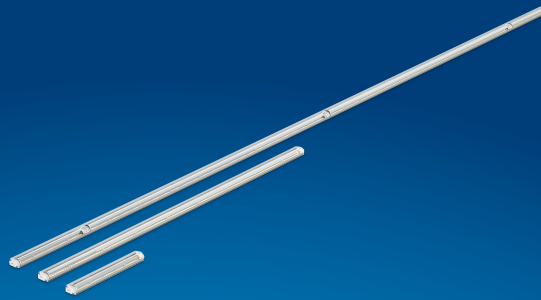


**PHILIPS**

**InteGrade**

**LED**

InteGrade engine HF  
PW 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 might need 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
- Enhanced whites and astonishingly rich colors while also offering superior light quality thanks to a typical CRI 93.
- 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

February 2019



indirect



instant

## Ordering data

Commercial product name	EOC	12NC	Box quantity
InteGrade engine HF 140mm 930 PW G3	8718696 759196 00	9290 016 05606	24
InteGrade engine HF 140mm 940 PW G3	8718696 759219 00	9290 016 05906	24
InteGrade engine HF 575mm 930 PW G3	8718696 759813 00	9290 016 05706	24
InteGrade engine HF 575mm 940 PW G3	8718696 759837 00	9290 016 06006	24
InteGrade engine HF 1150mm 930 PW G3	8718696 759677 00	9290 016 05806	24
InteGrade engine HF 1150mm 940 PW G3	8718696 759691 00	9290 016 06106	24

## Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T <sub>c</sub> (case temperature at T <sub>c</sub> 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)

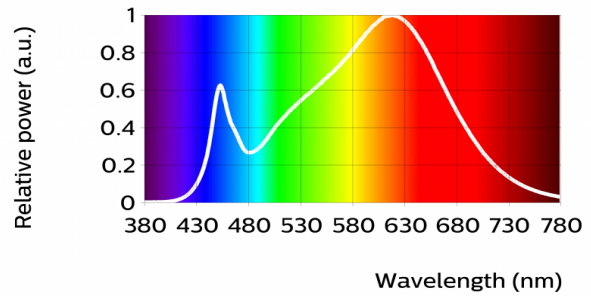
### InteGrade engine HF 140mm 930 PW G3

Parameter	Min	Typ	Max	Unit
Luminous flux	320	400	480	lm
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.384)		-
Color consistency			5	SDCM
CRI	90	93		
Photobiological safety			RG1 unlimited	



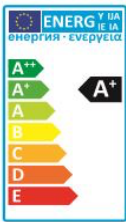
R9 of 60, typical value

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



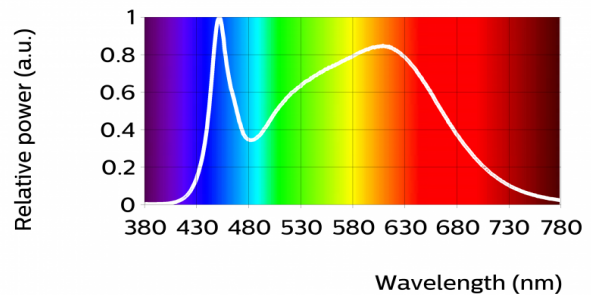
### InteGrade engine HF 140mm 940 PW G3

Parameter	Min	Typ	Max	Unit
Luminous flux	320	400	480	lm
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.360)		-
Color consistency			5	SDCM
CRI	90	93		
Photobiological safety			RG1 unlimited	



R9 of 60, typical value

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



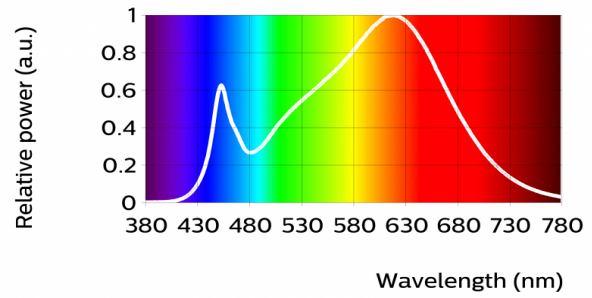
InteGrade engine HF 575mm 930 PW G3

Parameter	Min	Typ	Max	Unit
Luminous flux	1260	1575	1890	lm
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.384)		-
Color consistency			5	SDCM
CRI	90	93		
Photobiological safety			RG1 unlimited	



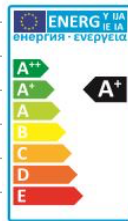
R9 of 60, typical value

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



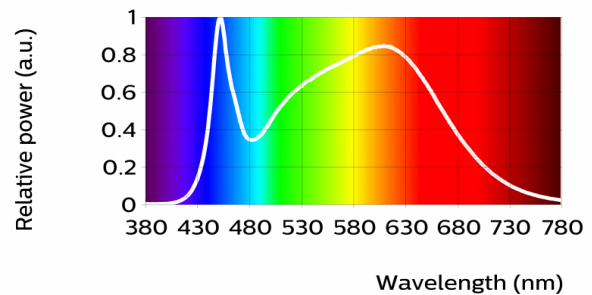
InteGrade engine HF 575mm 940 PW G3

Parameter	Min	Typ	Max	Unit
Luminous flux	1260	1575	1890	lm
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.360)		-
Color consistency			5	SDCM
CRI	90	93		
Photobiological safety			RG1 unlimited	



