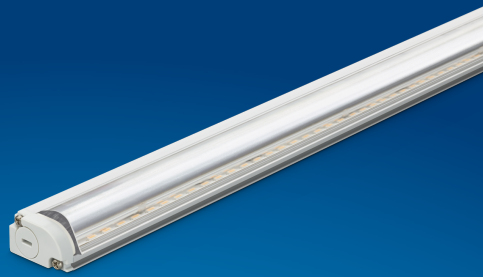


PHILIPS

InteGrade

LED

InteGrade engine NB
value G4



Datasheet

Key features and benefits

- Miniaturized slim design for aesthetic integration
- Premium color consistency up to 5SDCM over lifetime
- Natural merchandise color with specially formulated LEDs up to CRI95
- State of the Art LED diode delivering up to 180 lm/W
- Modules performing up to 136 lm/w meeting SLR (Single Lighting Regulation)
- Maximum design flexibility with extensive range of engine lengths
- Color temperatures (5600K & WWR)
- Breakthrough optical design for excellent uniformity and best merchandize presentation
- 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

January 2024



Ordering data

Commercial product name	EOC	12NC	Box quantity
InteGrade engine NB Va 140mm 956 G4	8718699 742249 00	9290 021 51206	24
InteGrade engine NB Va 140mm 965 G4	8719514 309203 00	9290 028 58906	24
InteGrade engine NB Va 140mm WWR G4	8718699 742201 00	9290 021 50906	24
InteGrade engine NB Va 575mm 956 G4	8718699 742263 00	9290 021 51306	24
InteGrade engine NB Va 575mm WWR G4	8718699 742225 00	9290 021 51006	24
InteGrade engine NB Va 760mm 956 G4	8719514 356191 00	9290 028 75306	24
InteGrade engine NB Va 855mm 956 G4	8719514 356214 00	9290 028 75406	24
InteGrade engine NB Va 1150mm 956 G4	8719514 356238 00	9290 028 75506	24
InteGrade engine NB Va 1150mm WWR G4	8718699 742287 00	9290 021 51506	24
InteGrade engine NB Va 1430mm 956 G4	8718699 743123 00	9290 021 51406	24
InteGrade engine NB Va 1430mm 965 G4	8719514 309227 00	9290 028 59006	24
InteGrade engine NB Va 1430mm WWR G4	8718699 743109 00	9290 021 51106	24
InteGrade engine NB Va 1570mm 956 G4	8719514 356252 00	9290 028 75606	12
InteGrade engine NB Va 1570mm WWR G4	8718699 743147 00	9290 021 51606	12
InteGrade engine NB Va 1660mm WWR G4	8718699 756918 00	9290 021 85406	12

Key Specifications at Nominal conditions

Name	12NC	Power (W)	Luminous Flux (lm)	Useful Flux (lm)	CRI
InteGrade engine NB Va 140mm 956 G4	9290 021 51206	0.92	120	110	90
InteGrade engine NB Va 140mm 965 G4	9290 028 58906	1.01	127	117	90
InteGrade engine NB Va 140mm WWR G4	9290 021 50906	1.17	126	116	
InteGrade engine NB Va 575mm 956 G4	9290 021 51306	3.52	478	440	90
InteGrade engine NB Va 575mm WWR G4	9290 021 51006	4.47	503	463	
InteGrade engine NB Va 760mm 956 G4	9290 028 75306	4.70	637	586	90
InteGrade engine NB Va 855mm 956 G4	9290 028 75406	5.36	719	661	90
InteGrade engine NB Va 1150mm 956 G4	9290 028 75506	7.04	956	880	90
InteGrade engine NB Va 1150mm WWR G4	9290 021 51506	8.94	1006	926	
InteGrade engine NB Va 1430mm 956 G4	9290 021 51406	8.88	1196	1100	90
InteGrade engine NB Va 1430mm 965 G4	9290 028 59006	9.76	1273	1171	90
InteGrade engine NB Va 1430mm WWR G4	9290 021 51106	11.3	1258	1157	
InteGrade engine NB Va 1570mm 956 G4	9290 028 75606	9.80	1317	1212	90
InteGrade engine NB Va 1570mm WWR G4	9290 021 51606	12.5	1385	1274	
InteGrade engine NB Va 1660mm WWR G4	9290 021 85406	13.1	1466	1349	

