID lamps. OEMs with years of experience in traditional luminaire design can leverage that expertise in developing a LED-based luminaire. The design-in is further simplified because the same form factor offers multiple lumen packages, leveraging a single design into a full portfolio to better meet end user needs.

## Future-proof light engine

Fortimo HBM is truly future-proof - light emitting area, optical and electrical characteristics and mechanical interface will remain constant. With HMB, Philips Lighting has taken over the task of incorporating future LED efficacy upgrades. There is no need to change the luminaire and reflector design. The future-proof promise also means that end users will never have a problem replacing the light engine<sup>1</sup> in a HBM luminaire.

## Thermal management

The design-in process is further simplified with passive thermal management, subject to luminaire form factor and lumen package. By mounting the modules directly on the interior of the luminaire casing, the heat is dissipated into the ambient atmosphere.<sup>2</sup>

## Energy efficiency and the environment

Philips Fortimo HBM offers the best energy efficacy in the market, with minimum light output of 90 lm/W on a module level. The remarkable energy savings and CO<sub>2</sub> reductions achieved with a HBM lighting solution can be further extended with dimming. By lowering the light levels during off-peak hours, energy usage is reduced and light pollution is minimized, improving quality of life for local residents. In addition to high energy efficiency, Fortimo LED HBM is a Green Product, containing no mercury.

## Benefits

- LED “lamp” – high lumen output from a small area
- Cost-effective LED light engine
- Luminaire design is based on traditional reflector optics
- Future-proof concept
- Reduced time to market and simplified supply chain
- Full commitment to make HBM module Zhaga<sup>3</sup> compliant
- Interchangeability of light engines from different manufacturers

## Features

- Module efficiency of up to 115 lm/W
- Fixed light emitting area, lumen package and mechanical interface
- Color temperature 4100 K & 5700 K
- Choice of color rendering index CRI 60 or 70 (minimum)

## Applications

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

<sup>1</sup> Light engine = LED module+driver

<sup>2</sup> For full thermal management details, please refer to the Design-in Guide

<sup>3</sup> For more information about the Zhaga consortium and LED module standardization, please visit <http://www.zhagastandard.org>

## Product specifications

Type	Module Power (W)	Module Efficacy Typical (lm/W)	Light Output (lm)	Color Temp. (K)	Color Rendering Index (min. R <sub>s</sub> )	T <sub>case</sub> (C)	Thermal Load (W)	Max Input Voltage (V)	Colour Consistency (SDCM)
Fortimo LED HBM 4000 35W/757	35	115	4000	5700	70	70	23	84	> 7
Fortimo LED HBM 4000 40W/641	40	100	4000	4100	60	70	28	84	> 7
Fortimo LED HBM 4000 45W/740*	45	90	4000	4000	70	70	31	84	> 7
Fortimo LED HBM 6000 52W/757	52	115	6000	5700	70	70	35	119	> 7
Fortimo LED HBM 6000 59W/641	59	100	6000	4100	60	70	41	119	> 7
Fortimo LED HBM 6000 68W/740*	68	90	6000	4000	70	70	49	119	> 7

Note: +/-10% tolerance is applicable to lumen/watt performance characteristics.

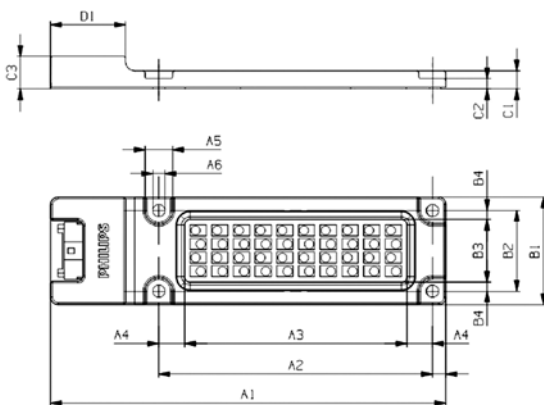
\* available Q3 2011

## Dimensions (typical data; ± 2 mm)

### Fortimo LED HBM

A1	A2	A3	A4	A5	A6	B1	B2	B3	B4	C1	C2	C3	D1
110	76	61.8	7.1	7.5	3.4	30.5	22.5	17.5	2.5	5	2.8	9	21

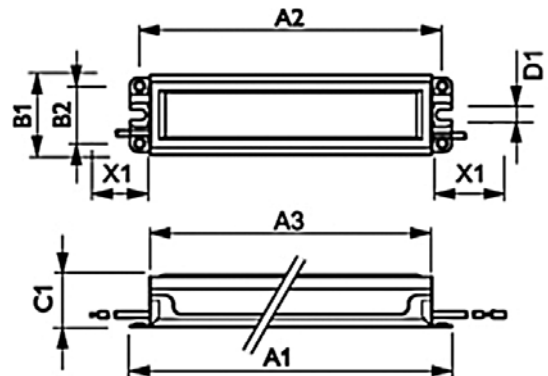
Tc Position: Centre Point of the module (back side).



## Dimensions (typical data; ± 2 mm)

### Xtanium 75W & 150W Programmable LED driver

A1	A2	A3	B1	B2	C1	D1	X1
240.5	226.2	211.1	59.1	42.9	37.1	8	500



## Technical note

The Xtanium 150W Programmable LED driver will automatically deliver the optimal output current for any combination of Fortimo LED HBM modules. No programming interface or software are necessary, simply connect the modules to the driver according to the instructions in the Design-in Guide. The driver is factory set to provide 1-10 V dimming.

## Ordering & packing data

Type	12NC	EOC	Minimum order quantity
Fortimo LED HBM 4000 35W/757	9290 006 36603	871829114379600	10
Fortimo LED HBM 4000 40W/641	9290 006 36503	871829114378900	10
Fortimo LED HBM 6000 52W/757	9290 006 36803	871829114381900	10
Fortimo LED HBM 6000 59W/641	9290 006 36703	871829114380200	10
Cable Fortimo 7-pins to wire - 600mm.	9290 006 59803	871829114382600	10
Xtanium 75W 0.35-0.7A GL Prog sXt	9290 007 02302	871829111887900	10
Xtanium 150W 0.35-0.7A GL Prog sXt	9290 007 02202	872790078351300	10

**For more information, visit:**  
**[www.philips.com/fortimo](http://www.philips.com/fortimo)**

LED technology is continuously improving. For latest updated information on efficacy range and wattages, please check [www.philips.com/fortimo](http://www.philips.com/fortimo)



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