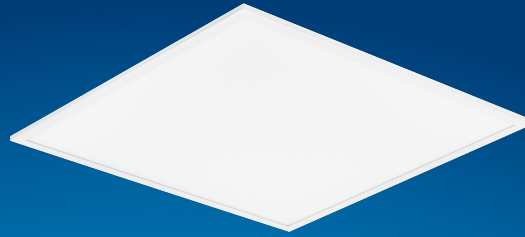


**PHILIPS**

CertaFlux

LED

CertaFlux LED Panel 6060



Datasheet

# CertaFlux LED Panel

The ultra-slim CertaFlux LED panels enable an easy and economical solution for commercial spaces and buildings. With a wide choice of drivers different light levels can be achieved. It's different sizes (60x60; 62x62; 30x120; 60x120) makes it suitable for a wide range of ceilings. CertaFlux LED panels offer a good product performance (100 lm/W at 4000K CRI80) and reliability (30,000 hours).

## Key features and benefits

- Efficacy up to 100 lm/W on module level
- Ultra-slim LED module
- Excellent light uniformity
- Good color rendering (CRI >80)
- Flexible lumen output due to wide driver choice
- 3 years system warranty
- Quick install connector is integrated
- Wide range of dimensions: 60x60; 62x62; 30x120; 60x120

December 2020



## Ordering data

Commercial product name	EOC	12NC	Box quantity
CertaFlux LED Panel 6060 830 MD2	8718699 676193 00	9290 016 87406	5
CertaFlux LED Panel 6060 840 MD2	8718699 676216 00	9290 016 87506	5
CertaFlux LED Panel 6060 865 MD2	8718699 676230 00	9290 016 87606	5

## Drive currents

Parameter	Nominal*	Life**	Max***	Unit
CertaFlux LED Panel 6060	800	1050	1150	mA

## Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T <sub>c</sub> (case temperature at T <sub>c</sub> point)	45	65	75	°C

\* Nominal value at which typical performance is specified

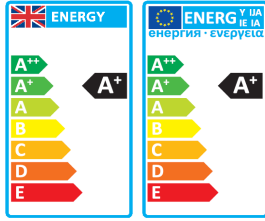
\*\* Value at which life time is specified

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

## Optical characteristics - table per color (CCT)

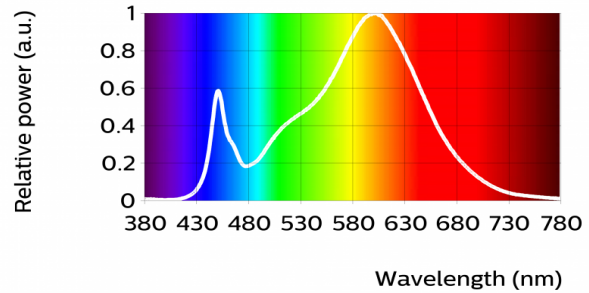
### CertaFlux LED Panel 6060 830 MD2

Parameter	Min	Typ	Max	Unit
Luminous flux	2610	2900	3190	lm
Module efficacy		101		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.439, 0.404)		-
Color consistency			6	SDCM
CRI	80			
Photometric code		830/699		
Radiation angle		115		deg



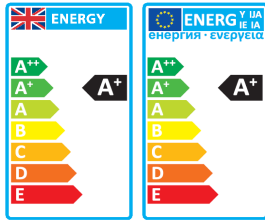
Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$

Operation point	830	lm	lm/W
50% I-nom 400mA	Tc 25 °C	1605	114
	Tc-nom 45 °C	1555	112
	Tc-max 75 °C	1472	107
I-nom 800mA	Tc 25 °C	2999	103
	Tc-nom 45 °C	2900	101
	Tc-max 75 °C	2736	96
I-max 1150mA	Tc 25 °C	4078	95
	Tc-nom 45 °C	3936	93
	Tc-max 75 °C	3699	88