Module temperatures

Parameter	Nominal*	Life**	Max***	Unit
T _a (ambient temperature)	5	30	50	°C

* Nominal value at which typical performance is specified

** Value at which life time is specified

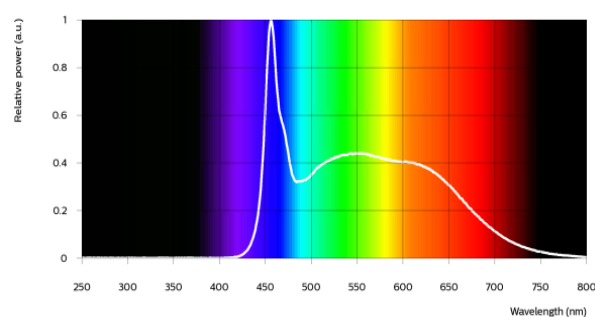
*** Maximum value for safe operation, do not operate above this value

Optical characteristics - table per color (CCT)

InteGrade engine NB Va 140mm 956 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	111	120	144	lm
Flux within 120° cone		110		lm
Efficacy		130		lm/W
Correlated color temperature (CCT)		5600		K
Color coordinates (CIEx, CIEy)		(0.333, 0.350)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		956/579		
Radiation angle		26		deg
Peak intensity		129		cd
Photobiological safety			RG1 unlimited	

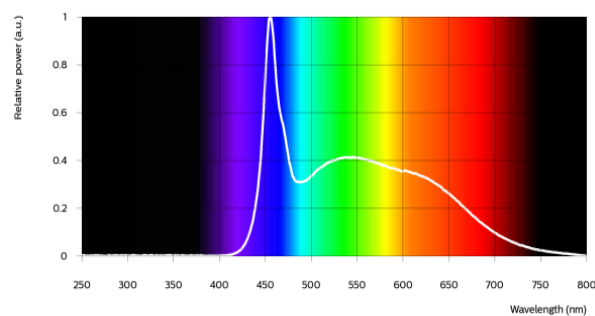
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine NB Va 140mm 965 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	118	127	153	lm
Flux within 120° cone		117		lm
Efficacy		126		lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.312, 0.328)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		965/579		
Radiation angle		26		deg
Peak intensity		137		cd
Photobiological safety			RG1 unlimited	

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



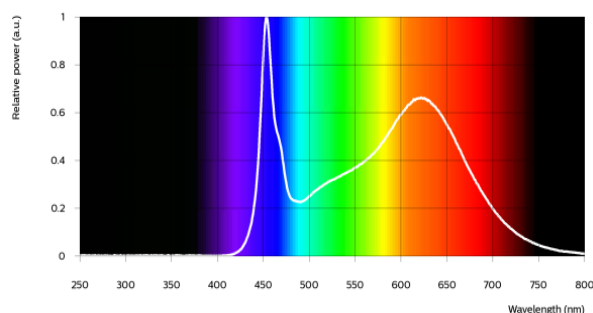
InteGrade engine NB Va 140mm WWR G4

Parameter	Min	Typ	Max	Unit
Luminous flux	117	126	151	lm
Flux within 120° cone		116		lm
Efficacy		108		lm/W
Color coordinates (CIEx, CIEy)		(0.384, 0.326)		-
Color consistency			3	SDCM
R9	-50			
Radiation angle		26		deg
Peak intensity		136		cd
Photobiological safety			RG1 unlimited	

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

Color rendering according to IES TM-30 is 90.

WWR products are special purpose products. They are not intended for in-house use.

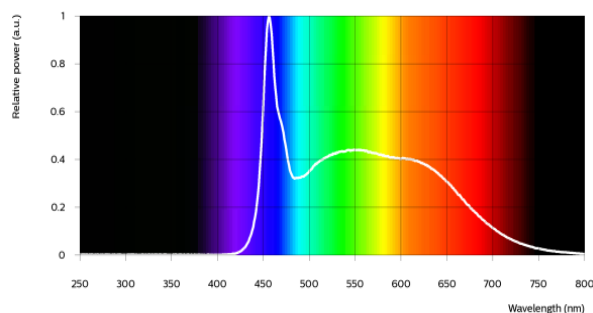


InteGrade engine NB Va 575mm 956 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	442	478	573	lm
Flux within 120° cone		440		lm
Efficacy		136		lm/W
Correlated color temperature (CCT)		5600		K
Color coordinates (CIEx, CIEy)		(0.333, 0.350)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		956/579		
Radiation angle		26		deg
Peak intensity		515		cd
Photobiological safety			RG1 unlimited	



