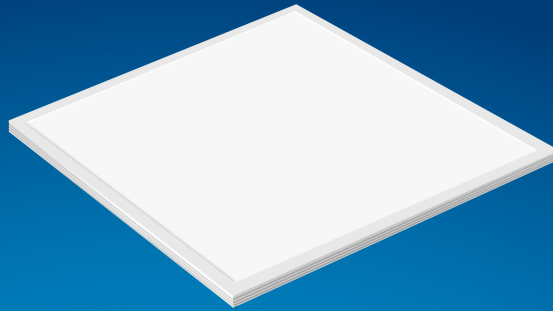


PHILIPS

CertaFlux

LED

CertaFlux LED panel



Datasheet

Infinite possibilities in slim office lighting

CertaFlux LED panel 5959/6060 840/857/865 LV1

CertaFlux LED panel are designed to enable OEM to make ultra-slim LED luminaires for commercial office applications. With various combination of Philips drivers, OEM can offer very wide range of lumen package with a few panel modules which means it benefits maximum flexibility of luminaire offer to OEMs and end-user. CertaFlux LED panel offers excellent product performance and reliability, with good quality of light, meeting market needs for office lighting.

Key features and benefits

- LED module efficacy up to 105 lm/W
- Ultra-slim LED module width less than 10.3mm
- Excellent lighting uniformity
- Meeting office standards for low UGR (less than 20 at 600mA)
- High color rendering (CRI >80)
- High flexibility lumen output 2260 lm to 3600lm
- Choice of color temperatures (4000K, 5700K, 6500K)
- Two square form factors with 595x595mm & 603x603mm
- Three year system warranty and long life-time 25,000 hours

July 2017

Ordering data

| Commercial product name | EOC | 12NC | Box quantity |
|-------------------------------------|-------------------|----------------|--------------|
| CertaFlux LED panel 5959 840 LV1 | 8718696 760437 00 | 9290 014 33406 | 4 |
| CertaFlux LED panel 5959 857 LV1 | 8718696 760451 00 | 9290 014 33506 | 4 |
| CertaFlux LED panel 5959 865 LV1 | 8718696 777145 00 | 9290 014 33606 | 4 |
| CertaFlux LED panel 6060 840 LV1 | 8718696 760499 00 | 9290 014 33706 | 4 |
| CertaFlux LED panel 6060 857 LV1 | 8718696 760574 00 | 9290 014 33806 | 4 |
| CertaFlux LED panel 6060 865 LV1 | 8718696 760475 00 | 9290 014 33906 | 4 |
| CertaFlux LED panel 6060 840 LV1 TW | 8718696 777084 00 | 9290 014 22606 | 4 |
| CertaFlux LED panel 6060 857 LV1 TW | 8718696 777121 00 | 9290 014 22706 | 4 |
| CertaFlux LED panel 6060 865 LV1 TW | 8718696 760550 00 | 9290 014 22806 | 4 |

Drive currents

| Parameter | Nominal* | Life** | Max*** | Unit |
|---------------------|----------|--------|--------|------|
| CertaFlux LED panel | 800 | 1050 | 1200 | mA |

Module temperatures

| Parameter | Nominal* | Life** | Max*** | Unit |
|---|----------|--------|--------|------|
| T _c (case temperature at T _c point) | 50 | 60 | 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

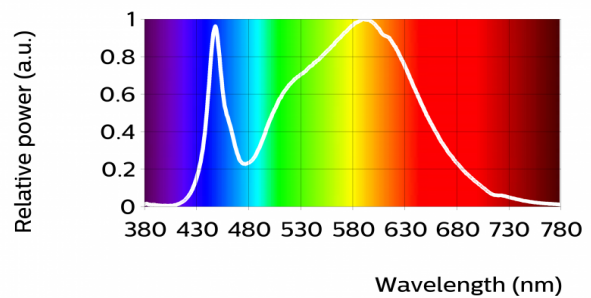
Optical characteristics - table per color (CCT)

[CertaFlux LED panel 5959 840 LV1](#)
[CertaFlux LED panel 6060 840 LV1](#)
[CertaFlux LED panel 6060 840 LV1 TW](#)

| Parameter | Min | Typ | Max | Unit |
|------------------------------------|------|----------------|--------|------|
| Luminous flux | 2610 | 2900 | 3480 | lm |
| Module efficacy | | 100 | | lm/W |
| Correlated color temperature (CCT) | | 4000 | | K |
| Color coordinates (CIEx, CIEy) | | (0.392, 0.394) | | - |
| Color consistency | | | 5 | SDCM |
| CRI | | 80 | | |
| Radiation angle | | 113 | | deg |
| Photobiological safety | | | exempt | |
| $\Delta u'v'$ at 6000 hours | | | 0.007 | |