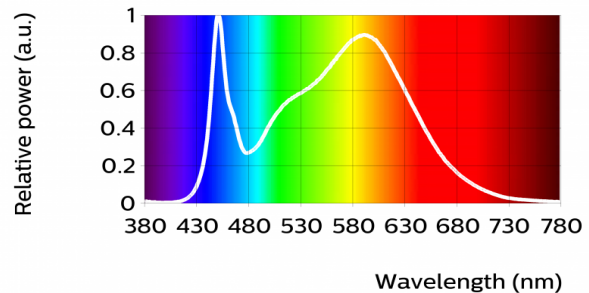
### CertaFlux LED Panel 6060 840 MD2

Parameter	Min	Typ	Max	Unit
Luminous flux	2790	3100	3410	lm
Module efficacy		108		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.380, 0.384)		-
Color consistency			6	SDCM
CRI	80			
Photometric code		840/699		
Radiation angle		115		deg



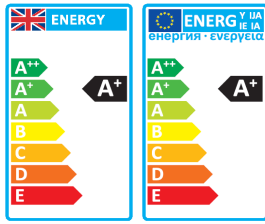
Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$

Operation point	840	lm	lm/W
50% I-nom 400mA	Tc 25 °C	1714	122
	Tc-nom 45 °C	1661	119
	Tc-max 75 °C	1572	114
I-nom 800mA	Tc 25 °C	3206	110
	Tc-nom 45 °C	3100	108
	Tc-max 75 °C	2925	103
I-max 1150mA	Tc 25 °C	4361	102
	Tc-nom 45 °C	4209	99
	Tc-max 75 °C	3956	95



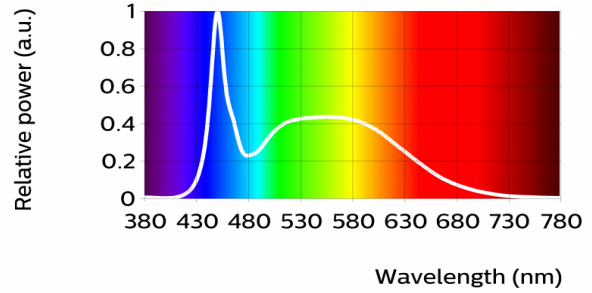
CertaFlux LED Panel 6060 865 MD2

Parameter	Min	Typ	Max	Unit
Luminous flux	2790	3100	3410	lm
Module efficacy		108		lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.311, 0.337)		-
Color consistency			6	SDCM
CRI	80			
Photometric code		865/699		
Radiation angle		115		deg



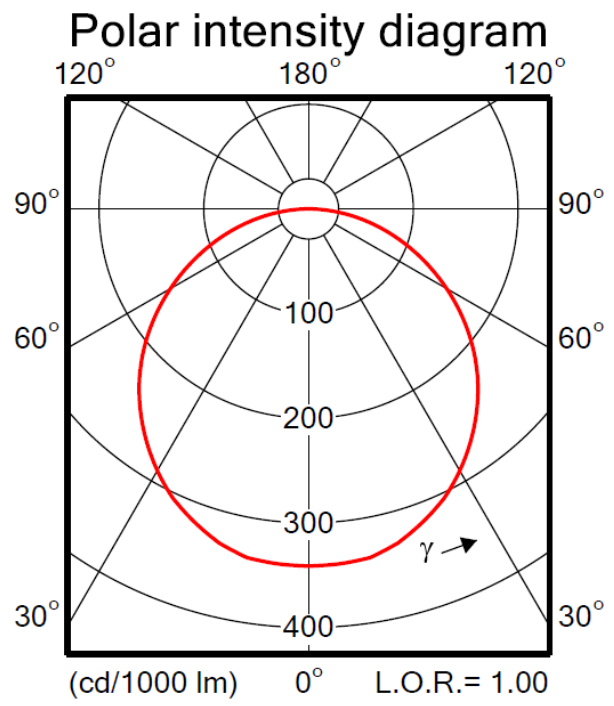
Measurement precision  $\pm 5\%$  for the flux data and  $\pm 6\%$  for the efficacy data. Measurement precision for color coordinates  $\pm 0.005$ . Measurement precision for CRI  $\pm 1.5$

Operation point	865	lm	lm/W
50% I-nom 400mA	Tc 25 °C	1714	122
	Tc-nom 45 °C	1661	119
	Tc-max 75 °C	1572	114
I-nom 800mA	Tc 25 °C	3206	110
	Tc-nom 45 °C	3100	108
	Tc-max 75 °C	2925	103
I-max 1150mA	Tc 25 °C	4361	102
	Tc-nom 45 °C	4209	99
	Tc-max 75 °C	3956	95



## Beam shape

The CertaFlux LED panel creates a Lambertian light distribution.