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



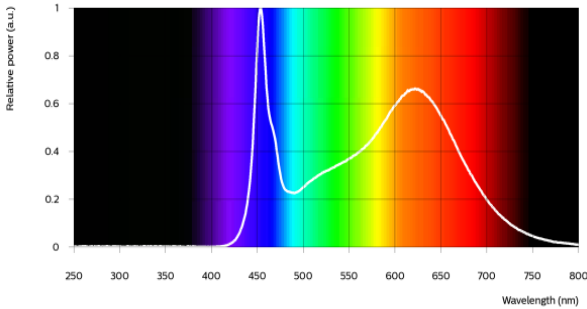
InteGrade engine NB Va 575mm WWR G4

Parameter	Min	Typ	Max	Unit
Luminous flux	465	503	604	lm
Flux within 120° cone		463		lm
Efficacy		113		lm/W
Color coordinates (CIEx, CIEy)		(0.384, 0.326)		-
Color consistency			3	SDCM
R9	-50			
Radiation angle		26		deg
Peak intensity		542		cd
Photobiological safety			RG1 unlimited	

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

Color rendering according to IES TM-30 is 90.

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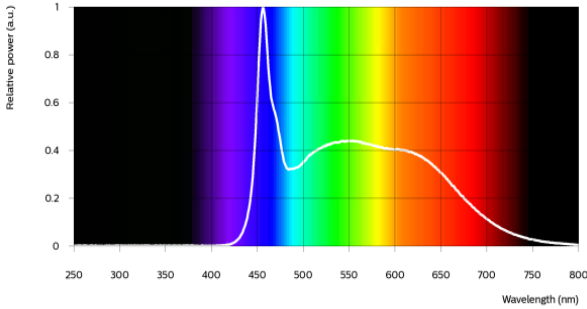


InteGrade engine NB Va 760mm 956 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	589	637	764	lm
Flux within 120° cone		586		lm
Efficacy		136		lm/W
Correlated color temperature (CCT)		5600		K
Color coordinates (CIEx, CIEy)		(0.333, 0.350)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		956/579		
Radiation angle		26		deg
Peak intensity		686		cd
Photobiological safety			RG1 unlimited	



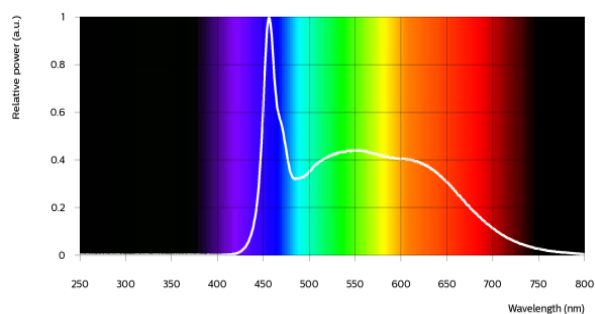
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine NB Va 855mm 956 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	665	719	862	lm
Flux within 120° cone		661		lm
Efficacy		134		lm/W
Correlated color temperature (CCT)		5600		K
Color coordinates (CIEx, CIEy)		(0.333, 0.350)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		956/579		
Radiation angle		26		deg
Peak intensity		773		cd
Photobiological safety			RG1 unlimited	

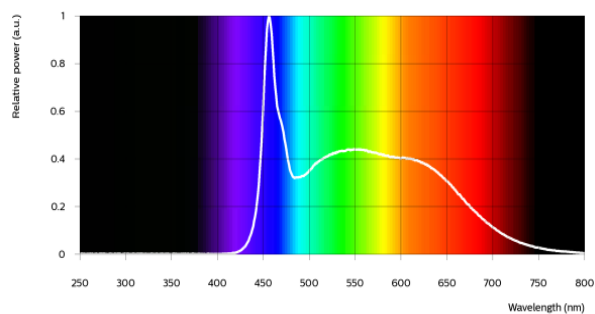
Measurement precision for flux +/- 5%, for efficacy +/- 6%., for x, y +/- 0.005, for CRI +/- 1.5



InteGrade engine NB Va 1150mm 956 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	884	956	1147	lm
Flux within 120° cone		880		lm
Efficacy		136		lm/W
Correlated color temperature (CCT)		5600		K
Color coordinates (CIEx, CIEy)		(0.333, 0.350)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		956/579		
Radiation angle		26		deg
Peak intensity		1030		cd
Photobiological safety			RG1 unlimited	

