**PHILIPS**
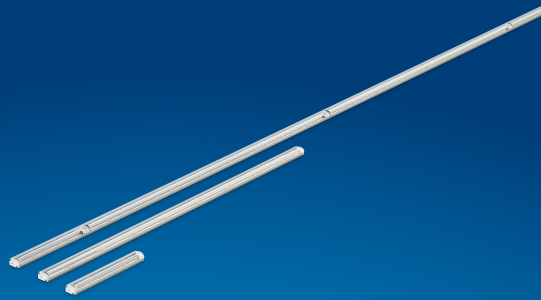
InteGrade

LED

InteGrade engine HF
G3

Datasheet

# InteGrade high flux LED system

## Compact linear LED lighting for ultimate shopping experience

InteGrade engine high flux is not a standalone engine.
It needs to be integrated with a heatsink for thermal management to achieve 50,000 hrs lifetime.
The cabinet framework can be used for that. Our Design in service is available to support you.

### Key features and benefits

- Superb lumen and lux levels grabbing the customer's attention even when behind a glass door
- Exceptional uniform light distribution bringing light right down to the lowest shelf
- Natural merchandise color with specially formulated CRI90 LEDs
- Long life-time: >50,000 hours when integrated with a heatsink
- Miniaturized slim design for aesthetic integration
- Continuous line of light to eliminate undesirable hot spots, glare, reflections
- Maximum design flexibility with extensive range of engine lengths, color temperatures, and accessories
- True System proposition with Xitanium Constant Voltage LED power drivers
- Five year system warranty
- Dimmable
- Start-up time / Warm-up time: instant start-up with full illumination.

June 2019

indirect    100% instant

## Ordering data

| Commercial product name | EOC | 12NC | Box quantity |
|---|---|---|---|
| InteGrade engine HF 140mm WWR G3 | 8718696 808313 00 | 9290 016 22706 | 24 |
| InteGrade engine HF 575mm WWR G3 | 8718696 808399 00 | 9290 016 22806 | 24 |
| InteGrade engine HF 1150mm WWR G3 | 8718696 808511 00 | 9290 016 22906 | 24 |

## Module temperatures

| Parameter | Nominal* | Life** | Max*** | Unit |
|---|---|---|---|---|
| $T_c$ (case temperature at $T_c$ point) | 45 | 45 | 70 | °C |

* Nominal value at which typical performance is specified

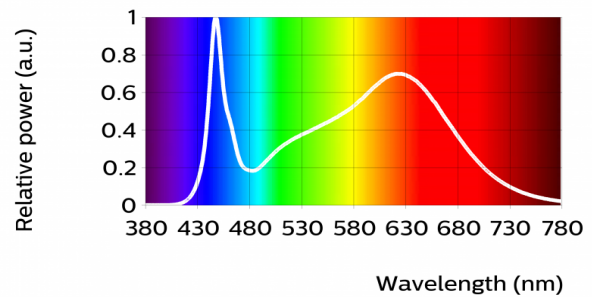** Value at which life time is specified

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

## Optical characteristics - table per color (CCT)

### InteGrade engine HF 140mm WWR G3

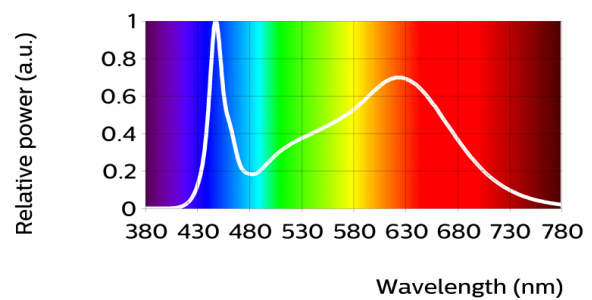| Parameter | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Luminous flux | | 300 | 375 | 450 | lm |
| Color coordinates (CIEx, CIEy) | | | (0.383, 0.325) | | - |
| Color consistency | | | | 5 | SDCM |
| CRI | | 90 | | | |
| Radiation angle | | | 26 | | deg |
| Photobiological safety | | | | RG1 unlimited | |

Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



### InteGrade engine HF 575mm WWR G3

| Parameter | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Luminous flux | | 1200 | 1500 | 1800 | lm |
| Color coordinates (CIEx, CIEy) | | | (0.383, 0.325) | | - |
| Color consistency | | | | 5 | SDCM |
| CRI | | 90 | | | |
| Radiation angle | | | 26 | | deg |
| Photobiological safety | | | | RG1 unlimited | |