## Electrical characteristics

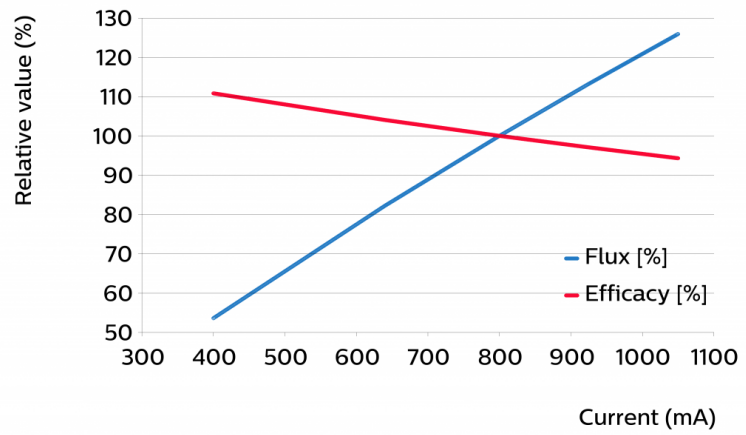
Parameter	Min	Typ	Max	Unit
Forward voltage	33.5	36.0	38.5	V
Power consumption	26.8	28.8	30.8	W = kWh/1000h
Number of modules in series per chain			1	
Number of modules in parallel			1	

Measurement precision for Vf +/- 3%. Measurement precision for power +/- 3.3%  
 Specifications stated at Tc-nom and I-nom

## Tuning information

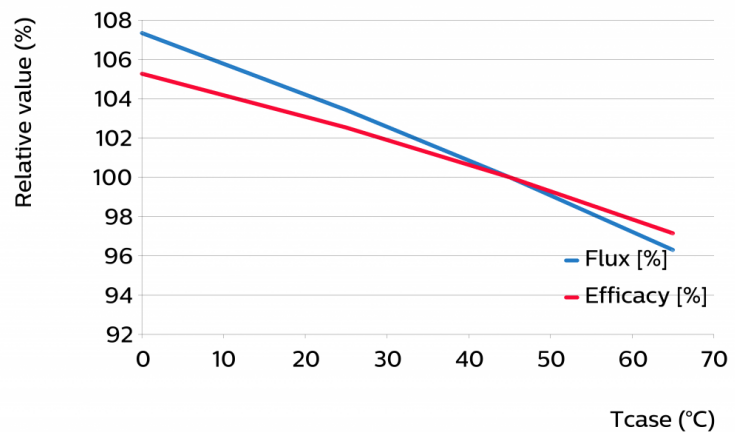
Flux and efficacy versus current (at Tc nominal)

I [mA]	Flux [%]	Efficacy [%]
1050	126	94
925	113	97
800	100	100
640	82	104
400	54	111



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

Tc [°C]	Flux [%]	Efficacy [%]
65	96	97
45	100	100
25	103	103
0	107	105



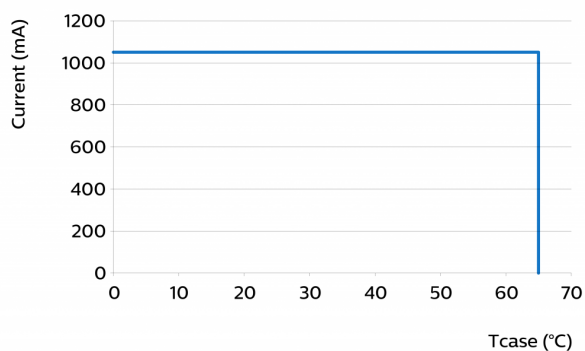
## Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70		
		B50	B20	B10
I nom 800 mA	Tc 45°C	>30	>30	>30
	Tc 65°C	>30	>30	>30
	Tc 75°C	26	23	21
I life 1050 mA	Tc 45°C	>30	>30	>30
	Tc 65°C	>30	>30	>30
	Tc 75°C	21	18	17

## Lifetime

Parameter	Value	Unit
C10 at Tc life	>50000	hours
M70F50 nominal	>30000	hours
M70F50 life	>30000	hours