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



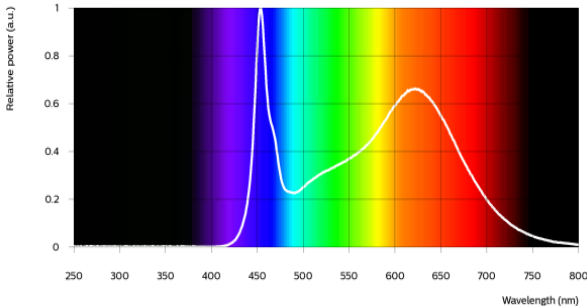
InteGrade engine NB Va 1150mm WWR G4

Parameter	Min	Typ	Max	Unit
Luminous flux	931	1006	1207	lm
Flux within 120° cone		926		lm
Efficacy		113		lm/W
Color coordinates (CIEx, CIEy)		(0.384, 0.326)		-
Color consistency			3	SDCM
R9	-50			
Radiation angle		26		deg
Peak intensity		1084		cd
Photobiological safety			RG1 unlimited	

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

Color rendering according to IES TM-30 is 90.

WWR products are special purpose products. They are not intended for in-house use.

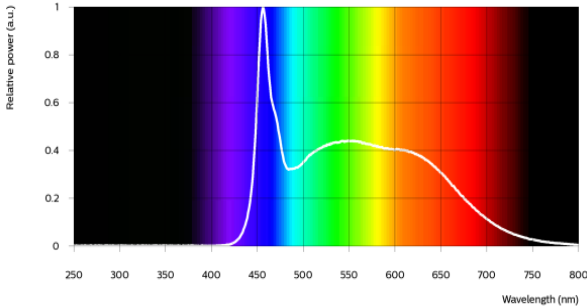


InteGrade engine NB Va 1430mm 956 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1107	1196	1436	lm
Flux within 120° cone		1100		lm
Efficacy		135		lm/W
Correlated color temperature (CCT)		5600		K
Color coordinates (CIEx, CIEy)		(0.333, 0.350)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		956/579		
Radiation angle		26		deg
Peak intensity		1288		cd
Photobiological safety			RG1 unlimited	



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

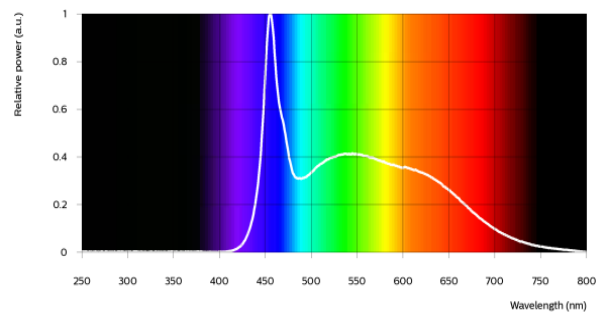


InteGrade engine NB Va 1430mm 965 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1178	1273	1528	lm
Flux within 120° cone		1171		lm
Efficacy		130		lm/W
Correlated color temperature (CCT)		6500		K
Color coordinates (CIEx, CIEy)		(0.312, 0.328)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		965/579		
Radiation angle		26		deg
Peak intensity		1371		cd
Photobiological safety			RG1 unlimited	



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



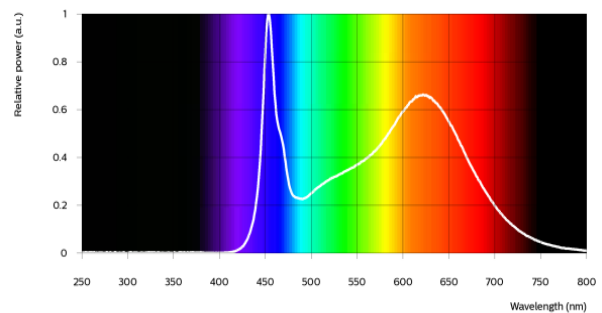
InteGrade engine NB Va 1430mm WWR G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1164	1258	1510	lm
Flux within 120° cone		1157		lm
Efficacy		112		lm/W
Color coordinates (CIEx, CIEy)		(0.384, 0.326)		-
Color consistency			3	SDCM
R9	-50			
Radiation angle		26		deg
Peak intensity		1355		cd
Photobiological safety			RG1 unlimited	

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

Color rendering according to IES TM-30 is 90.

