



Base-hinged raising and lowering masts

Abacus base-hinged masts do exactly what they say on the tin: raise and lower from ground level up to a height of 50 metres. There are eight models to choose from – mainly used to mount floodlights, CCTV cameras, wind turbines and compact communication devices.

Since the first model was introduced over 50 years ago, Abacus base-hinged masts have become some of our most popular products worldwide. Robust, simple to install and easily accessible, they're incredibly cost-effective – especially since they require minimal ongoing maintenance.

The unique operating system – the first and still best of its kind on the market – is as safe as it is simple, with its gravity lock and quick-lowering mechanism.

Why base-hinged?

- Quick and simple to assemble and install – up to three times faster than fixed or winch-lowering models
- Safe – no climbing, as all maintenance and floodlight adjustments can be done at ground level
- Virtually maintenance free – thanks to straightforward design and robust engineering
- Attractive – with no ladder or platform to interrupt the mast's clean, modern lines
- Versatile – with eight models, all designed for different load weights
- Particularly suitable for high-wind or hurricane-prone zones, as masts can be lowered in advance of storms

Specification

All masts are designed to the British High Mast standard, Institution of Lighting Engineers' Technical Report No. 7. All models are hot-dip galvanised to ISO EN 1461. Base-hinged raising and lowering masts with gravity locks are installed and operated using an independent hydraulic cylinder counterbalance unit.

Technical data

Mast ref	Mounting height (m)	Column weight (kg)	Weight of heaviest part (kg)	Max O.T.M kNm		Horiz.shear at ground level (kN)	Foundation bolts	Integral gear compartment	Foundation reference*
				raised	lowered				
HL250	12	398		45	29	6	4 No. M30 x 800mm	100 x 190 x 410	50M150/50P150
	15	432	253	45	29	5	Grade 4.6 on 400x400crs	100 x 170 x 650	50M150/50P150
HL330	15	750		121	82	11		170 x 270 x 350	150M150/150P150
	18	797	370	120	82	10	4 No. M30 x 1220mm	170 x 250 x 656	150M150/150P150
	20	812		120	82	10	Grade 8.8 on 460x460crs	One off	150M150/150P150
GL400	15	1019		147	123	12			150M150/150P150
	18	1151		159	133	11			200M150/200R150
	20	1194	691	161	132	11	8 No. M30 x 1220mm	2902 x 310 x 610	200M150/200R150
	25	1278		153	133	9	Grade 8.8 on 620PCD**	Two off	200M150/200P150
GL520	20	1929		278	258	18			300R150/300M150
	25	2124		297	267	16			300R150/300M150
	30	2267	1210	298	277	15	8 No. M36 x 1200mm	406 x 426 x 610	300R150/300M150
	35	2330		226	265	13	Grade 8.8 on 700PCD**	Two off	300R150/300M150
GL620	20	3174		711	521	41			750R150
	25	3450		673	528	33			750R150
	30	3618	1848	565	518	26	16 No. M36 x 1350mm	490 x 510 x 800	750R150
	35	3731		491	512	23	Grade 8.8 on 200crs	550 x 570 x 630	750R150
	40	3865		470	527	21	(800 x 800 overall)	One off	750R150
GL720	25	4687		720	639	37			750R150
	30	5203		703	730	33			750R150
	35	5497	3365	737	760	32	20 No. M36 x 1350mm	590 x 610 x 1000	1000R150
	40	5840		759	838	31	Grade 8.8 on 180crs	650 x 670 x 630	1000R150
	45	6586		820	867	31	(900 x 900 overall)	One off	1000R150
GL800	30	7196		912	898	43			1000R150
	35	7610		987	957	42			1000R150
	40	8514	4966	989	1148	40	20 No. M36 x 1350mm	970 x 690 x 1000	1250R150
	45	8893		989	1145	39	Grade 8.8 on 180crs	730 x 750 x 630	1250R150
	50	9510		989	1327	37	(900 x 900 overall)	One off	1500R150
GL1000	30	10600		2220	2110	116	20 No. M42 x 1700mm	950 x 950 x 600	3000R150
	35	11200		2840	2090	126	Grade 8.8 @ 240crs	850 x 850 x 1000	3000R150
	40	11600	6410	2650	2070	109	(1200 x 1200 overall)		3000R150
	45	11800		2240	2070	90			3000R150
	50	12050		1790	2060	74			3000R150

*Note: this reference is based strictly on a good ground pressure of at least 150kN/m²

**PCD = Pitch Circle Diameter



Fast and simple

Masts are assembled and installed at ground level using low-capacity equipment.



