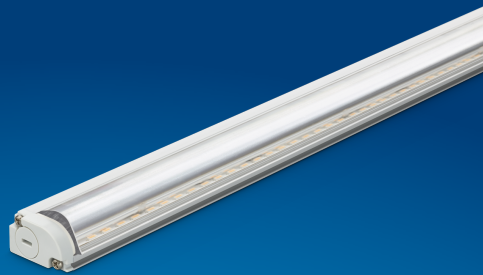


PHILIPS

InteGrade

LED

InteGrade engine HF PW
G4



Datasheet

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

- Miniaturized slim design for aesthetic integration
- Premium color consistency up to 3SDCM over lifetime
- Natural merchandise color with specially formulated LEDs up to CRI95
- State of the Art LED diode delivering up to 190 lm/W
- Modules performing up to 102 lm/w meeting SLR (Single Lighting Regulation)
- Unique Premium White light for brightest whites and outstanding merchandise attractiveness
- Superb lumen and lux levels grabbing the customer's attention even when behind a glass door
- Maximum design flexibility with extensive range of engine lengths
- Color temperatures (3000 PW, 4000 PW)
- True System proposition with five-year system warranty with Philips LED Power Drivers
- Reduced power consumption for energy saving
- Long lifetime: >50,000 hours
- Dimmable

September 2021



Ordering data

Commercial product name	EOC	12NC	Box quantity
InteGrade engine HF 140mm 930 PW G4	8718699 744779 00	9290 021 62306	24
InteGrade engine HF 140mm 940 PW G4	8718699 744793 00	9290 021 62406	24
InteGrade engine HF 575mm 930 PW G4	8718699 744816 00	9290 021 62506	24
InteGrade engine HF 575mm 940 PW G4	8718699 744830 00	9290 021 62606	24
InteGrade engine HF 760mm 930 PW G4	8718699 757014 00	9290 021 86206	24
InteGrade engine HF 760mm 940 PW G4	8718699 757038 00	9290 021 86306	24
InteGrade engine HF 1150mm 930 PW G4	8718699 744854 00	9290 021 62706	24
InteGrade engine HF 1150mm 940 PW G4	8718699 744878 00	9290 021 62806	24
InteGrade engine HF 1570mm 930 PW G4	8718699 745233 00	9290 021 63506	12
InteGrade engine HF 1570mm 940 PW G4	8718699 745257 00	9290 021 63606	12
InteGrade engine HF 1660mm 930 PW G4	8718699 757137 00	9290 021 86506	12
InteGrade engine HF 1660mm 940 PW G4	8718699 757151 00	9290 021 86606	12

Key Specifications at Nominal conditions

Name	12NC	Power (W)	Luminous Flux (lm)	Useful Flux (lm)	CRI
InteGrade engine HF 140mm 930 PW G4	9290 021 62306	4.44	404	372	95
InteGrade engine HF 140mm 940 PW G4	9290 021 62406	4.06	406	374	95
InteGrade engine HF 575mm 930 PW G4	9290 021 62506	17.2	1594	1466	95
InteGrade engine HF 575mm 940 PW G4	9290 021 62606	15.6	1587	1460	95
InteGrade engine HF 760mm 930 PW G4	9290 021 86206	22.9	2115	1946	95
InteGrade engine HF 760mm 940 PW G4	9290 021 86306	20.7	2101	1933	95
InteGrade engine HF 1150mm 930 PW G4	9290 021 62706	34.4	3188	2933	95
InteGrade engine HF 1150mm 940 PW G4	9290 021 62806	31.2	3175	2921	95
InteGrade engine HF 1570mm 930 PW G4	9290 021 63506	47.7	4399	4047	95
InteGrade engine HF 1570mm 940 PW G4	9290 021 63606	43.4	4392	4041	95
InteGrade engine HF 1660mm 930 PW G4	9290 021 86506	50.2	4633	4262	95
InteGrade engine HF 1660mm 940 PW G4	9290 021 86606	45.5	4607	4238	95