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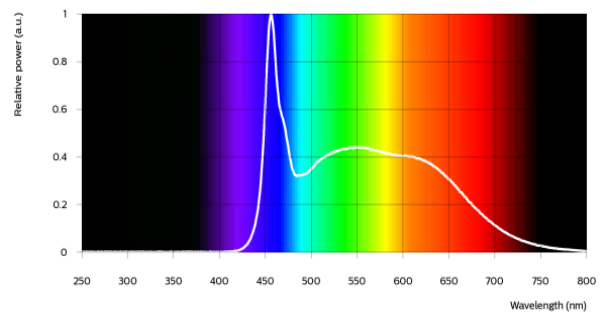


InteGrade engine NB Va 1570mm 956 G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1218	1317	1580	lm
Flux within 120° cone		1212		lm
Efficacy		134		lm/W
Correlated color temperature (CCT)		5600		K
Color coordinates (CIEx, CIEy)		(0.333, 0.350)		-
Color consistency			5	SDCM
CRI	90	92		
R9	55			
Photometric code		956/579		
Radiation angle		26		deg
Peak intensity		1418		cd
Photobiological safety			RG1 unlimited	



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



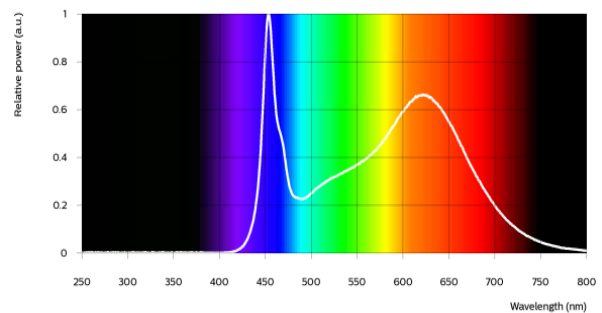
InteGrade engine NB Va 1570mm WWR G4

Parameter	Min	Typ	Max	Unit
Luminous flux	1281	1385	1661	lm
Flux within 120° cone		1274		lm
Efficacy		111		lm/W
Color coordinates (CIEx, CIEy)		(0.384, 0.326)		-
Color consistency			3	SDCM
R9	-50			
Radiation angle		26		deg
Peak intensity		1492		cd
Photobiological safety			RG1 unlimited	

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

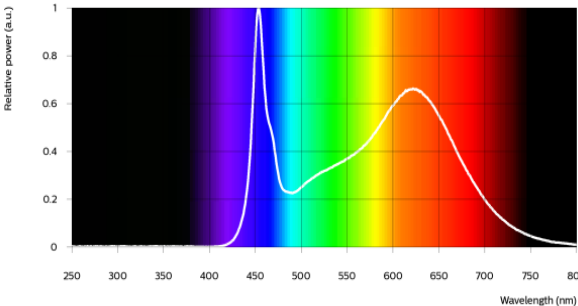
Color rendering according to IES TM-30 is 90.

WWR products are special purpose products. They are not intended for in-house use.



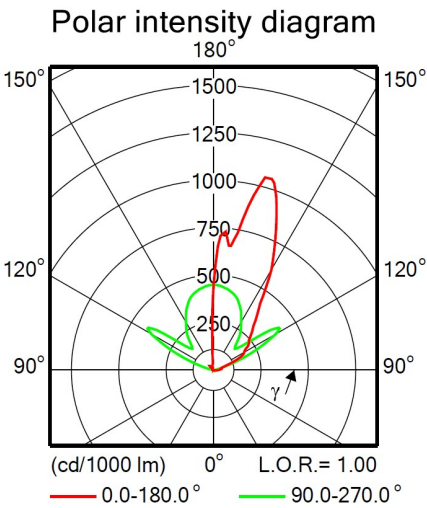
Parameter	Min	Typ	Max	Unit
Luminous flux	1356	1466	1759	lm
Flux within 120° cone		1349		lm
Efficacy		112		lm/W
Color coordinates (CIEx, CIEy)		(0.384, 0.326)		-
Color consistency			3	SDCM
R9	-50			
Radiation angle		26		deg
Peak intensity		1579		cd
Photobiological safety			RG1 unlimited	

Measurement precision for flux +/- 5%. Measurement precision for x, y +/- 0.005. Measurement precision for CRI 1.5.
 Color rendering according to IES TM-30 is 90.
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Beam shape

Light distribution, scaled to cd per 1000lm



Electrical characteristics

InteGrade engine NB Va 140mm 956 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		0.9		W = kWh/1000h
Number of modules per chain			40	

InteGrade engine NB Va 140mm 965 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		1.0		W = kWh/1000h
Number of modules per chain			40	

InteGrade engine NB Va 140mm WWR G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		1.2		W = kWh/1000h
Number of modules per chain			40	

InteGrade engine NB Va 575mm 956 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		3.5		W = kWh/1000h
Number of modules per chain			10	