## Performance Window



## Wiring

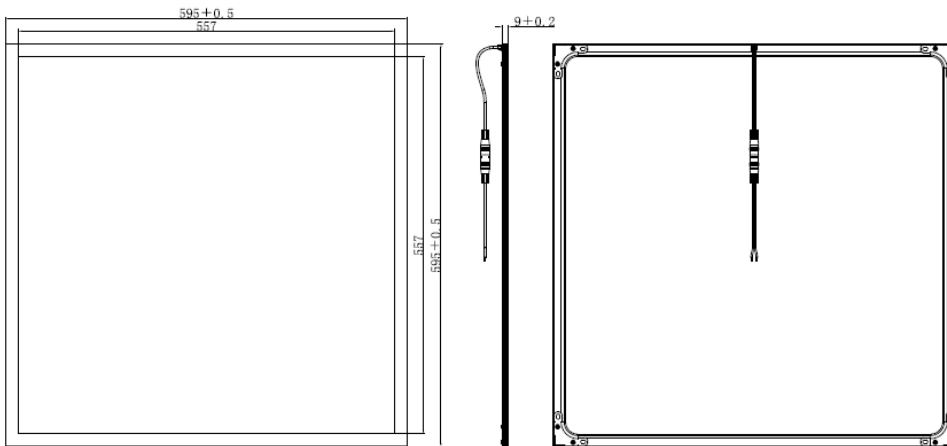
Specification item	Value	Unit	Condition
Input wire cross-section	0.5...0.5	mm <sup>2</sup>	stranded
	20...20	AWG	stranded
Input wire strip length	7...9	mm	



The LED module is provided with a quick install connector pair. Color coding for lead wires: Brown = + and Blue = -

### Mechanical characteristics

Parameter	Min	Typ	Max	Unit
Length	594.5	595	595.5	mm
Width	594.5	595	595.5	mm
Height	8.8	9	9.2	mm
Product mass		2000		gram



### Absolute ratings

Parameter	Min	Max	Unit
Current through the LED module (I-max)		1150	mA
Case temperature (Tc-max)		75	°C
Power at rated Vf-max and I-max		38	W
ESD (direct contact)	8		kV
ESD (air)	15		kV
Working voltage		60	V <sub>dc</sub>
Ambient temperature	-10	45	°C
Storage temperature	-20	60	°C



## Application information

---

### Certificates and Standards

CB  
CE  
IEC 62031  
IEC 60598-1  
IEC 60598-2-1  
IEC 60598-2-2

### Environmental

RoHS/REACH

### Application

IP rating	IP40
Overheating protection	No protection
Luminaire class	IEC Class I, II and III. SELV input only.
Dimming	Yes



© 2020 Signify Holding, IBRS 10461, 5600VB, NL. All rights reserved. The information provided herein is subject to change, without notice. Signify does not give any representation or warranty as to the accuracy or completeness of the information included herein and shall not be liable for any action in reliance thereon. The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract, unless otherwise agreed by Signify.

[www.philips.com/oem](http://www.philips.com/oem)

Philips and the Philips Shield Emblem are registered trademarks of Koninklijke Philips N.V. All other trademarks are owned by Signify Holding or their respective owners.  
UK importer address: 3 Guildford Business Park, GU2 8XG

10/12/2020

# PHILIPS

## CertaDrive

### LED driver



## Datasheet

### CertaDrive G3

CertaDrive 44W 1.05A 42V | 230V

9290 028 19780

#### 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

- Design based on Philips experience and knowledge of lighting
- Various power wattage drivers for different applications
- Independent housing design for stand-alone installations
- Affordable LED Drivers with premium brand

#### Features

- High reliability design proved by G1/G2
- Great EMI performance suitable for different luminaire
- Low ripple current less than 4%
- 30,000 hours lifetime

#### 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 <sub>ac</sub>	Performance range
Rated input voltage	230	V <sub>ac</sub>	
Rated input frequency range	50...60	Hz	Performance range
Rated input current	0.24	A	@ rated output power @ rated input voltage
Rated input power	49.8	W	@ rated output power @ rated input voltage
Power factor	0.9		@ rated output power @ rated input voltage
Total harmonic distortion	20	%	@ rated output power @ rated input voltage
Efficiency	89	%	@ rated output power @ rated input voltage @max. U <sub>out</sub>
Input voltage AC range	202...254	V <sub>ac</sub>	Operational range
Input frequency AC range	47.5...63	Hz	Operational range
Isolation input to output	SELV		