R9 of 60, typical value

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



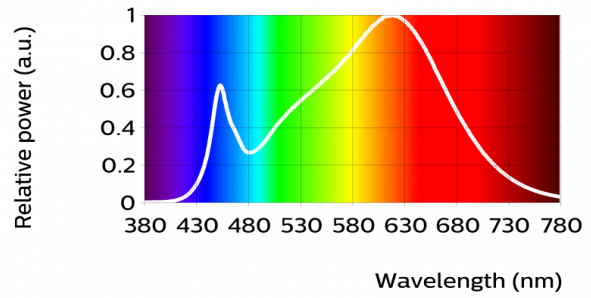
InteGrade engine HF 1150mm 930 PW G3

Parameter	Min	Typ	Max	Unit
Luminous flux	2520	3150	3780	lm
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.384)		-
Color consistency			5	SDCM
CRI	90	93		
Photobiological safety			RG1 unlimited	



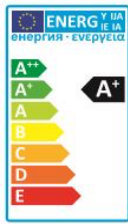
R9 of 60, typical value

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



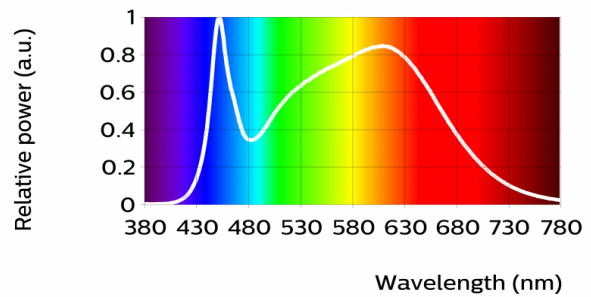
InteGrade engine HF 1150mm 940 PW G3

Parameter	Min	Typ	Max	Unit
Luminous flux	2520	3150	3780	lm
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.360)		-
Color consistency			5	SDCM
CRI	90	93		
Photobiological safety			RG1 unlimited	

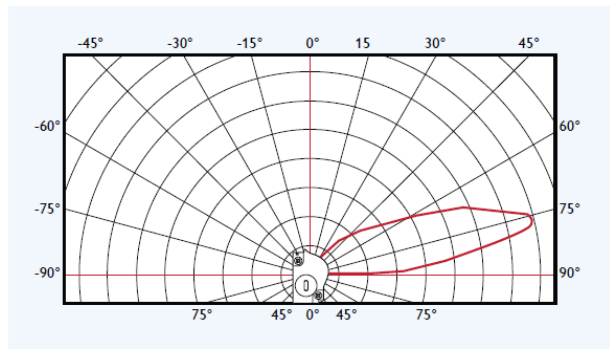


R9 of 60, typical value

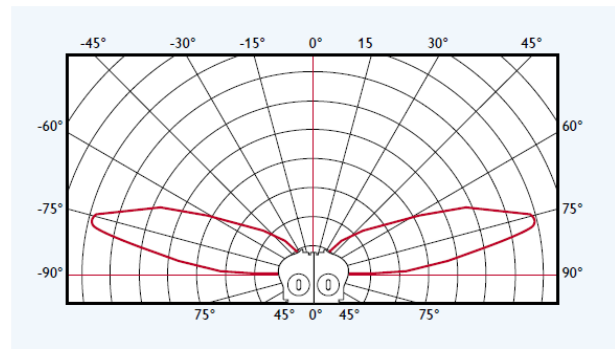
Measurement precision for flux +/- 5%, for efficacy +/- 6%, for x, y +/- 0.005, for CRI +/- 1.5



## Beam shape



InterGrade LED fixture SD (for edges)



InterGrade LED fixture CTR (for center)

## Electrical characteristics

### InteGrade engine HF 140mm 930 PW 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 140mm 940 PW G3

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		4.0		W = kWh/1000h
Number of modules in series per chain			8	
Measurement precision for power +/- 3.3%				

### InteGrade engine HF 575mm 930 PW 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 575mm 940 PW G3

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		16.1		W = kWh/1000h
Number of modules in series per chain			2	
Measurement precision for power +/- 3.3%				

### InteGrade engine HF 1150mm 930 PW G3

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		34.9		W = kWh/1000h
Number of modules in series per chain			1	
Measurement precision for power +/- 3.3%				

### InteGrade engine HF 1150mm 940 PW G3

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		32.2		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