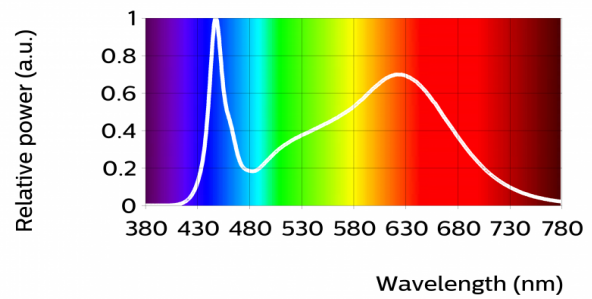Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5
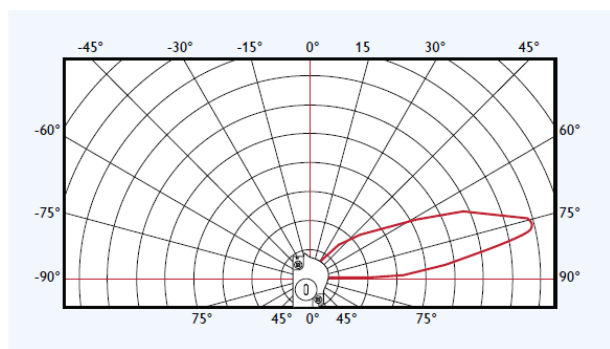
## InteGrade engine HF 1150mm WWR G3

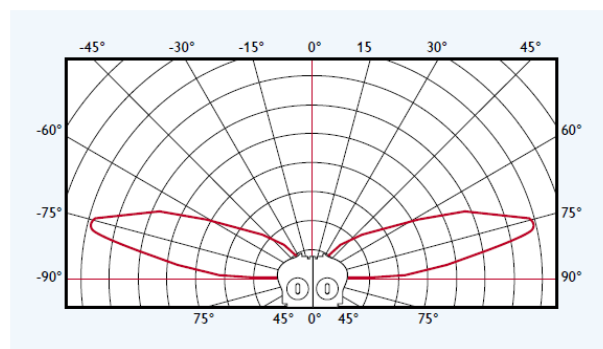| Parameter | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Luminous flux | | 2400 | 3000 | 3600 | lm |
| Color coordinates (CIEx, CIEy) | | | (0.383, 0.325) | | - |
| Color consistency | | | | 5 | SDCM |
| CRI | | 90 | | | |
| Radiation angle | | | 26 | | deg |
| Photobiological safety | | | | RG1 unlimited | |

Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5

## Beam shape



InterGrade LED fixture SD (for edges)



InterGrade LED fixture CTR (for center)

## Electrical characteristics

### InteGrade engine HF 140mm WWR G3

| Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Forward voltage | | 24.0 | | V |
| Power consumption | | 4.4 | | W = kWh/1000h |
| Number of modules in series per chain | | | 8 | |

Measurement precision for power +/- 3.3%

### InteGrade engine HF 575mm WWR G3

| Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Forward voltage | | 24.0 | | V |
| Power consumption | | 17.5 | | W = kWh/1000h |
| Number of modules in series per chain | | | 2 | |

Measurement precision for power +/- 3.3%

### InteGrade engine HF 1150mm WWR G3

| Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Forward voltage | | 24.0 | | V |
| Power consumption | | 35.1 | | W = kWh/1000h |
| Number of modules in series per chain | | | 1 | |

Measurement precision for power +/- 3.3%

## Lumen maintenance

| Operation point | Lumen maintenance x 1000 hours | L70 | | | L80 | | |
|---|---|---|---|---|---|---|---|
| | | B50 | B20 | B10 | B50 | B20 | B10 |
| | Tc 35°C | 67 | 66 | 65 | 42 | 41 | 40 |
| | Tc 45°C | 62 | 61 | 60 | 39 | 38 | 37 |

## Lifetime

| Parameter | Value | Unit |
|---|---|---|
| M70F50 nominal | 100000 | hours |
| M70F50 life | 74000 | hours |

Switching cycles in accordance to EU 1194/2012: >15000
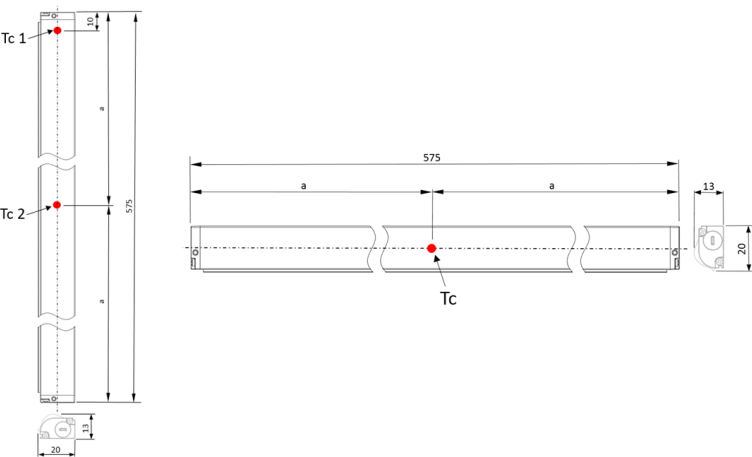
## Mechanical characteristics