## Electrical output data

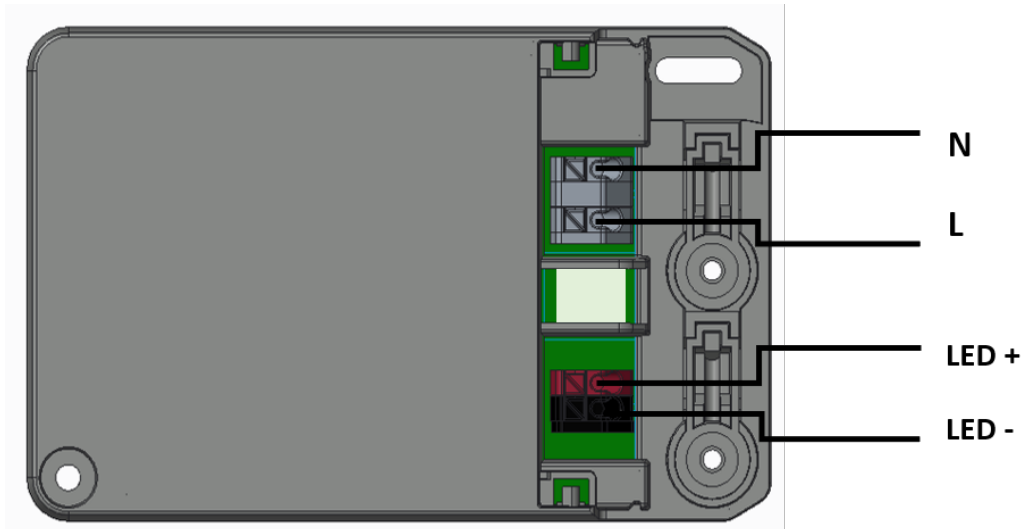
Specification item	Value	Unit	Condition
Regulation method	Constant Current		
Output voltage	30...42	V <sub>dc</sub>	
Output voltage max.	60	V	Maximum output voltage (rms)
Output current	1.05	A	
Output current tolerance	± 8	%	
Output current ripple LF	< 4	%	Ripple = peak / average, < 3kHz
Output P <sub>St</sub> <sup>LM</sup>	≤ 0.04		In entire operating window
Output SVM	≤ 0.07		In entire operating window
Output power	31.5...44	W	

## Electrical data controls input

Specification item	Value	Unit	Condition
Control method			
Isolation controls input to output	NA		acc. IEC61347-1

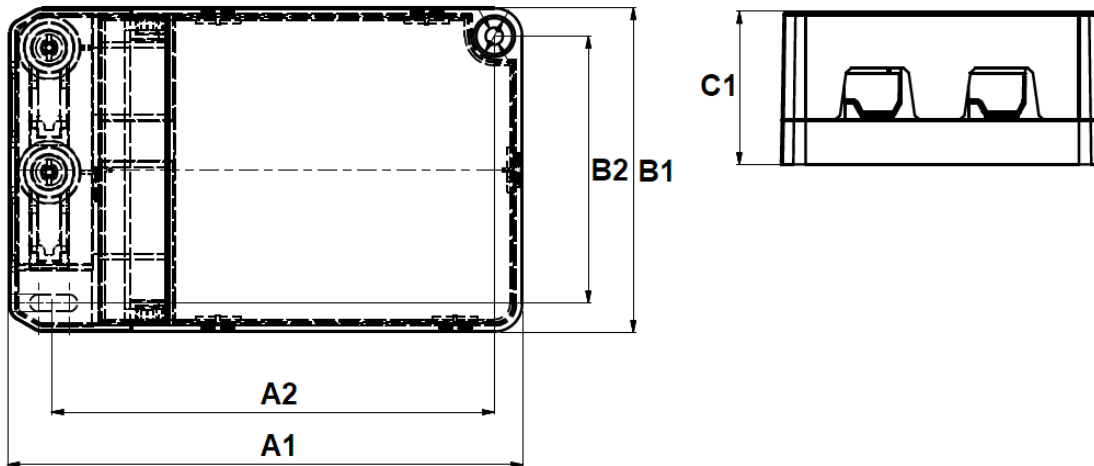
## Wiring and Connections

Specification item	Value	Unit	Condition
Input wire cross-section	0.75...1.5	mm <sup>2</sup>	Type250 (Independent), solid / stranded wire
	18...16	AWG	Type250 (Independent), solid / stranded wire
Input wire strip length	8...9	mm	
Output wire cross-section	0.75...1.5	mm <sup>2</sup>	Type250 (Independent), solid / stranded wire
	18...16	AWG	Type250 (Independent), solid / stranded wire
Output wire strip length	8...9	mm	
Maximum cable length	0.6	m	Total length of wiring including LED module, one way



