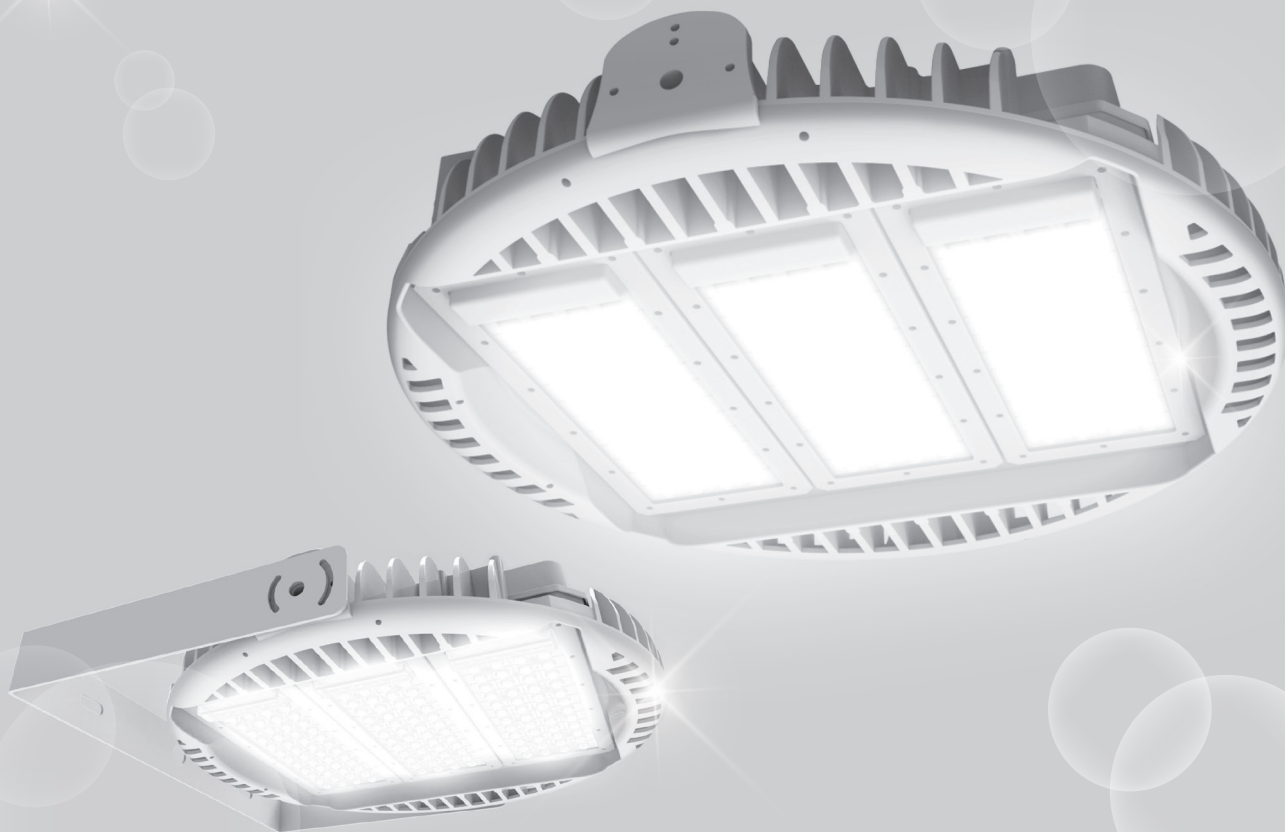




Staccato

Developed for challenging environment

Staccato is a range of robust, durable and high-quality industrial high-bay LED luminaires designed for resilience and a long lasting performance even in extreme conditions. Staccato is available in four different variations (Staccato standard, Staccato 75°C, Staccato 90° C, and Staccato Crane). It is designed with excellent efficiency to perform in variant ambient temperatures and applications.

Dimming and integration in Lighting control systems is possible through the 0-10V standard or DALI interfaces. Staccato LED luminaires realize the harmony between connectivity, reliability, robustness, and ease-of-installation.