InteGrade engine HF 140mm WWR G3

| Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Length | 138 | 140 | 142 | mm |
| Width | 19.4 | 19.7 | 20 | mm |
| Height | 12.5 | 13 | 13.5 | mm |
| Product mass | | 30 | | gram |
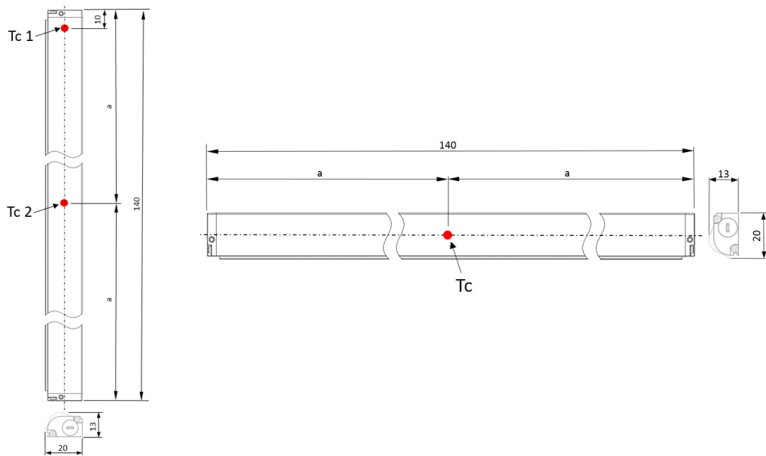
InteGrade engine HF 575mm WWR G3

| Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Length | 573 | 575 | 577 | mm |
| Width | 19.4 | 19.7 | 20 | mm |
| Height | 12.5 | 13 | 13.5 | mm |
| Product mass | | 140 | | gram |

InteGrade engine HF 1150mm WWR G3

| Parameter | Min | Typ | Max | Unit |
|---|---|---|---|---|
| Length | 1148 | 1149 | 1151 | mm |
| Width | 19.4 | 19.7 | 20 | mm |
| Height | 12.5 | 13 | 13.5 | mm |
| Product mass | | 247 | | gram |
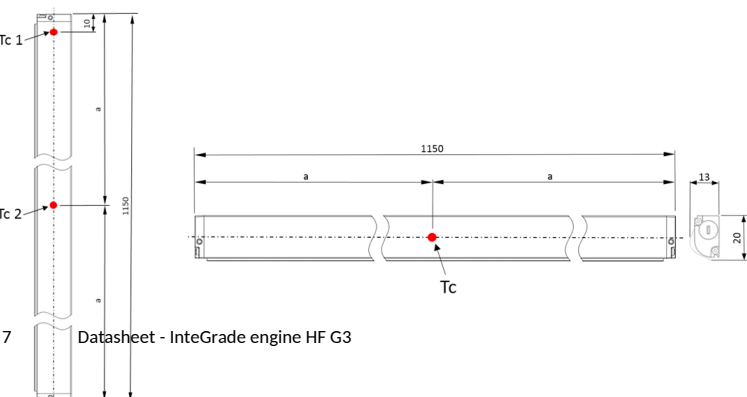
## Absolute ratings

| Parameter | Min | Max | Unit |
|---|---|---|---|
| Case temperature (Tc-max) | | 70 | ℃ |
| ESD (direct contact) | | 4 | kV |
| ESD (air) | | 8 | kV |
| Storage temperature | -30 | 60 | ℃ |

## Application information

### Certificates and Standards
IEC/EN 62031
IEC/EN 62471
Relevant clauses of IEC/EN 60335-1 (relevant clauses)
Annex BB of IEC/EN 60335-2-89
Annex CC of IEC/EN 60335-2-24
CSA C22.2 No.9.0-96
UL 2108
NSF

### Environmental
RoHS/REACH

| Application | |
|---|---|
| IP rating | No IP-rating, fit for use in coolers and freezers |
| Overheating protection | No protection |
| Luminaire class | IEC Class III if connected to a SELV driver |
| Dimming | Yes |

The InteGrade system is certified with the household standard compliant SELV Philips LED Power drivers

## Notes

Special colors; Modules with WWR and XR color are special purpose modules for refrigerated cabinets, not for general lighting.

www.philips.com/oem

25/06/2019