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

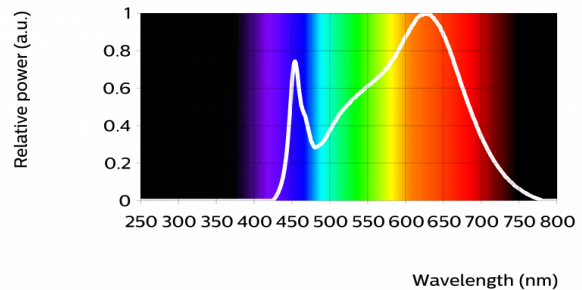
Optical characteristics - table per color (CCT)

InteGrade engine HF 140mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	373	404	484	lm
Flux within 120° cone		372		lm
Module efficacy		91		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.381)		-
Color consistency			3	SDCM
CRI	93	95		
R9	75			
Photometric code		930/359		
Radiation angle		26		deg
Peak intensity		435		cd
Photobiological safety			RG1 unlimited	



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

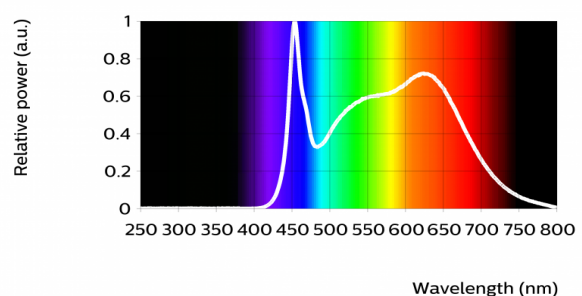


InteGrade engine HF 140mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	375	406	487	lm
Flux within 120° cone		374		lm
Module efficacy		100		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.359)		-
Color consistency			3	SDCM
CRI	93	95		
R9	85			
Photometric code		940/359		
Radiation angle		26		deg
Peak intensity		437		cd
Photobiological safety			RG1 unlimited	



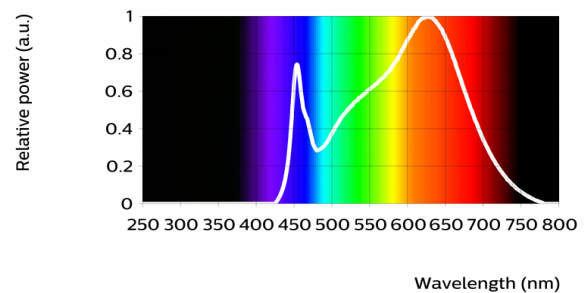
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 575mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1474	1594	1913	lm
Flux within 120° cone		1466		lm
Module efficacy		93		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.381)		-
Color consistency			3	SDCM
CRI	93	95		
R9	75			
Photometric code		930/359		
Radiation angle		26		deg
Peak intensity		1717		cd
Photobiological safety			RG1 unlimited	

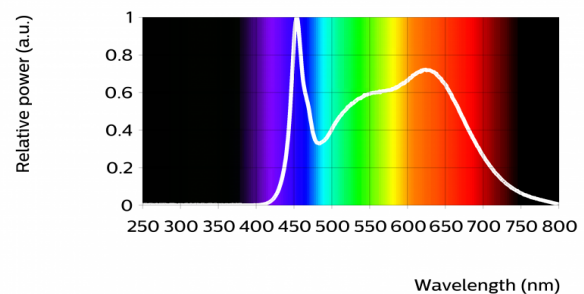
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 575mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1468	1587	1905	lm
Flux within 120° cone		1460		lm
Module efficacy		102		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.359)		-
Color consistency			3	SDCM
CRI	93	95		
R9	85			
Photometric code		940/359		
Radiation angle		26		deg
Peak intensity		1709		cd
Photobiological safety			RG1 unlimited	