InteGrade engine NB Va 575mm WWR G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		4.5		W = kWh/1000h
Number of modules per chain			10	

InteGrade engine NB Va 760mm 956 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		4.7		W = kWh/1000h
Number of modules per chain			7	

InteGrade engine NB Va 855mm 956 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		5.4		W = kWh/1000h
Number of modules per chain			6	

InteGrade engine NB Va 1150mm 956 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		7.0		W = kWh/1000h
Number of modules per chain			4	

InteGrade engine NB Va 1150mm WWR G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		8.9		W = kWh/1000h
Number of modules per chain			5	

InteGrade engine NB Va 1430mm 956 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		8.9		W = kWh/1000h
Number of modules per chain			4	

InteGrade engine NB Va 1430mm 965 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		9.8		W = kWh/1000h
Number of modules per chain			4	

InteGrade engine NB Va 1430mm WWR G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		11.3		W = kWh/1000h
Number of modules per chain			4	

InteGrade engine NB Va 1570mm 956 G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		9.8		W = kWh/1000h
Number of modules per chain			3	

InteGrade engine NB Va 1570mm WWR G4

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		12.5		W = kWh/1000h
Number of modules per chain			3	

Parameter	Min	Typ	Max	Unit
Forward voltage		24.0		V
Power consumption		13.1		W = kWh/1000h
Number of modules per chain			3	

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

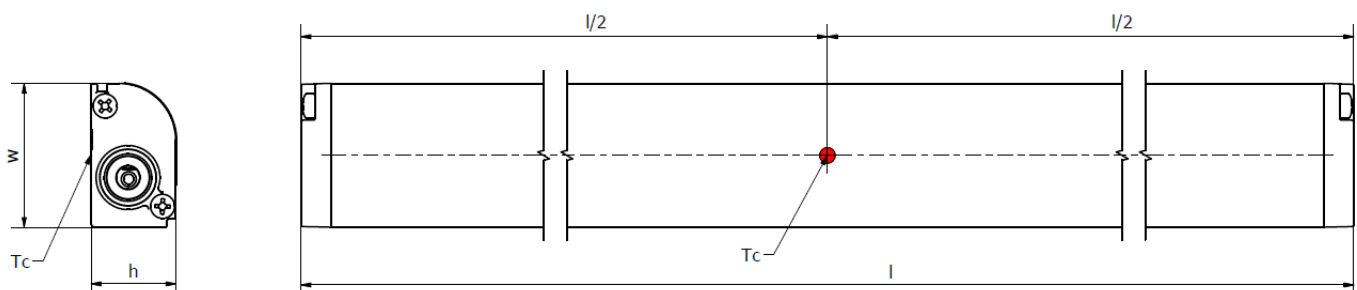
Parameter	Value	Unit
M70F50 nominal	100000	hours
M70F50 life	100000	hours

Mechanical characteristics

InteGrade engine NB Va 140mm 956 G4
InteGrade engine NB Va 140mm 965 G4
InteGrade engine NB Va 140mm WWR 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

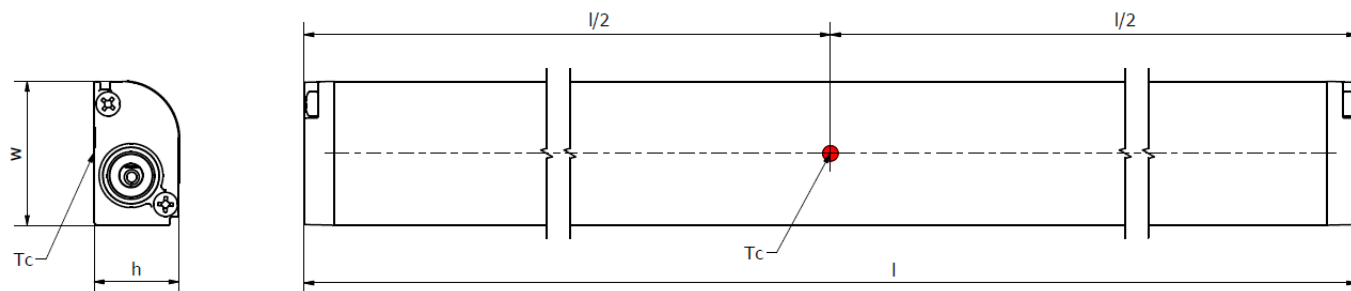
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine NB Va 575mm 956 G4
InteGrade engine NB Va 575mm WWR 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