## Dimensions and weight

Specification item	Value	Unit	Condition
Length (A1)	108	mm	
Mounting hole distance (A2)	91.5	mm	
Width (B1)	68	mm	
Width (B2)	56	mm	
Height (C1)	32	mm	
Mounting hole diameter (D1)	3.6	mm	
Weight	132	gram	



## Logistical data

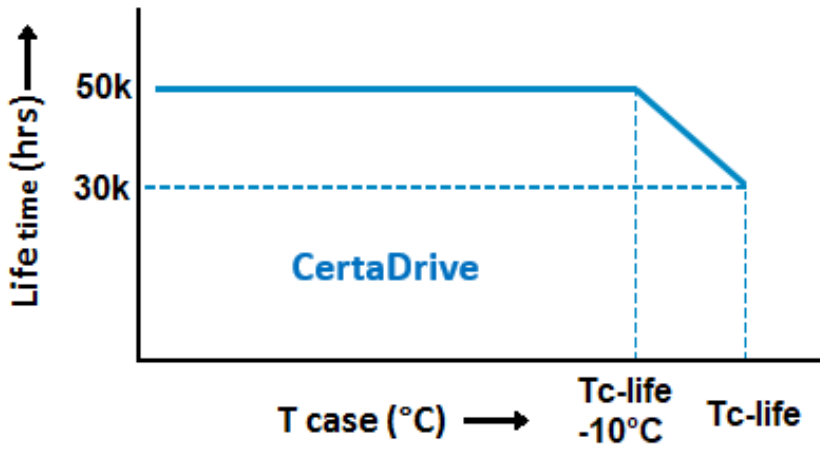
Specification item	Value
Product name	CertaDrive 44W 1.05A 42V I 230V
Logistic code 12NC	9290 028 19780
Pieces per box	40

## Operational temperatures and humidity

Specification item	Value	Unit	Condition
Ambient temperature	-20...+50	°C	Higher ambient temperature allowed as long as T <sub>case-max</sub> is not exceeded
T <sub>case-max</sub>	80	°C	Maximum temperature measured at T <sub>case-point</sub>
T <sub>case-life</sub>	70	°C	Measured at T <sub>case-point</sub>
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%



## Storage temperature and humidity

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

## Programmable features

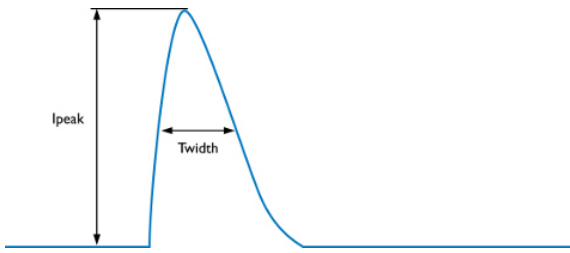
Specification item	Available	Default setting	Condition
Set Adjustable Output Current (AOC)		1050 mA	
LED Module Temperature Protection (MTP)	No		
Constant Lumen Over Lifetime (CLO)	No		
DC emergency dimming (DCemDim)	No		

## Features

Specification item	Value	Remark	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	I and II		per IEC60598

## Inrush current

Specification item	Value	Unit	Condition
Inrush current $I_{peak}$	19.5	A	Input voltage 230V
Inrush current $T_{width}$	258	$\mu$ s	Input voltage 230V, measured at 50% $I_{peak}$
Drivers / MCB 16A type B	$\leq 40$	pcs	Indicative value



MCB	Rating	Relative number of LED drivers
B	4A	25%
B	6A	40%
B	10A	63%
B	13A	81%
B	16A	100% (stated in datasheet)
B	20A	125%
B	25A	156%
B	32A	200%
B	40A	250%
C	4A	42%
C	6A	63%
C	10A	104%
C	13A	135%
C	16A	170%
C	20A	208%
C	25A	260%
C	32A	340%
C	40A	415%