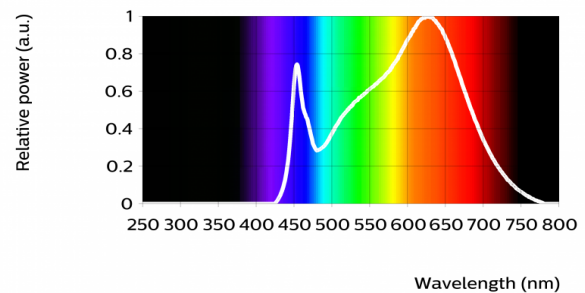
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 760mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1956	2115	2538	lm
Flux within 120° cone		1946		lm
Module efficacy		92		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.381)		-
Color consistency			3	SDCM
CRI	93	95		
R9	75			
Photometric code		930/359		
Radiation angle		26		deg
Peak intensity		2278		cd
Photobiological safety			RG1 unlimited	

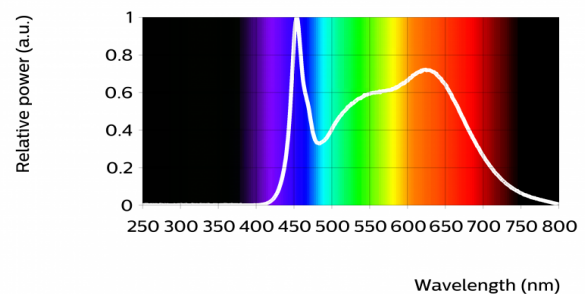
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 760mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1943	2101	2521	lm
Flux within 120° cone		1933		lm
Module efficacy		101		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.359)		-
Color consistency			3	SDCM
CRI	93	95		
R9	85			
Photometric code		940/359		
Radiation angle		26		deg
Peak intensity		2263		cd
Photobiological safety			RG1 unlimited	

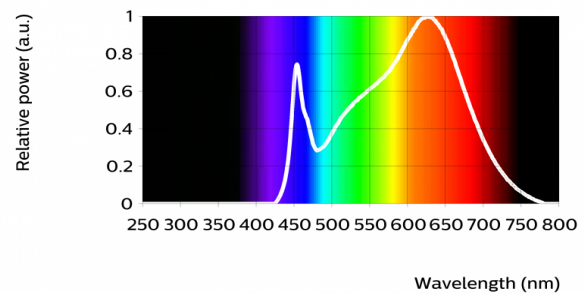
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 1150mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	2949	3188	3826	lm
Flux within 120° cone		2933		lm
Module efficacy		93		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.381)		-
Color consistency			3	SDCM
CRI	93	95		
R9	75			
Photometric code		930/359		
Radiation angle		26		deg
Peak intensity		3434		cd
Photobiological safety			RG1 unlimited	

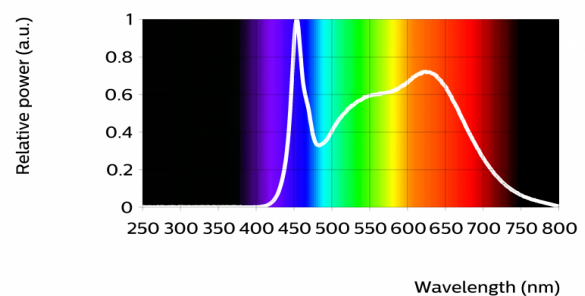
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 1150mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	2937	3175	3810	lm
Flux within 120° cone		2921		lm
Module efficacy		102		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.359)		-
Color consistency			3	SDCM
CRI	93	95		
R9	85			
Photometric code		940/359		
Radiation angle		26		deg
Peak intensity		3420		cd
Photobiological safety			RG1 unlimited	

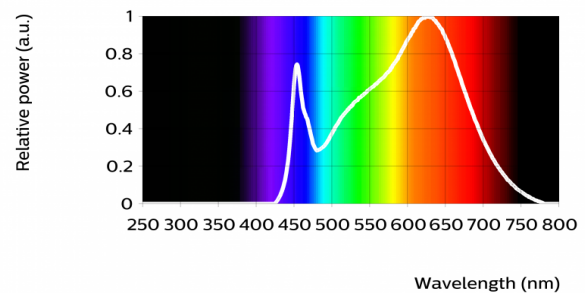
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 1570mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	4069	4399	5279	lm
Flux within 120° cone		4047		lm
Module efficacy		92		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.381)		-
Color consistency			3	SDCM
CRI	93	95		
R9	75			
Photometric code		930/359		
Radiation angle		26		deg
Peak intensity		4738		cd
Photobiological safety			RG1 unlimited	

