



high mast solutions

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applications

applications

Freight terminals
Industrial parks
Car parks
Railway sidings
Airports
Docks
Motorways
Interchanges



Holophane installation and maintenance team

When you purchase a product from Holophane you purchase more than just a lighting luminaire, you also get a full pre and post-sales solution.

One of these solutions is our Field Service department who are a fully trained and experienced service team who support our extensive product range. We offer a complete value added package ranging from servicing to after-sales care.

services include

- > Mechanical Installation of Holophane High Mast columns and Head frames onto prepared foundations
- > Full and partial replacement regimes
- > Light meter readings to verify light designs by Holophane
- > Demonstration of how to operate the High Mast system and its power tools

projects include

- > Siemens Train Care, Northampton
- > Trafford Shopping Centre
- > B&Q Cleveland
- > Mahle Filters, Salisbury
- > Tesco Barrow in Furness



high mast[®]





The Holophane high mast system is easily the most sophisticated on the market. Flexible, functional and completely safe, the system can be used with a choice of three different luminaire types offering total flexibility of light distribution, including cut-off options. The latched raise and lower system utilises heavy duty stainless steel cables in conjunction with three continuous contact iris action guide arms on the lowering ring, allowing all maintenance to be carried out at ground level using a portable power tool connected to the mast supply. The extended remote control facility permits the operator to stand up to six metres from the base of the column.

lamp types included

> V-MAX™ & HMAO (27,000 - 58,000 lumens) - Speak to your local HEL representative for more details)