Measurement precision for flux +/- 5%, for x, y +/- 0.005, for CRI +/- 1.5. Tolerance for efficacy data is dependent on the before mentioned tolerances.

| Operation point | 840 | lm | lm/W |
|-----------------|---------------|------|------|
| 80% I-nom 640mA | Tc 25 °C | 2511 | 109 |
| | Tc-nom 50 °C | 2390 | 105 |
| | Tc-life 60 °C | 2337 | 103 |
| I-nom 800mA | Tc 25 °C | 3053 | 104 |
| | Tc-nom 50 °C | 2900 | 100 |
| | Tc-life 60 °C | 2834 | 98 |
| I-life 1050mA | Tc 25 °C | 3845 | 97 |
| | Tc-nom 50 °C | 3644 | 93 |
| | Tc-life 60 °C | 3556 | 91 |

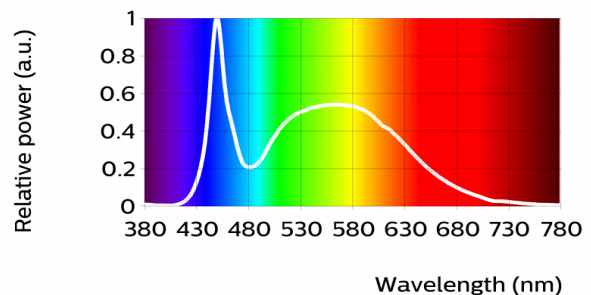


[CertaFlux LED panel 5959 857 LV1](#)
[CertaFlux LED panel 6060 857 LV1](#)
[CertaFlux LED panel 6060 857 LV1 TW](#)

| Parameter | Min | Typ | Max | Unit |
|------------------------------------|------|----------------|--------|------|
| Luminous flux | 2610 | 2900 | 3480 | lm |
| Module efficacy | | 100 | | lm/W |
| Correlated color temperature (CCT) | | 5700 | | K |
| Color coordinates (CIEx, CIEy) | | (0.331, 0.353) | | - |
| Color consistency | | | 5 | SDCM |
| CRI | | 80 | | |
| Radiation angle | | 113 | | deg |
| Photobiological safety | | | exempt | |
| $\Delta u'v'$ at 6000 hours | | | 0.007 | |

Measurement precision for flux +/- 5%, for x, y +/- 0.005, for CRI +/- 1.5. Tolerance for efficacy data is dependent on the before mentioned tolerances.

| Operation point | 857 | lm | lm/W |
|-----------------|---------------|------|------|
| 80% I-nom 640mA | Tc 25 °C | 2511 | 109 |
| | Tc-nom 50 °C | 2390 | 105 |
| | Tc-life 60 °C | 2337 | 103 |
| I-nom 800mA | Tc 25 °C | 3053 | 104 |
| | Tc-nom 50 °C | 2900 | 100 |
| | Tc-life 60 °C | 2834 | 98 |
| I-life 1050mA | Tc 25 °C | 3845 | 97 |
| | Tc-nom 50 °C | 3644 | 93 |
| | Tc-life 60 °C | 3556 | 91 |

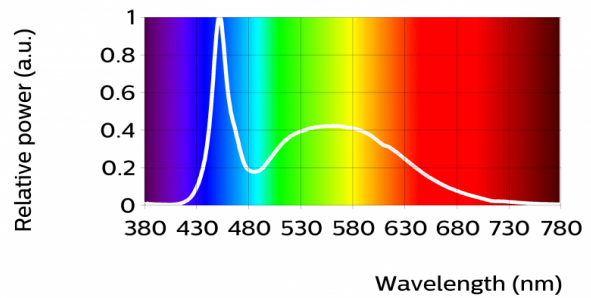


CertaFlux LED panel 5959 865 LV1
 CertaFlux LED panel 6060 865 LV1
 CertaFlux LED panel 6060 865 LV1 TW

| Parameter | Min | Typ | Max | Unit |
|------------------------------------|------|----------------|--------|------|
| Luminous flux | 2610 | 2900 | 3480 | lm |
| Module efficacy | | 100 | | lm/W |
| Correlated color temperature (CCT) | | 6500 | | K |
| Color coordinates (CIEx, CIEy) | | (0.312, 0.328) | | - |
| Color consistency | | | 5 | SDCM |
| CRI | | 80 | | |
| Radiation angle | | 113 | | deg |
| Photobiological safety | | | exempt | |
| $\Delta u'v'$ at 6000 hours | | | 0.007 | |