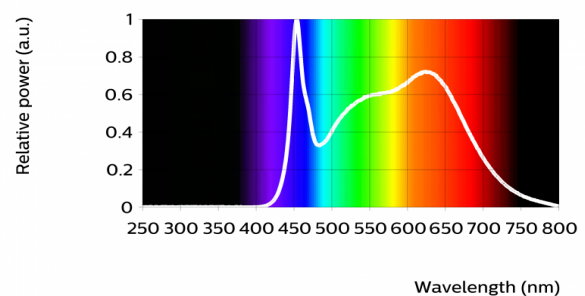
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 1570mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	4063	4392	5271	lm
Flux within 120° cone		4041		lm
Module efficacy		101		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.359)		-
Color consistency			3	SDCM
CRI	93	95		
R9	85			
Photometric code		940/359		
Radiation angle		26		deg
Peak intensity		4730		cd
Photobiological safety			RG1 unlimited	

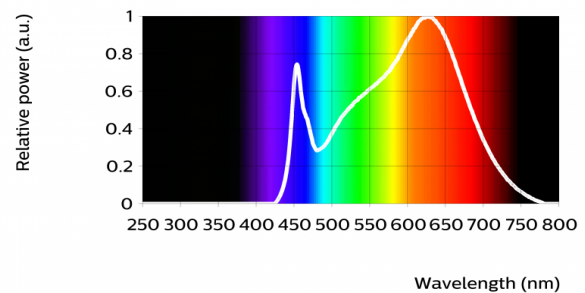
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 1660mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Luminous flux	4286	4633	5560	lm
Flux within 120° cone		4262		lm
Module efficacy		92		lm/W
Correlated color temperature (CCT)		3000		K
Color coordinates (CIEx, CIEy)		(0.419, 0.381)		-
Color consistency			3	SDCM
CRI	93	95		
R9	75			
Photometric code		930/359		
Radiation angle		26		deg
Peak intensity		4990		cd
Photobiological safety			RG1 unlimited	

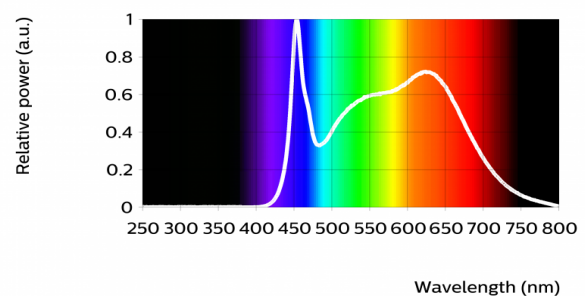
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine HF 1660mm 940 PW G4

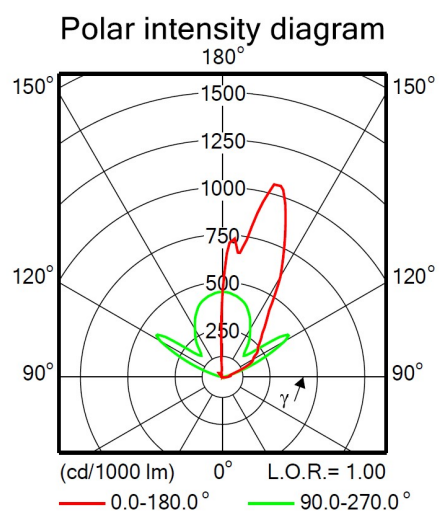
Parameter	Min	Typ	Max	Unit
Luminous flux	4262	4607	5529	lm
Flux within 120° cone		4238		lm
Module efficacy		101		lm/W
Correlated color temperature (CCT)		4000		K
Color coordinates (CIEx, CIEy)		(0.372, 0.359)		-
Color consistency			3	SDCM
CRI	93	95		
R9	85			
Photometric code		940/359		
Radiation angle		26		deg
Peak intensity		4962		cd
Photobiological safety			RG1 unlimited	