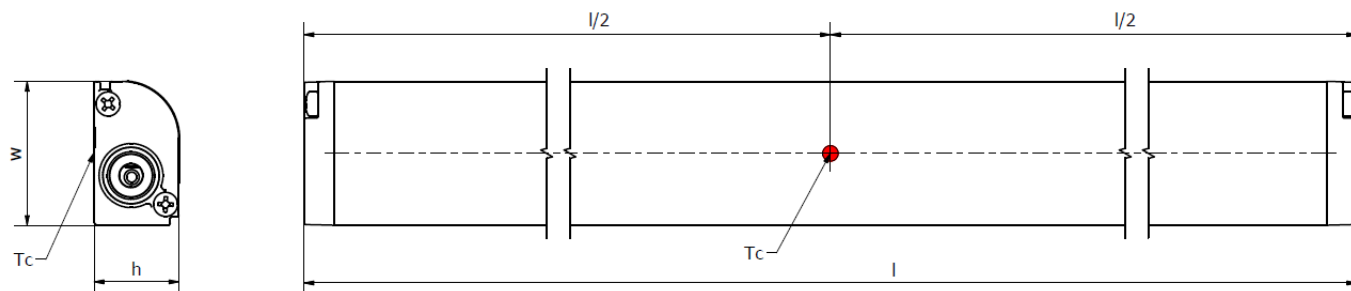
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine NB Va 1430mm 956 G4
InteGrade engine NB Va 1430mm 965 G4
InteGrade engine NB Va 1430mm WWR G4

Parameter	Min	Typ	Max	Unit
Length	1426	1430	1434	mm
Width	19.3	19.7	20.1	mm
Height total	12.4	12.9	13.4	mm
Product mass		310		gram

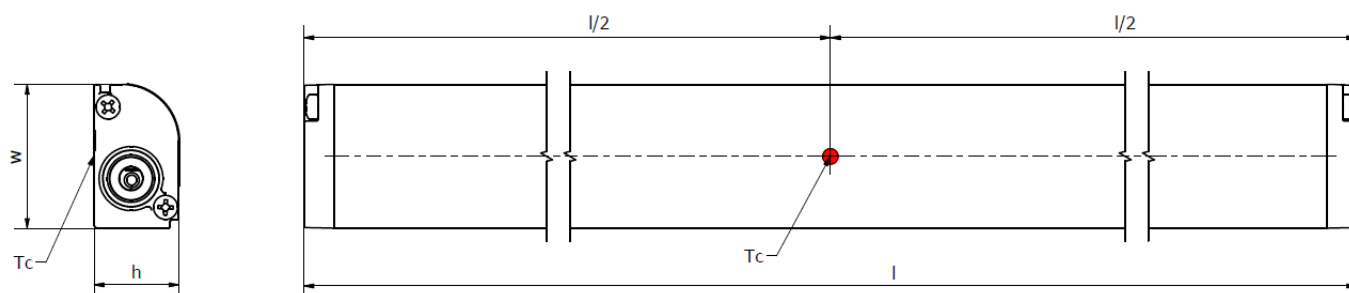
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine NB Va 1570mm 956 G4
InteGrade engine NB Va 1570mm WWR 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

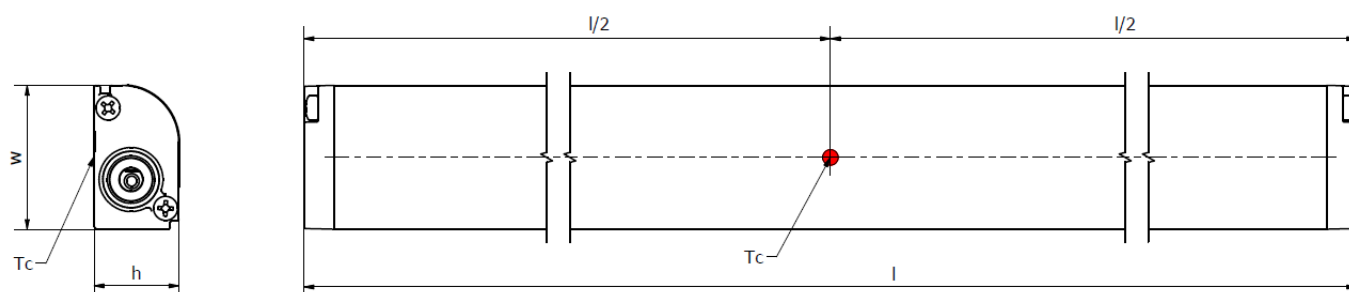
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine NB Va 1660mm WWR 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