## Driver touch current / protective conductor 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

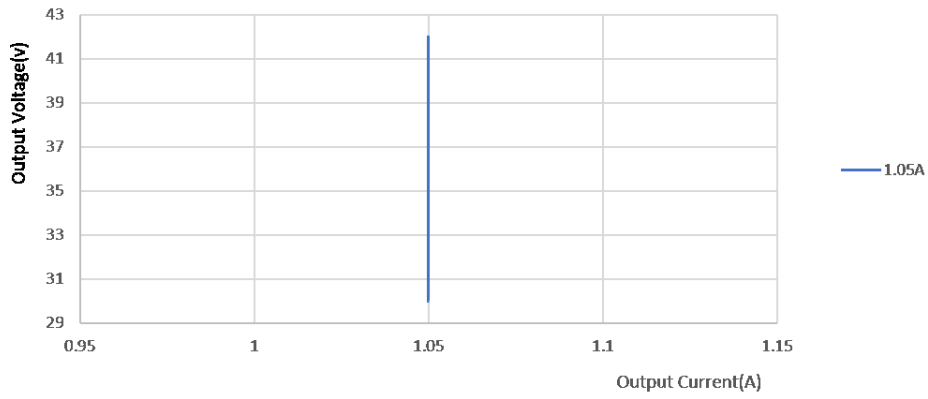
Specification item	Value
Approval marks	CB / CCC / CE / ENEC / KC / RCM / TISI
Ingress Protection classification (IP)	20



## Graphs

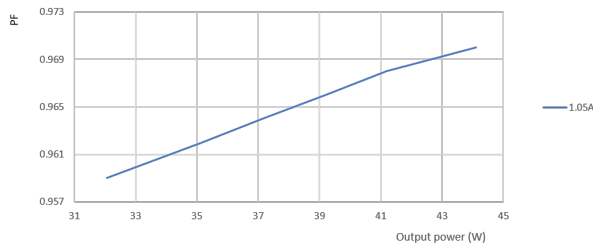
### Operating window

---



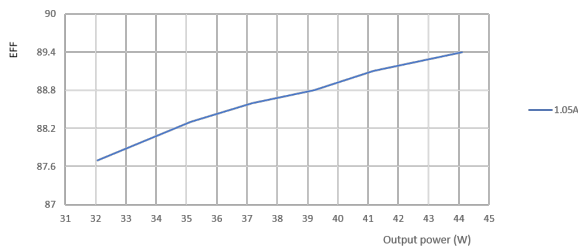
### Power factor versus output power

---



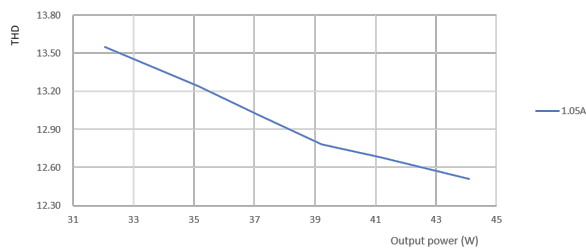
### Efficiency versus output power

---



### THD versus output power

---





©2021 Signify Holding, IBRS 10461, 5600 VB, NL. All rights reserved.

The information provided herein is subject to change without notice. Signify does not give any representation or warranty as to the accuracy or completeness of the information included herein and shall not be liable for any action in reliance thereon. The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract, unless otherwise agreed by Signify.

Philips and the Philips Shield Emblem are registered trademarks of Koninklijke Philips N.V. All other trademarks are owned by Signify Holding or their respective owners.

Date of release: August 16, 2021

[www.philips.com/oem](http://www.philips.com/oem)

## Find your luminaire performance

Lumen Output Ratio (0 - 100%):

Output of the luminaire divided by its lamp output.