Safety first

Safe and simple maintenance at ground level. No climbing, no high level platform with difficult access.



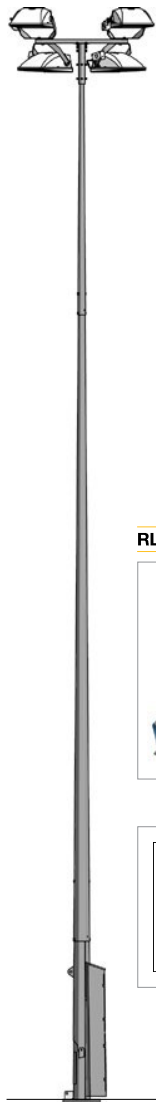
Versatile and robust

Up to 50m high and built to last, with low-cost maintenance.

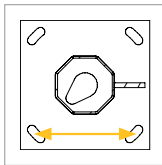


Mid range base-hinged

Grand range base-hinged



RLH5

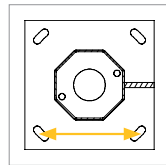


400mm

HL250



RLH11

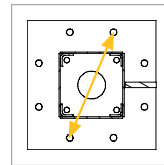


460mm

HL330



RLH12

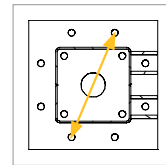


620mm
Pitch Circle Diameter

GL400



RLH13



700mm
Pitch Circle Diameter

GL520

Product code	Height (m)	Max head-load (kg)	Headload capacity (m ²)*
HL250	10	175	2.539
	12	150	1.504
	15	100	0.718
Lid/base section: control gear and protection equipment capacity			
1kW/2kW	Cabinet only		

Foundation assembly

Bolts and base template	FA003G
Top template	FC023
Counterbalance	RLH5

Product code	Height (m)	Max head-load (kg)	Headload capacity (m ²)*
HL330	15	350	2.168
	18	245	1.875
	20	200	1.387
Lid/base section: control gear and protection equipment capacity			
1kW/2kW	Cabinet only		

Foundation assembly

Bolts and base template	FA/HL330
Top template	FC/HL330
Counterbalance	RLH11

Product code	Height (m)	Max head-load (kg)	Headload capacity (m ²)*
GL400	15	550	3.516
	18	420	2.773
	20	330	2.480
	25	195	1.309
Lid/base section: control gear and protection equipment capacity			
1kW/2kW	x6		

Foundation assembly

Bolts and base template	FA006AG
Top template	FC026
Counterbalance	RLH12

Product code***	Height (m)	Max head-load (kg)	Headload capacity (m ²)*
GL520	20	715	5.547
	25	425	3.750
	30	280	2.422
	35	175	0.918
Lid/base section: control gear and protection equipment capacity			
1kW/2kW	x6		

Foundation assembly

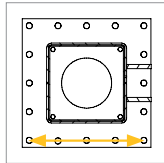
Bolts and base template	FA007G
Top template	FC027
Counterbalance	RLH13

* Headload capacity at wind speed of 45m/s. ** Assumes a Challenger® 3 type floodlight, 16kg and 0.20m² wind area.

*** Refer to the bracket specification on your quotation for actual mast height requirement; mast may be shorter to accommodate height of the bracket, maintaining floodlight's central mounting height.



RLH14/RLT

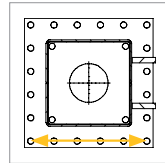


800mm

GL620



RLH15

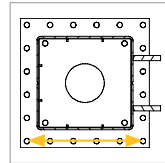


900mm

GL720



RLH16



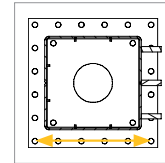
900mm

GL800



RLH17

Manufactured to order



1200mm

GL1000

Product code***	Height (m)	Max head-load (kg)	Headload capacity (m ²)*
GL620	20	1640	17.891
	25	950	11.875
	30	580	5.078
	35	350	3.281
	40	210	1.914

Lid/base section: control gear and protection equipment capacity
1kW/2kW x8

Foundation assembly

Bolts and base template	FA008CG
Top template	FC028
Counterbalance	RLH14/RLT

Product code***	Height (m)	Max head-load (kg)	Headload capacity (m ²)*
GL720	25	1450	12.188
	30	1150	7.969
	35	790	6.094
	40	610	4.688
	45	285	4.258

Lid/base section: control gear and protection equipment capacity
1kW/2kW x4

Foundation assembly

Bolts and base template	FA/GL720
Top template	FC/GL720
Counterbalance	RLH15

Product code***	Height (m)	Max head-load (kg)	Headload capacity (m ²)*
GL800	30	1550	10.391
	35	1100	8.281
	40	950	7.070
	45	500	5.781
	50	500	4.492