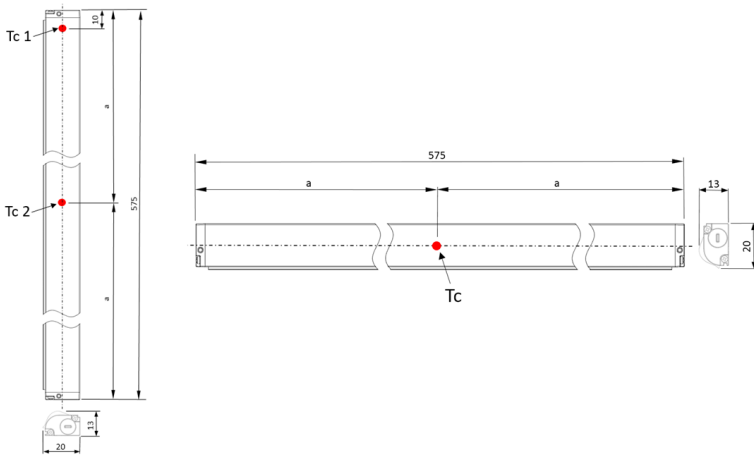
Switching cycles in accordance to EU 1194/2012: >15000

## Mechanical characteristics

InteGrade engine HF 575mm 930 PW G3

InteGrade engine HF 575mm 940 PW G3

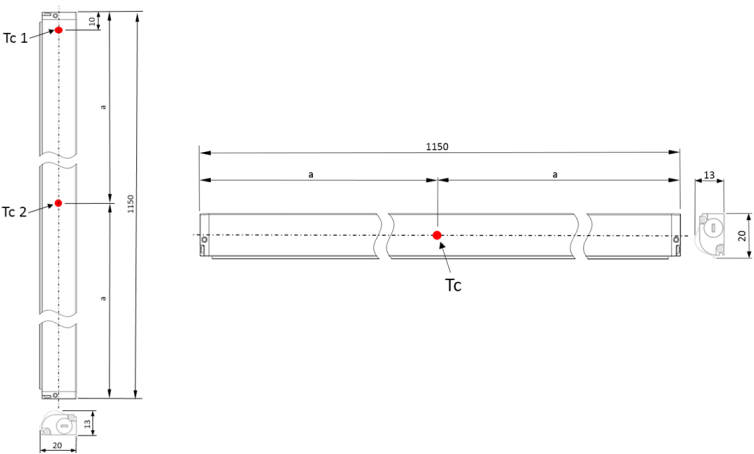
Parameter	Min	Typ	Max	Unit
Length	571	575	579	mm
Width	18.2	18.5	18.7	mm
Height	10.5	11	13.5	mm
Product mass		140		gram



InteGrade engine HF 1150mm 930 PW G3

InteGrade engine HF 1150mm 940 PW G3

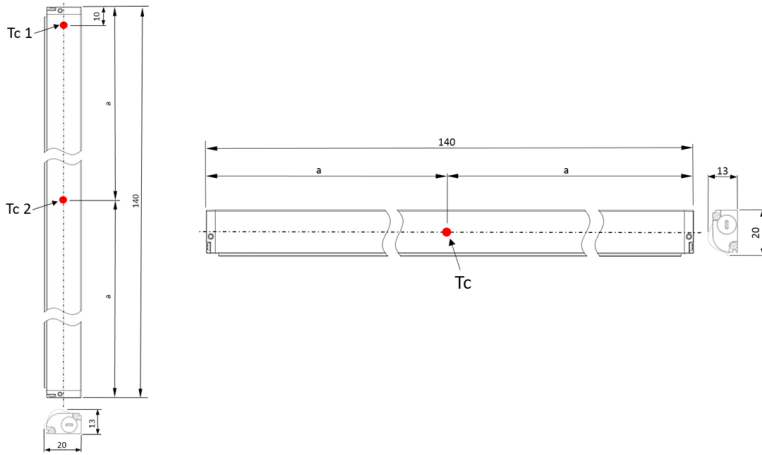
Parameter	Min	Typ	Max	Unit
Length	1146	1150	1154	mm
Width	18.2	18.5	18.7	mm
Height	10.5	11	13.5	mm
Product mass		247		gram





InteGrade engine HF 140mm 930 PW G3  
 InteGrade engine HF 140mm 940 PW G3

Parameter	Min	Typ	Max	Unit
Length	136	140	144	mm
Width	18.2	18.5	18.7	mm
Height	10.5	11	13.5	mm
Product mass		30		gram



### Absolute ratings

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

### Application information

#### Certificates and Standards

IEC/EN 62031  
 IEC/EN 62471  
 Relevant clauses of IEC/EN 60335-1  
 Annex BB of IEC/EN 60335-2-89  
 Annex CC of IEC/EN 60335-2-24  
 CSA C22.2 No.9  
 UL 2108  
 NSF (allows usage in the vicinity of Food)

#### 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



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06/02/2019