Applications

Staccato is a functional LED high-bay luminaire that can directly replace HID and fluorescent fixtures of up to 400W. Its robust, compact design and IP66 rating offer great versatility in applications, including manufacturing halls, transportation sites and other industrial facilities.



Storage & Warehouse



Manufacturing Halls



Industrial



Transport

Features and Benefits

- Lens and glass version optics
- Wide range of lumen output from 17 600 to 48 000
- High Efficacy up to 165 lm/W (4000K)
- Long life-time >100 000h L80/ B10 at Ta=25°C
- Various optics: 100°, 60°, 65°x100°, 25°, 110°, 115°x 105°
- Operating in high ambient temperature up to 65°C for standard version and up to 90°C for the glass version
- 0-10V driver (standard) and DALI driver (optional)
- Smart alignment for consistent array-installation
- Optional tempered glass protection for applications where regular cleaning is required
- Convenient installation with options for suspension and wall mounting

Standards and directives

Ingress Protection (IP) rating	IP66 (IP65 for glass version)
Impact Resistance (IK) rating	IK10 (IK07 for glass version)
Surge Protection (kV)	10kV
Electrical safety classification	Class I
Low Voltage Directive (LVD)	2014/35/EU
CE Marking	#N8A 16 07 27738 601 #E8A 16 07 27738 606
Electromagnetic Compatibility Directive (EMC)	2014/30/EU
WEEE Directive	2012/19/EU
RoHS Directive	2011/65/EU
Compliance with standards	EN 60598-2-1:1989 EN 60598-1:2015 EN 62471:2008 EN 62493:2015 EN 62031:2008 EN55015:2013/A1:2015 EN61547:2009 EN61000-3-2:2014 EN61000-3-3:2013
European energy efficiency directives EELP, EPB, EuP	N/A
Quality and safety marks	CE (TUV) ENEC (TUV) (except 260W) UL
Flammability test (glow wire)	650°C
Other tests and certifications	IP test (EN 60598; refer to EN 60529) Salt mist test (ASTM -B117, CNS8886) IK10 test (EN 60068-2-75)
Warranty	5 (+5) years (project specific)

Staccato (lens version)



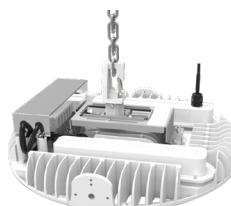
Staccato (glass version)



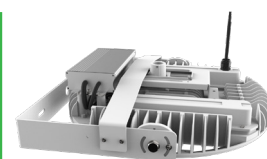
Installation and options

Mounting options	Hook (included) Safety Cable (included) U-Bracket (wall mounting option) Y-Cable (suspension option)
Electrical installation	Junction Box (optional)
Entries	Power cable wire (cord): 3m; 90°C
Control	1-10V (Standard) DALI (optional)
Sensors	Occupancy sensor with step- dimming function (standard version)