Lid/base section: control gear and protection equipment capacity
1kW/2kW x4

Foundation assembly

Bolts and base template	FA800G
Top template	FC800
Counterbalance	RLH16

Product code***	Height (m)	Max head-load (kg)	Headload capacity (m ²)*
GL1000	30	3081	37.344
	35	2700	28.594
	40	1960	20.781
	45	1470	13.672
	50	1150	8.203

Lid/base section: control gear and protection equipment capacity
1kW/2kW x4

Foundation assembly

Bolts and base template	FA/GL1000
Top template	FC/GL1000
Counterbalance	RLH17

* Headload capacity at wind speed of 45m/s. ** Assumes a Challenger® 3 type floodlight, 16kg and 0.20m² wind area.

*** Refer to the bracket specification on your quotation for actual mast height requirement; mast may be shorter to accommodate height of the bracket, maintaining floodlight's central mounting height.

Mid range (10-20m) masts and accessories

Our two mid range masts – otherwise known as the HL250 and HL330 – are made with octagonal shafts and a gravity-lock mechanism, ensuring the mast is securely positioned before it's lowered to ground level for maintenance. Cable glands mounted in the base also ensure a secure, watertight fit.

The SB range of brackets can be used with both models, plus the spigot bracket supplied with each mast is suitable for a wide variety of floodlight configurations. See p26-27 for the full range of brackets available.



HL250 base-hinged masts: 10m to 15m

There are two options for delivery and installation of the HL250 product range:

Easy-fit on site

- Mast base is factory-fitted, with a steel cabinet pre-wired and fitted to the mast. This comes complete with control gear and protection equipment (as needed for your individual project)
- Fast on-site assembly and installation
- Abacus seal of quality

Standard supply

- Mast and cabinet are supplied empty for your contractor to fit on-site

HL250 product range

Product codes	Mast height (m)	Sets of gears	1kW or 2kW	Switching	RCD socket	Abacus install
HL250 masts factory fitted with electrical equipment						
HL250D1522XRA	15	2	2		●	●
HL250D1522SRA	15	2	2	●	●	●
HL250D1522XRC	15	2	2		●	Client
HL250D1522SRC	15	2	2	●	●	Client
HL250D1532XRA	15	3	2		●	●
HL250D1532SRA	15	3	2	●	●	●
HL250D1532XRC	15	3	2		●	Client
HL250D1532SRC	15	3	2	●	●	Client
HL250D1542XRA	15	4	2		●	●
HL250D1542SRA	15	4	2	●	●	●
HL250D1542XRC	15	4	2		●	Client
HL250D1542SRC	15	4	2	●	●	Client
(For 12m, HL250S12, 10m HL250S10)	12	-	-	-	-	-
HL250 range for client to fit out						
HL250S10	10	-	-	-	-	-
HL250S12	12	-	-	-	-	-
HL250D15	15	-	-	-	-	-
HL250BOX/SUPPLY	Gear cabinet	-	-	-	-	-
Foundation assembly						
FA003G	Bolts and base template					
FC023	Top template					

HL330 base-hinged masts: 15m to 20m

Carrying up to eight Challenger® 1 2kW floodlights at 20m, the HL330 has the high-performance capability needed for medium to large projects.

As with the HL250, the HL330 product range can be delivered and installed in two ways:

Easy-fit on site

- The cabinet is delivered pre-wired and fitted with control gear and protection equipment, only the main power cable has to be connected into the mast
- Cabinet is mounted onto the mast's flange plate on site
- Allows fast on-site assembly and installation

Standard supply

- Mast and cabinet are supplied empty for your contractor to fit on-site



HL330 product range

Product codes	Mast height (m)	Sets of gears	1kW or 2kW	Switching	RCD socket	Abacus install
HL330 mast range						
HL33015	15	-	-	-	-	-
HL33017.3	18	-	-	-	-	-
HL33018	18	-	-	-	-	-
HL33019.3	20	-	-	-	-	-
HL33020	20	-	-	-	-	-
HL/330/BOX	Gear cabinet max. 4 gears	-	-	-	-	-
HL/330/BOX/A998	Gear cabinet to 10 gears	-	-	-	-	-
HL330 factory fitted control gear cabinets						
330BOX42	-	4	2			●/Client
330BOX43	-	2	2	●	●	●
330BOX52	-	4	2			●/Client
330BOX53	-	2	2	●	●	●
330BOX62	-	4	2			●/Client
330BOX63	-	2	2	●	●	●
330BOX72	-	4	2			●/Client
330BOX73	-	2	2	●	●	●
330BOX82	-	4	2			●/Client
330BOX83	-	2	2	●	●	●
330BOX92	-	4	2			●/Client
330BOX93	-	2	2	●	●	●
Foundation assembly						
FA/HL330	Bolts and base template					
FC/HL330	Top template					

Brackets for base-hinged masts

The SB bracket range is compatible with all base-hinged masts. Brackets incorporate a standard flange, enabling them to be fixed to the matching flange supplied with the mast.