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



Beam shape

Light distribution, scaled to cd per 1000lm



Electrical characteristics

InteGrade engine HF 140mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		4.44		W = kWh/1000h
Number of modules per chain			8	

InteGrade engine HF 140mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		4.06		W = kWh/1000h
Number of modules per chain			8	

InteGrade engine HF 575mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		17.2		W = kWh/1000h
Number of modules per chain			2	

InteGrade engine HF 575mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		15.6		W = kWh/1000h
Number of modules per chain			2	

InteGrade engine HF 760mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		22.9		W = kWh/1000h
Number of modules per chain			2	

InteGrade engine HF 760mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		20.7		W = kWh/1000h
Number of modules per chain			2	

InteGrade engine HF 1150mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		34.4		W = kWh/1000h
Number of modules per chain			1	

InteGrade engine HF 1150mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		31.2		W = kWh/1000h
Number of modules per chain			1	

InteGrade engine HF 1660mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		50.2		W = kWh/1000h
Number of modules per chain			1	

InteGrade engine HF 1570mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		43.4		W = kWh/1000h
Number of modules per chain			1	

InteGrade engine HF 1570mm 930 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		47.7		W = kWh/1000h
Number of modules per chain			1	

InteGrade engine HF 1660mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		45.5		W = kWh/1000h
Number of modules per chain			1	

Lumen maintenance

Operation point	Lumen maintenance x 1000 hours	L70			L80		
		B50	B20	B10	B50	B20	B10
	Ta -20°C	>100	>100	>100	>100	>100	>100
	Ta 5°C	>100	>100	>100	>100	>100	>100
	Ta 30°C	>100	>100	>100	>100	>100	>100

Lifetime

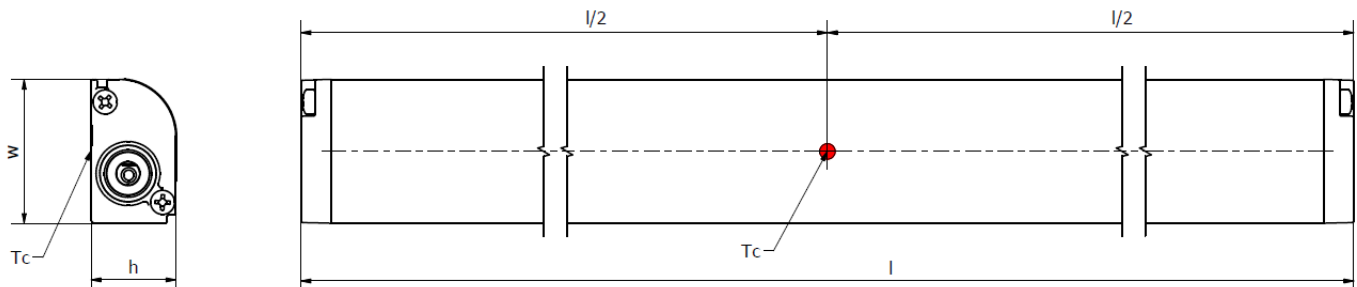
Parameter	Value	Unit
M70F50 nominal	100000	hours
M70F50 life	100000	hours

Mechanical characteristics

InteGrade engine HF 140mm 930 PW G4
InteGrade engine HF 140mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Length	136	140	144	mm
Width	19.3	19.7	20.1	mm
Height total	12.4	12.9	13.4	mm
Product mass		30		gram