Hook



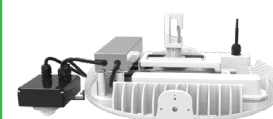
U-bracket



Y-cable



Occupancy sensor



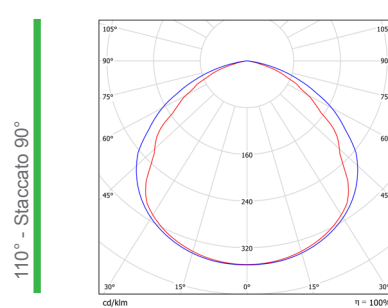
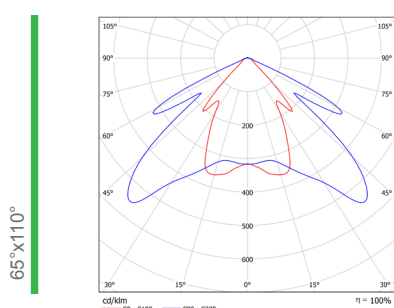
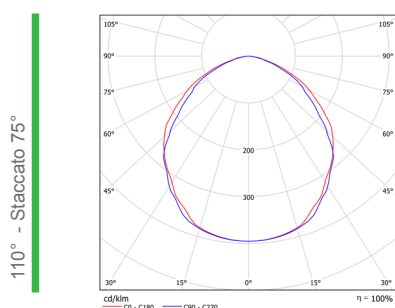
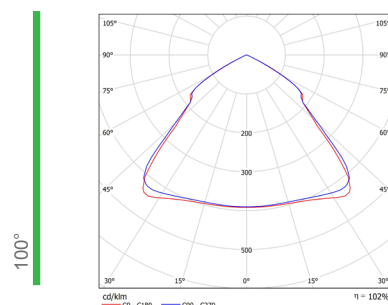
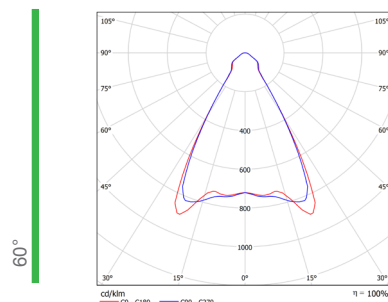
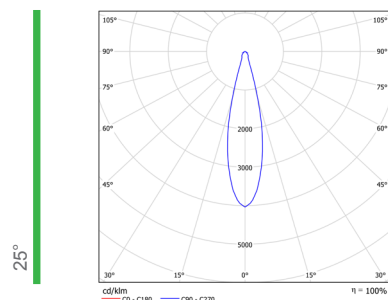
Technical specifications

Power ranges (W)	90 - 310W
Input Voltage (V)	220 - 240
Lumen output range (lm)	17 600 - 48 000 lm
Efficacy (lm/W)	127 - 165 lm/W
Power Factor	≥ 0.95
THD (total harmonic distortion)	<20%
Electromagnetic Compatibility (EMC)	EN61000-3-2
Driver efficiency and mounting	>90% (lens version) >0.9 (glass version) External
Color Rendering Index (CRI)	> 80 >70 (90°C)
Correlated Color Temperature (CCT)	4000K / 5000K
UGR	<19-28
Color tolerance MacAdam	<3 SDCM
Operating temperature °C	-40 to +65°C -40 to +75°C -40 to +90°C
Service lifetime	Staccato 65°C: L80/B10 >100 000h at Ta=25°C >55 000h at Ta max Staccato 75°C: L80/B10 >60 000h at Ta=25°C >50 000h at Ta max Staccato 90°C: L80/B10 >100 000h at Ta=25°C >60 000h at Ta max

Optical characteristics

Beam angle(s)	100°/60°/65°x100°/25° (lens version) 110° (glass version)
Light distribution	Direct wide, medium and aisle

Light distribution graphics



Accessories

Hook (aluminum)



Y-cable (steel)



U-cable (steel)



Junction box (ABS)



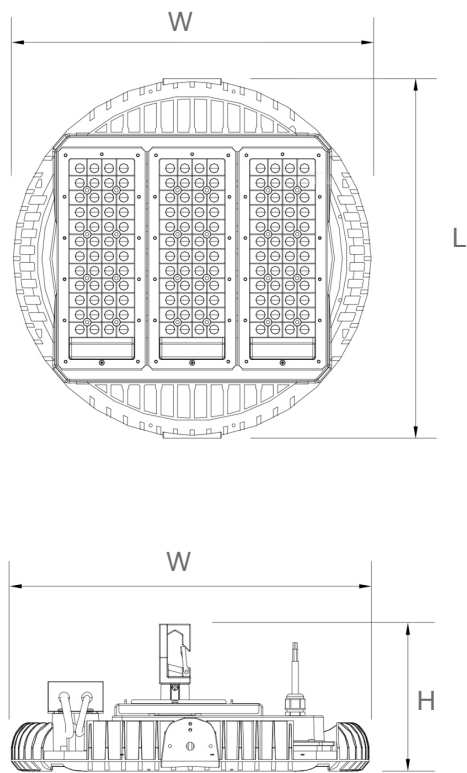
Physical properties

Dimensions (L x W x H mm)	442 x 440 x 181 mm (lens version) 440 x440 x 181 mm (glass versioin)
Net weight (kg)	9kg (glass version) 10kg (glass version)
Gross weight (kg)	11kg (lens version) 12kg (lens version)