The masts can also be fitted with an additional clamp-on bracket for lower-height floodlights (requiring

on-site drilling to feed through additional cabling).

The brackets also feature an M20 bolt with an anti-rotation 'cup', which prevents the stirrup from moving.

In addition to the standard brackets shown, we can also design and supply bespoke brackets if required.

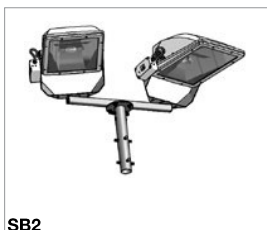
There are two categories of brackets – sports and area lighting. Both types are fitted with Abacus anti-rotation floodlight cups.

The brackets are supplied in easy-to-assemble kits, requiring the minimum equipment to put together.

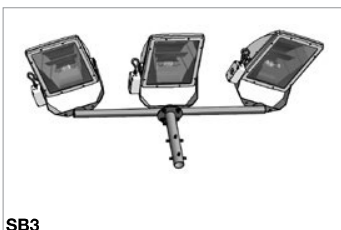
SB bracket range



SB1	
Weight (kg)	2.6
Effective area (m ²)	0.011



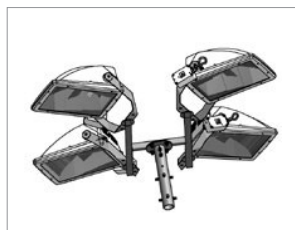
SB2	
Weight (kg)	6.5
Effective area (m ²)	0.095



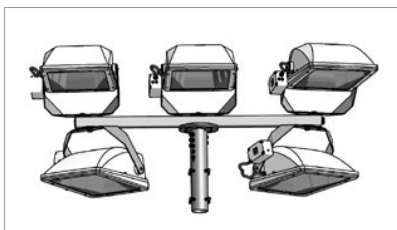
SB3	
Weight (kg)	10
Effective area (m ²)	0.179



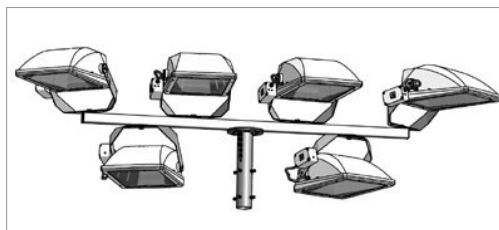
SB4	
Weight (kg)	9
Effective area (m ²)	0.137



SB4H	
Weight (kg)	13
Effective area (m ²)	0.236



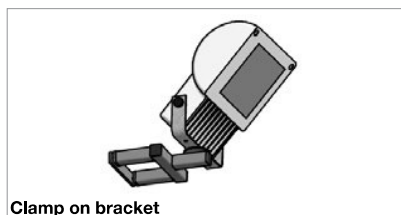
SB5	
Weight (kg)	11
Effective area (m ²)	0.25



SB6	
Weight (kg)	23
Effective area (m ²)	0.368



SB8		
Weight (kg) *	38	The SB8 carries either seven or eight Challenger® 1 floodlights. To be used in conjunction with shortened 18m and 20m HL330 masts as follows: HL33017.3 / HL33019.3
Effective area (m ²)	0.495	

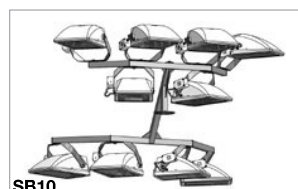


Clamp on bracket		
SBC16	Clamp on at 6m	HL250 only
SBC18	Clamp on at 8m	HL250 only
SBC3306	Clamp on at 6m	HL330 only
SBC3308	Clamp on at 8m	HL330 only



Sports lighting

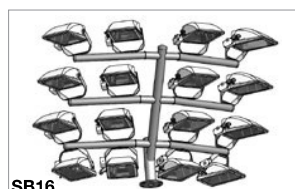
Sports lighting brackets feature angled-back cross arms as standard, directing the floodlights to their target positions more effectively. To maintain the necessary central floodlight mounting height, some brackets require a mast height reduction of either 1.5m or 2.5m.