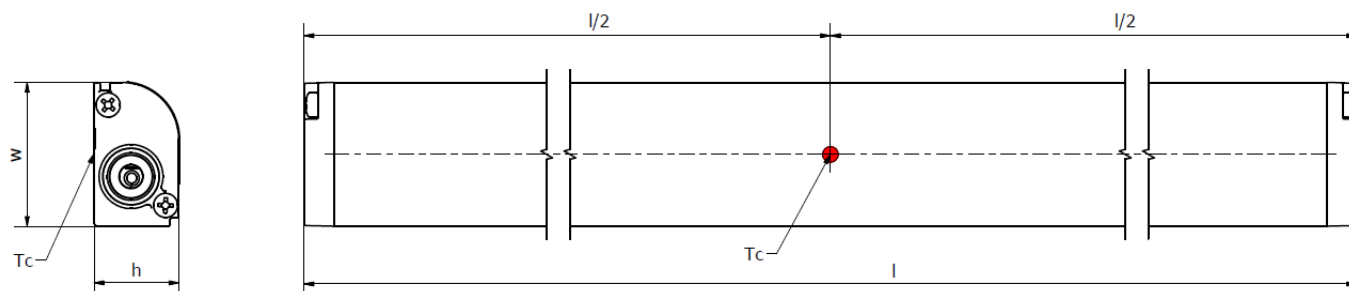
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine HF 575mm 930 PW G4
InteGrade engine HF 575mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Length	571	575	579	mm
Width	19.3	19.7	20.1	mm
Height total	12.4	12.9	13.4	mm
Product mass		120		gram

Thermal expansion from -30°C to +30°C is included in the tolerances

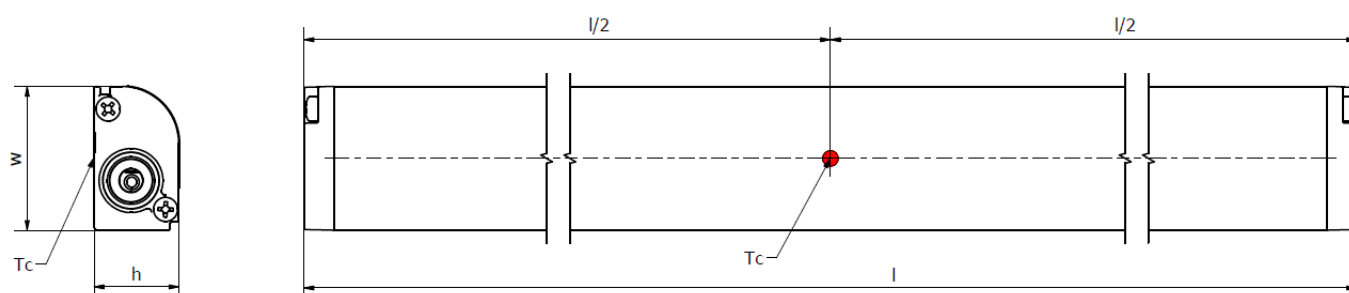


InteGrade engine HF 760mm 930 PW G4

InteGrade engine HF 760mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Length	756	760	764	mm
Width	19.3	19.7	20.1	mm
Height total	12.4	12.9	13.4	mm
Product mass		172		gram

Thermal expansion from -30°C to +30°C is included in the tolerances

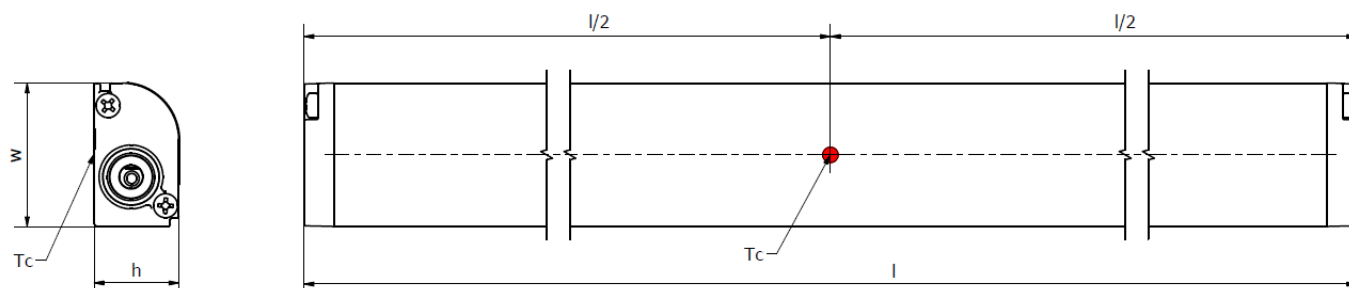


InteGrade engine HF 1570mm 930 PW G4

InteGrade engine HF 1570mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Length	1566	1570	1574	mm
Width	19.3	19.7	20.1	mm
Height total	12.4	12.9	13.4	mm
Product mass		340		gram