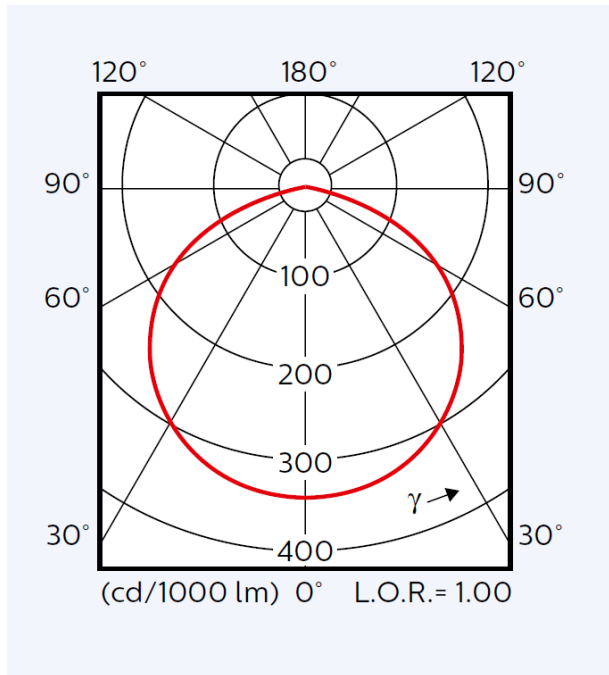
Measurement precision for flux +/- 5%, for x, y +/- 0.005, for CRI +/- 1.5. Tolerance for efficacy data is dependent on the before mentioned tolerances.

| Operation point | 865 | lm | lm/W |
|-----------------|---------------|------|------|
| 80% I-nom 640mA | Tc 25 °C | 2511 | 109 |
| | Tc-nom 50 °C | 2390 | 105 |
| | Tc-life 60 °C | 2337 | 103 |
| I-nom 800mA | Tc 25 °C | 3053 | 104 |
| | Tc-nom 50 °C | 2900 | 100 |
| | Tc-life 60 °C | 2834 | 98 |
| I-life 1050mA | Tc 25 °C | 3845 | 97 |
| | Tc-nom 50 °C | 3644 | 93 |
| | Tc-life 60 °C | 3556 | 91 |



Beam shape

The Philips LED module generates a Lambertian beam shape



Electrical characteristics

[CertaFlux LED panel 5959 840 LV1](#)
[CertaFlux LED panel 5959 857 LV1](#)
[CertaFlux LED panel 5959 865 LV1](#)
[CertaFlux LED panel 6060 840 LV1](#)
[CertaFlux LED panel 6060 857 LV1](#)
[CertaFlux LED panel 6060 865 LV1](#)
[CertaFlux LED panel 6060 840 LV1 TW](#)
[CertaFlux LED panel 6060 857 LV1 TW](#)
[CertaFlux LED panel 6060 865 LV1 TW](#)

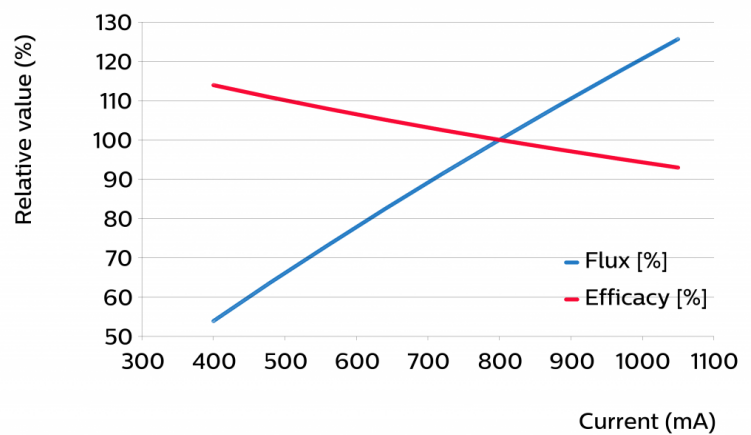
| Parameter | Min | Typ | Max | Unit |
|---|------|------|------|------|
| Forward voltage | 34.8 | 36.6 | 38.2 | V |
| Power consumption | 27.8 | 29.3 | 30.6 | W |
| Number of modules in parallel per chain | | | 1 | |