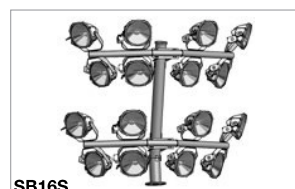
SB10	
Weight (kg)	50
Mast reduction	.7m
Effective area (m ²)	0.873



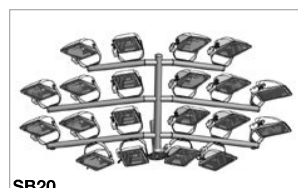
SB12	
Weight (kg)	59
Mast reduction	0m
Effective area (m ²)	0.946



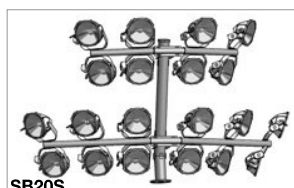
SB16	
Weight (kg)	180
Mast reduction	1.5m
Effective area (m ²)	1.78



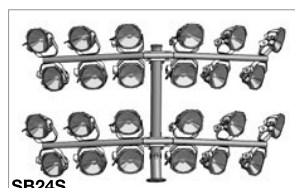
SB16S	
Weight (kg)	146
Mast reduction	1.5m
Effective area (m ²)	1.385



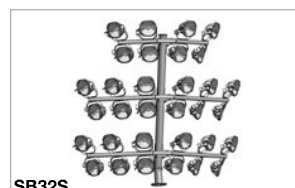
SB20	
Weight (kg)	217
Mast reduction	1.5m
Effective area (m ²)	2.226



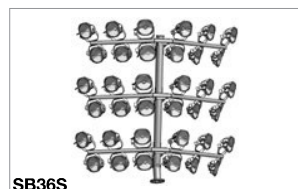
SB20S	
Weight (kg)	161
Mast reduction	1.5m
Effective area (m ²)	1.604



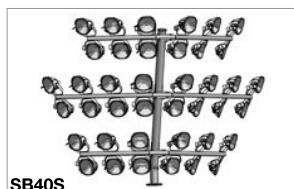
SB24S	
Weight (kg)	176
Mast reduction	1.5m
Effective area (m ²)	1.823



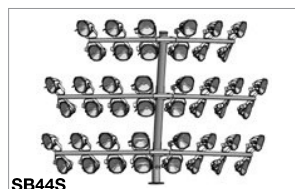
SB32S	
Weight (kg)	285
Mast reduction	2.5m
Effective area (m ²)	2.78



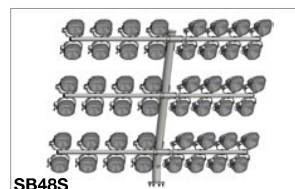
SB36S	
Weight (kg)	300
Mast reduction	2.5m
Effective area (m ²)	2.999



SB40S	
Weight (kg)	321
Mast reduction	2.5m
Effective area (m ²)	3.213



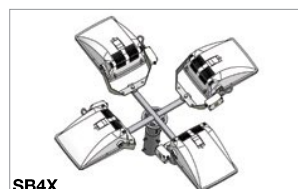
SB44S	
Weight (kg)	336
Mast reduction	2.5m
Effective area (m ²)	3.437



SB48S	
Weight (kg)	354
Mast reduction	2.5m
Effective area (m ²)	3.656

Area lighting

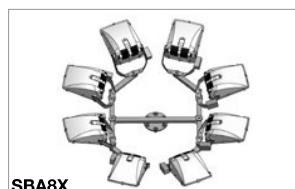
Practical, simple to build on site and cheap to transport, the 'hub and spoke' bracket arrangement is most common for Area lighting. They make it possible to achieve both 180° and 360° floodlight layouts.



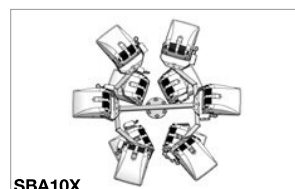
SBA4X	
Weight (kg)	11
Mast reduction	None
Effective area (m ²)	0.189



SBA6X	
Weight (kg)	43
Mast reduction	None
Effective area (m ²)	0.664



SBA8X	
Weight (kg)	47
Mast reduction	None
Effective area (m ²)	0.67



SBA10X	
Weight (kg)	43
Mast reduction	None
Effective area (m ²)	0.664



SBA12X	
Weight (kg)	50
Mast reduction	None
Effective area (m ²)	0.670

Accessories

Product	Product code
Double obstruction light: 2 x 55W lamps, each with an 8,000 hour life	THO003
Bracket to mount double obstruction light onto 114mm diameter cross-arm	BKT/F22
Twin obstruction light LED	TOL/LED/220V
Lightning rod, copper, 1000mm(h), to fix to canopy of mast (M16 fixing)	LPS225