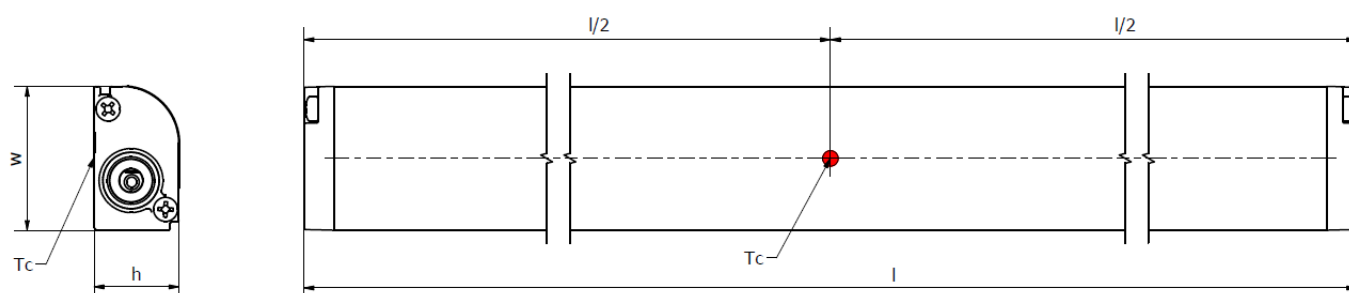
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine NB Va 760mm 956 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

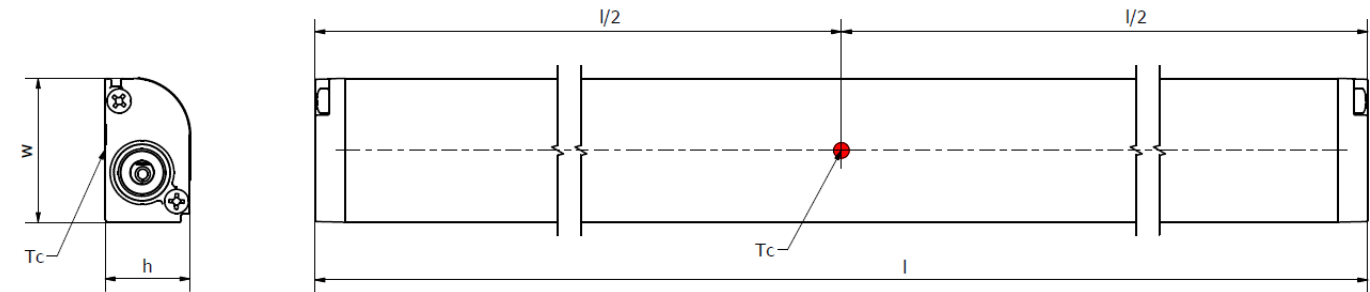
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine NB Va 855mm 956 G4

Parameter	Min	Typ	Max	Unit
Length	851	855	859	mm
Width	19.3	19.7	20.1	mm
Height total	12.4	12.9	13.4	mm
Product mass		180		gram

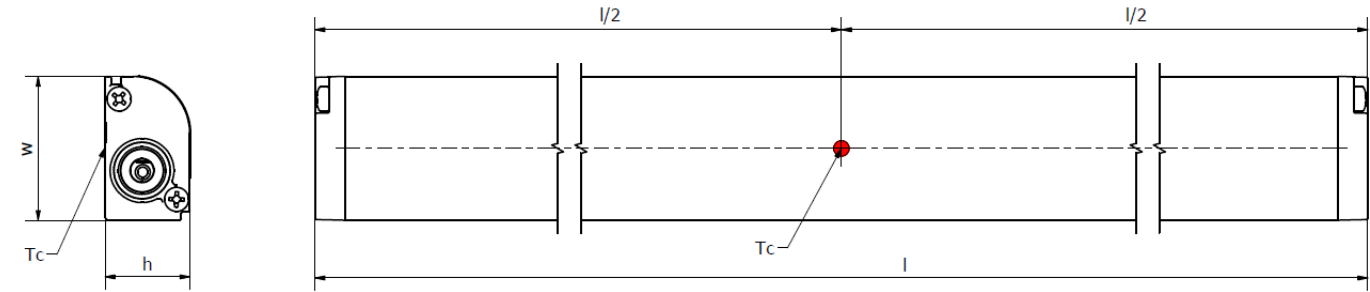
Thermal expansion from -30°C to +30°C is included in the tolerances



InteGrade engine NB Va 1150mm 956 G4
InteGrade engine NB Va 1150mm WWR 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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