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

Tuning information

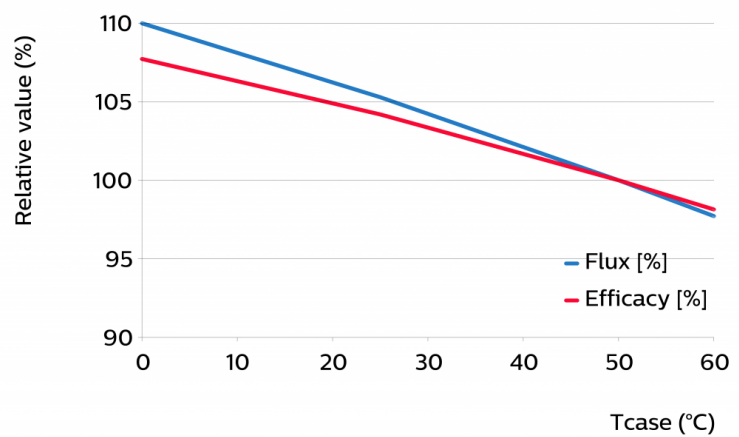
Flux and efficacy versus current (at Tc nominal)

| I [mA] | Flux [%] | Efficacy [%] |
|--------|----------|--------------|
| 1050 | 126 | 93 |
| 970 | 118 | 95 |
| 880 | 108 | 98 |
| 800 | 100 | 100 |
| 720 | 91 | 103 |
| 640 | 82 | 105 |
| 560 | 73 | 108 |
| 480 | 64 | 111 |
| 400 | 54 | 114 |



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

| Tcase [°C] | Flux [%] | Efficacy [%] |
|------------|----------|--------------|
| 60 | 98 | 98 |
| 50 | 100 | 100 |
| 25 | 105 | 104 |
| 0 | 110 | 108 |



Lumen maintenance

| Operation point | Lumen maintenance x 1000 hours | L70 | | | L80 | | | L90 | | |
|-----------------|-----------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | B50 | B20 | B10 | B50 | B20 | B10 | B50 | B20 | B10 |
| I-life 1050 mA | Tc 45°C | 37 | 33 | 29 | 23 | 20 | 18 | 11 | 10 | 9 |
| | Tc 50°C | 33 | 29 | 26 | 21 | 18 | 16 | 10 | 9 | 8 |
| | Tc 60°C | 25 | 22 | 20 | 16 | 14 | 12 | 7 | 6 | 6 |

Note: lifetime is specified up to 35°C ambient temperature.
The module can have up to 8 thermal switching cycles per day.

Wiring

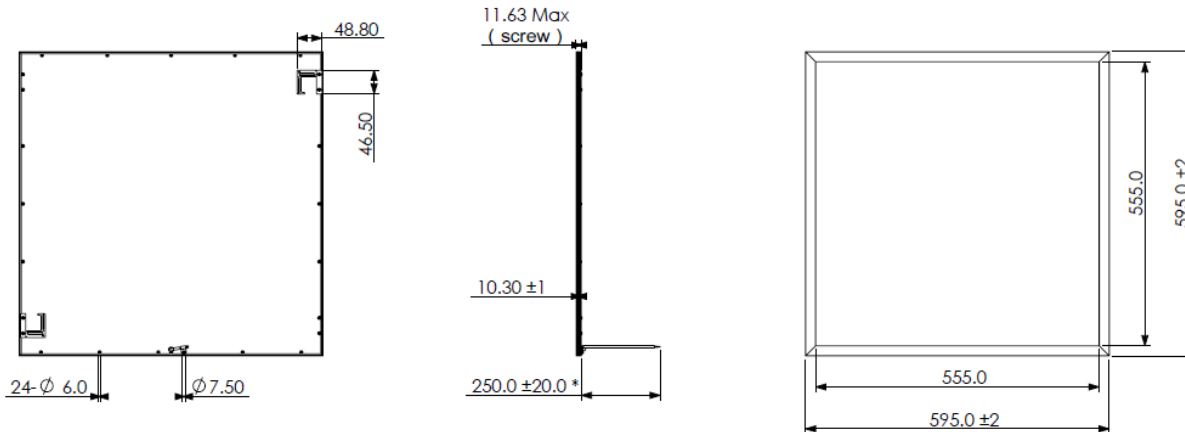
| Specification item | Value | Unit | Condition |
|--------------------------|-----------|-----------------|------------------------|
| Input wire cross-section | 0.5...0.5 | mm ² | solid, fused, stranded |
| | 20...20 | AWG | solid, fused, stranded |
| Input wire strip length | 7...9 | mm | |