approvals

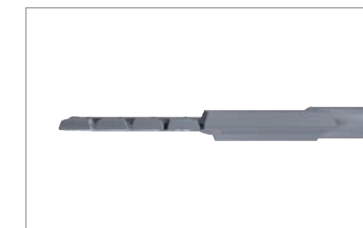
Complies with EN60598



For further information please visit the Holophane website
www.holophane.co.uk

available with

> V-MAX



> HMAO



Case study

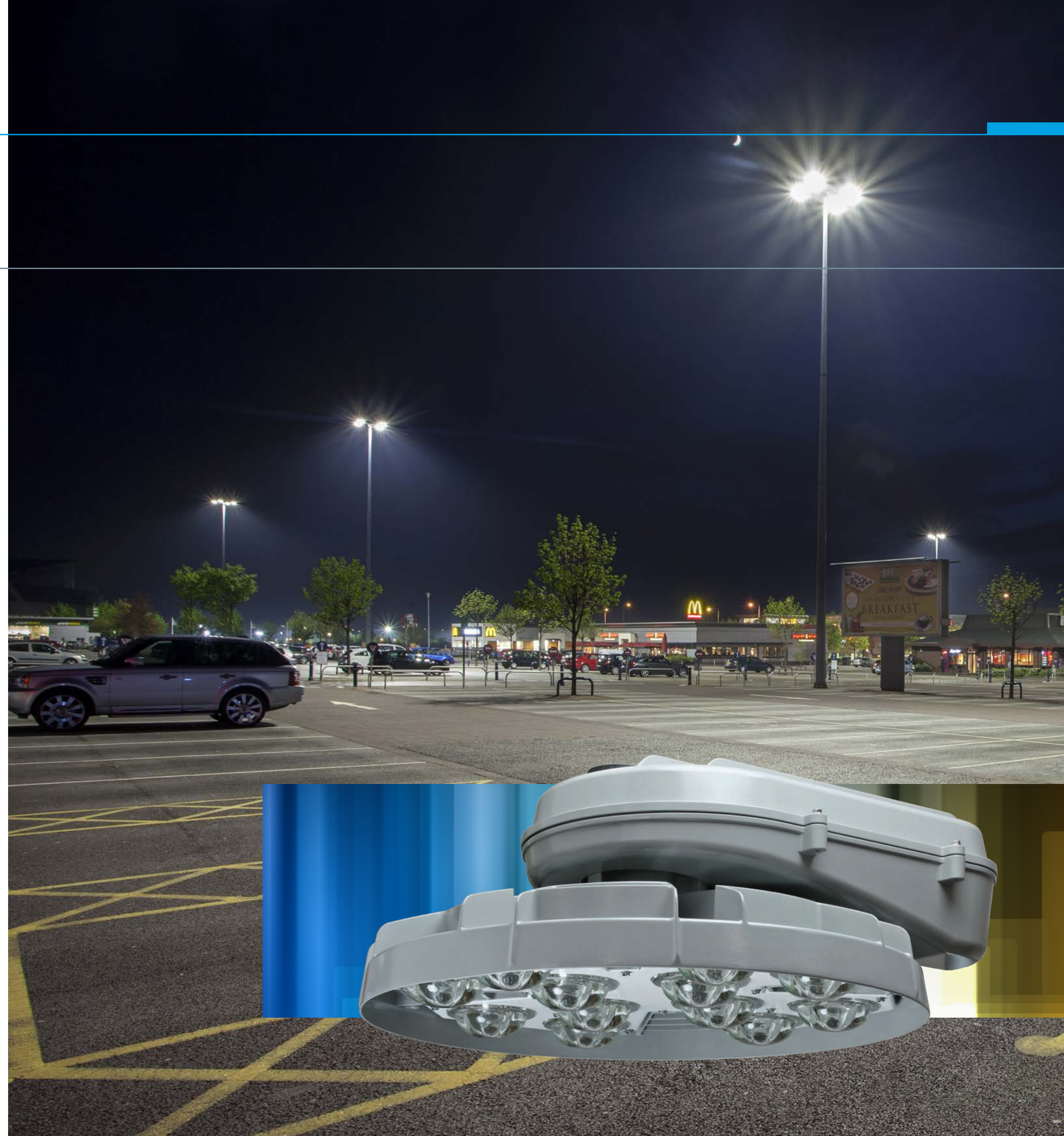
Middlebrook retail & leisure park

The Middlebrook Retail & Leisure Park, the largest in the UK, went out to tender for the upgrade of their exterior lighting and decided to use Holophane's High Mast Advanced Optix (HMAO) LED luminaire.

Heather Crank-Ingham, the Marketing & PR Manager for Middlebrook Retail & Leisure Park said that "The main reason we've decided to replace the lights on the high masts is to reduce the service charge to our retailers and obviously to be more energy efficient. The Park is approaching its 21st year, so things were rather dated and we are trying to reduce our carbon footprint." The installation consists of 9 high masts which previously needed 12 luminaires each in order to illuminate the Retail & Leisure park. Due to the improved energy efficiency and advanced optical control of our HMAO LED luminaire, we were able to mount just 4 or 5 fittings to illuminate the Retail & Leisure park. This resulted in a dramatic 75% drop in energy costs whilst increasing the lux levels by 30% across the park. The fittings are also wirelessly programmed to lower to 25% output from midnight to help save further energy. This has resulted in Middlebrook reducing their service charge from around £20,000 to £5,000 a year.

Heather Crank-Ingham also said that "The feedback that we have had from our shoppers is that it has made a massive difference and everything is so much brighter and more inviting in the evening. In terms of health and safety, it's safer for our shoppers, it's a better light for the CCTV systems for our security throughout the park. We are a mixed use development park and we have over 15 million visitors a year, so it's important that we keep things up to date and the safety of our shoppers is paramount."

When asked what their overall impression of the new Holophane lighting system was, Heather replied "We're extremely pleased with the savings that the new lighting system has brought to the retail park and the atmosphere and ambience it brings in the evenings. We have many sites throughout the group and we would definitely recommend this system for our other sites where it would fit."



Holophane High Mast System

The high mast System, lighting fixtures and mast shall be manufactured and tested as an integral system and be provided and warranted by Holophane. The specifications shall consist of detailed line drawings, and the following written specifications.

system overview

The Holophane Highmast system shall consist of four main sub-assemblies; top latching headframe, mast, top latching self-centring lantern carriage, mast and winch plate assembly. All material shall be of corrosive resistant nature including stainless steel, aluminium or galvanized steel (BS EN ISO 1461:2009) unless otherwise specified. All fixtures utilized on the lowering device shall have passed an accelerated vibration test of at least 1-g.