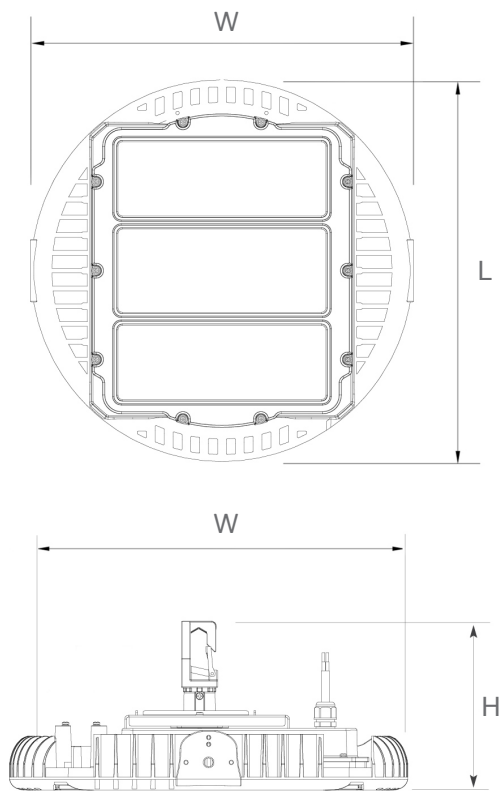
Materials, colors and variations

Materials (housing)	Die casting aluminium
Materials (optics)	Lens: Polycarbonate (PC) with UL F1 rating Glass: Tempered glass
Materials seal	Silicone rubber
Surface finish and color	White color anti-corrosion paint coating RAL9003
Other finishes and colors available	Customization is possible depending on quantity

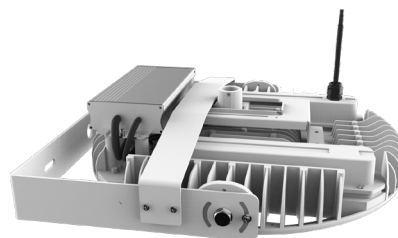
Product dimensions - Lenz version



Product dimensions - Glass version



Technical Specifications Staccato

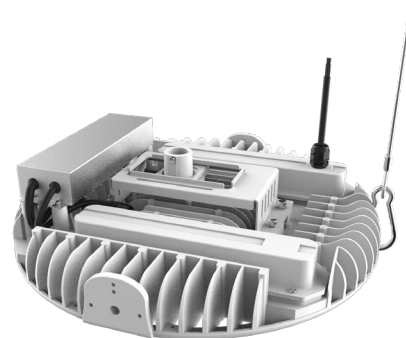


	HBEC4xx1E	HBEBF4xx1E	HBEBK4xx1E	HBEBR4xx1E	HBEBW4xx0E
Lumen Output (lm)	13 700	24 700	30 800	40 700	48 000
Power (W)	125	150	200	260	310
Efficacy (lm/W)	150	165	154	157	155
CRI	>80				
CCT	4000K (Other CCT Available: 5000K)				
Operating Temperature	-40 to +60°C				
Lifetime	L80B10>100 000h at Ta=25 °C; > 55 000h at Ta=Max				
Input Voltage	220-240V				
Beam Angle	100°/ 60°/ 65°x 100°				100° / 60°
UGR	<25	<25	<25	<27	<28
Ingress Protection	IP66				
Impact Resistance	IK10				
Power Factor	>0.95				
Electrical Safety Class	Class I				
Total Harmonic Distortion (THD)	<20%				
Color Tolerance (MacAdam)	3 SDCM				
Weight (kg)	9				
Product Dimension (DxH) (mm)	442 x 181				
Control Interface	DALI / 0-10V				

*The given lumen output and efficacy values are given for CCT 4000K (100° beam angle)