Auxiliary power use\* (0 - 15W):

\*at 90% efficiency

Luminaire lumens: 3996 lm

### @Mains:

Luminaire efficacy: (at maximum driver efficiency)

Luminaire input power: (at maximum driver efficiency)

## System characteristics

Number of modules:	1
System luminous flux:	3996 lm
Modules electrically in series per chain:	1
Modules electrically in parallel per chain:	1
Modules electrically in parallel in total:	1
Chains electrically in parallel at least:	1
Maximum modules per chain:	1

### @Mains

System efficacy (at maximum driver efficiency)

# Module parameters

## CertaFlux LED Panel 6060 865 MD2

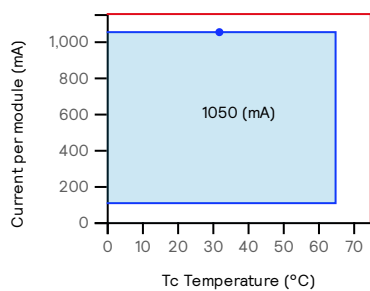


12NC: 929001687606

EOC: 8718699 676230 00

[Download datasheet](#)

Luminous flux:	3996 lm	CCT:	6500
Input current:	1050 mA	CRI:	80
Input voltage:	36.8 V	Tc:	32 °C
Input power:	38.6 W	Thermal Power:	27 W
Efficacy:	103 lm/W		



— Operating range

● Operating range

— Performance range

— I life 1050 (mA)

— Tc life 65 (C)

— I max 1050 (mA)

— Tc max 75 (C)

# Driver parameters

CertaDrive 44W 1.05A 42V I 230V



12NC: 929002819780

EOC: 929002819780

[Download datasheet](#)

Output current:	1050 mA	Output voltage:	36.8 V
		Output Power	38.6 W
		Isolation:	SELV
		Mounting:	Independent, Built-in
		Configurability	Single current
		Tc (life)	70 °C



Go to our technical downloads page for additional content.

[Technical downloads page](#)

[coming soon] This mark identifies the products that are before commercial release and that are not yet available for order.

[obsolete] This mark identifies the products that were phased-out and that are not available for order

#### Warning on modules

Tolerance range for optical flux, efficacy and electrical voltage data is stated in the respective datasheet. Number of modules in parallel per chain might be lesser than the calculated total number of modules in parallel. Please refer to the respective datasheet for the exact numbers.

#### Warning on drivers

Tolerance range for electrical current data is stated in the respective datasheet. For the lower current part of the drivers operating windows, the dimming level is limited by an absolute minimum output current of the driver. For the higher current part of the drivers operating windows, the CLO feature is limited by an absolute maximum output current of the driver. Please refer to specific LED driver Design-In guide. Due to the nature of the manufacturing processes of LED drivers the typical data of technical parameters can only reflect statistical figures and do not necessarily correspond to the actual parameters of each single product which could differ from the typical data. Calculations are made based on sample measurement data. Going below 30% of the driver's maximum output power could increase the uncertainty at which the efficiency can be calculated. Efficiency calculations are informative and represent no warranty claim.

#### Disclaimer of Warranties

The Easy Design-In Tool ("Tool"), the content (including, without limitation, text, images, graphics, links and other materials) of the Tool ("Content") and results generated by using the Tool ("Calculated Results") are provided "as is" and "as available". Signify B.V. and its affiliates, partners, licensors and suppliers hereby expressly disclaim any representation or warranties of any kind, express or implied, including without limitation warranties of merchantability, satisfactory quality, fitness for any particular purpose, non-infringement, or as to the operation of the Tool. Neither Signify B.V., nor its affiliates, partners, licensors and suppliers warrants or makes any representation that (i) the Tool will be uninterrupted, timely, secure or error free, or (ii) the Calculated Results will be correct, complete, accurate, reliable or otherwise meet your requirements.

#### Limitation of Liability

In no event will Signify B.V., or any of its affiliates, or owners or licensors of, or authors or contributors to, the Tool or the Content, be liable for indirect, incidental, special, exemplary or consequential damages (including, but not limited to, loss of profit, lost savings, loss of reputation, loss of goodwill, loss of use, loss of data or business interruption) arising out of or in connection with your use of the Tool (including resulting from the use of the Calculated Results or any report generated by the Tool) whether or not such damages are based on tort, warranty, contract or otherwise, even if advised of the possibility of such damage. Some jurisdictions do not allow the exclusion or limitation of liability for consequential or indirect damages, so the above limitation or exclusion may not apply to you. In no event shall Signify B.V.'s (or that of its affiliates, or owners or licensors of, or authors or contributors to, the Tool or the Content) total liability to you, arising out of or relating to the use of the Tool (whether or not such damages are based on tort, warranty, contract or otherwise) exceeds the amount of fifty Euro (€50). Your use of the Easy Design-In Tool and the Calculated Results are further subject to the Terms of Use – Easy Design-In Tool