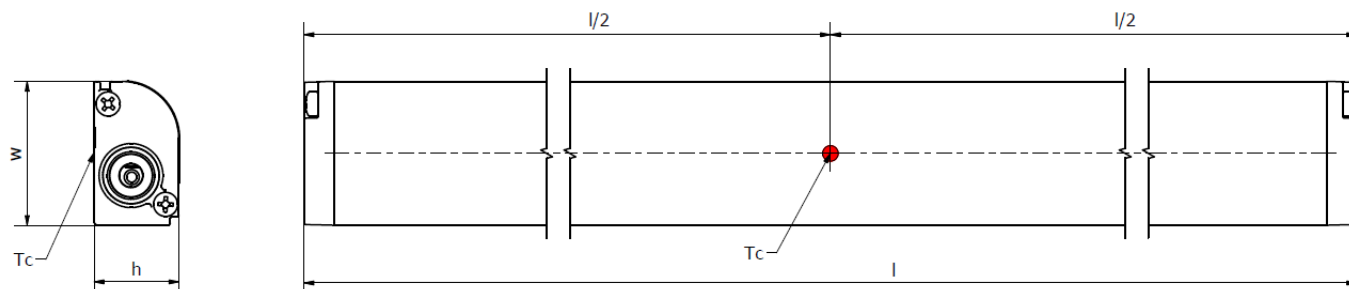
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine HF 1660mm 930 PW G4
 InteGrade engine HF 1660mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Length	1656	1660	1664	mm
Width	19.3	19.7	20.1	mm
Height total	12.4	12.9	13.4	mm
Product mass		360		gram

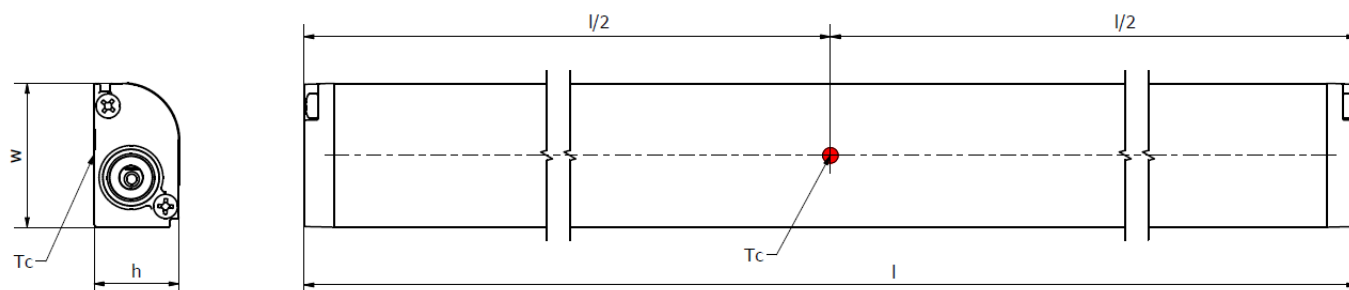
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine HF 1150mm 930 PW G4
 InteGrade engine HF 1150mm 940 PW G4

Parameter	Min	Typ	Max	Unit
Length	1146	1150	1154	mm
Width	19.3	19.7	20.1	mm
Height total	12.4	12.9	13.4	mm
Product mass		230		gram

Thermal expansion from -30°C to +30°C is included in the tolerances



Absolute ratings

Parameter	Min	Max	Unit
Case temperature (Tc-max)		70	°C
Ambient temperature	-30	50	°C

Application information

Certificates and Standards

IEC/EN 62031

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.250.0-08

UL 2108

NSF

Application

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

Do not use in highly polluted areas. Surface mounting only.



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13/09/2021