*Thermal foldback feature reduces lumen output for temperatures above Ta Max

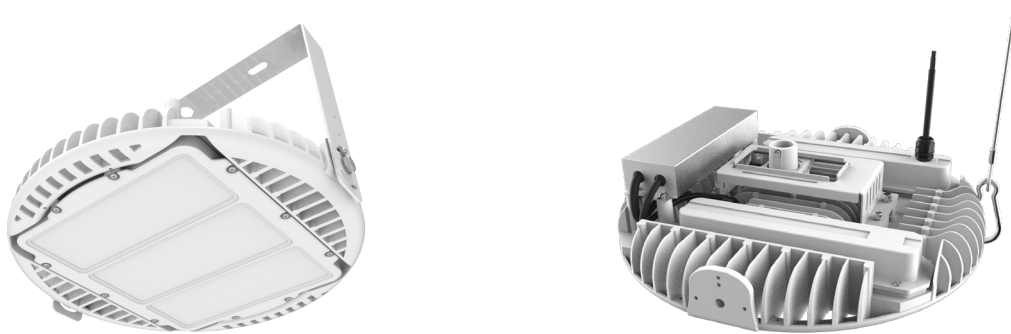
Technical Specifications Staccato Crane



	HBKBE460DE	HBKBE425DE
Lumen Output (lm)	18 900	19 000
Power (W)	135	150
Efficiency (lm/W)	140	127
CRI	>80	
CCT	4000K (Also available in 5000K)	
Operating Temperature	- 40 to +55°C	
Lifetime	L80/B10 >100 000h at Ta=25°; >70 000h at Ta=max	L80/B10 >80 000h at Ta=25°; >45 000h at Ta=max
Input Voltage	220 - 420V	
Beam Angle	60°	25°
UGR	<25	<19
Ingress Protection	IP66	
Impact Resistance	IK10	
Power Factor	>0.9	
Electrical Safety Class	Class I	
Total Harmonic Distortion (THD)	<20%	
Color Tolerance (MacAdam)	3 SDCM	
Weight (kg)	9	
Product Dimension (DxH)	442 x 181	
Control Interface	DALI / 10-0V	

*The given lumen output and efficacy values are given for CCT 4000K

Technical Specifications Staccato 75 °C



	HBEBD4G11E	HBEBF4G11E	HBEBK4G11E
Lumen Output (lm)	17 600	21 200	26 900
Power (W)	130	150	200
Efficacy (lm/W)	135	141	135
CRI	>80		
CCT	4000K (Also available in 5000K)		
Operating Temperature	- 40 to +75 °C		
Lifetime	L80B10> 60 000h at Ta=55°C ;>50 000h at Ta=Max		
Input Voltage	220-240V		
Beam Angle	110° / Tempered-Glass		
UGR	<25	<28	<28
Ingress Protection	IP65		
Impact Resistance	IK07		
Power Factor	>0.9		
Electrical Safety Class	Class I		
Total Harmonic Distortion (THD)	<20%		
Color Tolerance (MacAdam)	3 SDCM		
Weight (kg)	10		
Product Dimension (DxH) (mm)	440 x 181		
Control Interface	DALI / 0-10V		

*The given lumen output and efficacy values are given for CCT 4000K

Technical Specifications Staccato 90°C



	HBEB4G1NE-T	HBEBF4G1NE-T	HBEBK4G1NE-T	HBEBR4G1NE-T
Lumen Output (lm)	20 000	23 000	29 000	36 000
Power (W)	125	150	200	260
Efficacy (lm/W)	160	153	145	138
CRI	>70			
CCT	4000K (Also available in 5000K with same lumen output)			
Operating Temperature	-20 to +90°C			
Lifetime	L80B10> 000h 100 at Ta=25°C ; > 60 000h at Ta=Max			
Input Voltage	240-220V			
Beam Angle	115° x 105°			
UGR	<28	<28	<28	<28
Ingress Protection	IP65			
Impact Resistance	IK07			
Power Factor	≥0.9			
Electrical Safety Class	IP66			
Total Harmonic Distortion (THD)	<20%			
Color Tolerance (MacAdam)	3 SDCM			
Weight (kg)	10			
Product Dimension (DxH)	440 x 181			
Control Interface	DALI /0-10V			

*Double over temperature protection (OTP) design for luminaire and driver; Irreversible thermal label for warranty

*Remote driver installation



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