Input wire coding: Red = Anode, Black = Cathode

Mechanical characteristics

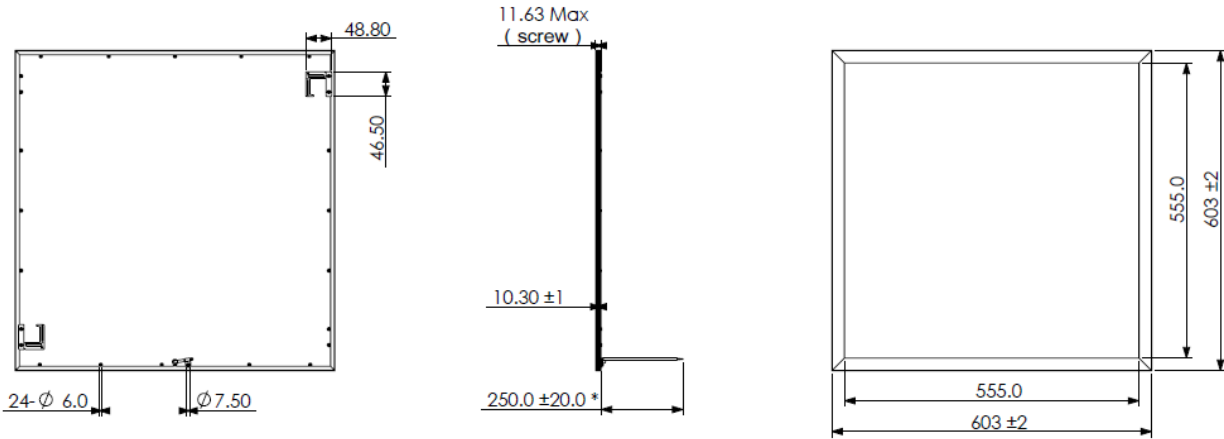
CertaFlux LED panel 5959 840 LV1
CertaFlux LED panel 5959 857 LV1
CertaFlux LED panel 5959 865 LV1

| Parameter | Min | Typ | Max | Unit |
|---|-----|------|------|------|
| Length | 593 | 595 | 597 | mm |
| Width | 593 | 595 | 597 | mm |
| Height excl. cable, screws, and grommet | 9.3 | 10.3 | 11.3 | mm |



CertaFlux LED panel 6060 840 LV1
 CertaFlux LED panel 6060 857 LV1
 CertaFlux LED panel 6060 865 LV1
 CertaFlux LED panel 6060 840 LV1 TW
 CertaFlux LED panel 6060 857 LV1 TW
 CertaFlux LED panel 6060 865 LV1 TW

| Parameter | Min | Typ | Max | Unit |
|---|-----|------|------|------|
| Length | 601 | 603 | 605 | mm |
| Width | 601 | 603 | 605 | mm |
| Height excl. cable, screws, and grommet | 9.3 | 10.3 | 11.3 | mm |



Absolute ratings

| Parameter | Min | Typ | Max | Unit |
|--|-----|-----|------|------|
| Current through the LED module (I-max) | | | 1200 | mA |
| Case temperature (Tc-max) | | | 80 | °C |
| Power at rated Vf-max and I-max | | | 45.6 | W |
| ESD (direct contact) | | | 8 | kV |
| ESD (air) | | | 15 | kV |
| Ambient temperature | 0 | | 40 | °C |
| Storage temperature | -40 | | 50 | °C |

Storage at max 90% relative humidity (non condensing)

Application information

Certificates and Standards

IEC/EN 62031

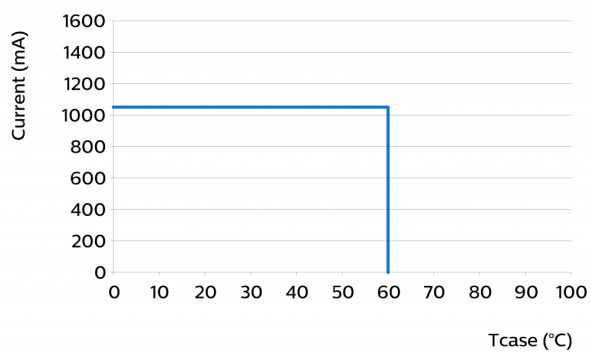
Environmental

RoHS/REACH

Application

| | |
|------------------------|---------------|
| IP rating | IP20 |
| Overheating protection | No protection |
| Luminaire class | IEC Class III |
| Dimming | Yes |

Operating Window





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07/2017