top latching head frame assembly

The top latching head frame shall consist of a one piece welded assembly with a hot dip galvanized finish after fabrication. All fasteners used for additional covers or other items shall be stainless steel. The head frame shall incorporate six hoist cable sheaves. Each sheave shall be a minimum 152mm diameter and the cable groove shall be machined with a circular cross-section to match the cable diameter. The sheaves shall have oil impregnated, pressed-in sintered bronze bushings. Each sheave shall be fabricated from steel and have a zinc electroplated finish with a yellow chromate dip. The three hoisting cables that operate over the sheaves shall be stainless steel and meet the requirements of BS EN 12385-1:2002+A1:2008. The head frame shall incorporate a power cable roller assembly consisting of multiple rollers providing a minimum 178mm bending radius for the cable. The design shall prevent the

power cord from riding up the sides of the rollers and shall incorporate keeper bars on each end to secure the cable. Three high strength cast aluminium latch barrels shall be provided on the headframe assembly. Each latch barrel shall be designed to hold the entire weight of the ring and luminaires. All cam surfaces of the barrel shall be internally located and not affected by environmental conditions such as icing. The latch barrels shall support the ring in a top-latched position, unloading the transition assembly, wire rope cables and the winch when the system is not in operation.

top latching self-centring lantern carriage

The top latching lantern carriage ring shall be fabricated of S275 carbon steel or equivalent with a hot dip galvanized finish. The assembly shall include the appropriate number of luminaire mounting arm brackets fabricated from mild steel tube of sufficient strength to support the specified luminaire. The mounting arms shall be hot dip galvanized finished, and shall be attached to the lantern carriage ring with stainless steel fixings. A weatherproof aluminium junction box shall be provided. The junction box shall include a weatherproof inlet on its exterior for testing of the luminaires at ground level. The enclosure shall be factory pre-wired with the appropriate number of electrical cable for luminaires and appropriately sized main power cable. The power cable shall be securely attached to the ring using cable clamps. Three stainless steel latch pins shall be provided on the lantern carriage. Each latch pin shall be capable of individually supporting the entire weight of the lantern carriage and luminaires, and shall be capable of individual rotation. Indicating

flags shall distinguish the latching/unlatching sequence, and shall be visible from ground level. The latching or unlatching sequence shall impart no more than one 1-g of force to any component of the system including luminaires. The centring system shall consist of roller contact, spring loaded, cast aluminium arms designed to protect the mast and luminaires from damage during raising and lowering of the luminaire ring assembly. The centring system shall keep the ring concentric to the pole during the raising and lowering operation. The centring arms shall be interconnected to prevent jamming of the system on the mast during high winds. The springs shall be stainless steel. The rollers shall be non-marking. The clevis plate assembly shall be designed to prevent misalignment of the three hoist cables. The wire rope cables shall be attached to the clevis plate with properly sized wire rope thimbles and factory swaged fittings. The attachment shall prevent the wire rope cable from untwisting under load. The clevis plate shall be fabricated of steel with a zinc-plated finish.



Positive fail-safe latching

winch plate assembly

The internal winch assembly shall have an ultimate strength of five (5) times the lifted load. The winch shall include a 30:1 worm gear reduction and an internal drag brake on the input shaft to prevent free spooling of the winch drum. The drum shall be supported on both ends and shall include a stainless steel cable keeper designed to aid the correct spooling of the winch cable. The winch drum shall be factory pre-wound with stainless steel high strength cable that meets the requirements of BS EN 12385-1:2002+A1:2008. The assembly shall include a circuit breaker sized for the correct voltage & phasing supplied for the luminaire load. An aluminium or zinc plated steel cover shall be supplied for the circuit breaker. A power cable and plug shall be supplied from the circuit breaker assembly. The power cable and plug shall match the main power cable of the high mast system.

mast

The mast shall be designed to I.L.P. Guide No. 7 “High masts for Lighting and CCTV” on the maximum wind speed likely to be exceeded only once in 50 years, measured at a height of 10 metres above level ground. Wind excited oscillation shall be damped by the method of construction and adequate allowance made for the related stress. The mast shall be constructed from S355 or equivalent steel plates cut and folded to form a polygonal section, telescopic jointed and fillet welded, with the exception of site joints. A door shall be provided in the base of the mast to permit clear access to equipment. The door shall be weather and vandal resistant with a heavy duty lock. The base flange welded connection to the mast shall fully develop the strength of the section. In addition, supplementary gussets shall be provided between bolt holes. The entire mast shall be hot dip galvanised after fabrication, internally and externally.

portable raise and lower tool

The raise and lower tool shall be portable and shall include a minimum 1hp heavy duty reversing type electric motor with a stalled torque at least twice that required to operate the lowering device. The motor shall drive the winch through a torque limiter coupling to limit the driving force on the hoist and winch cables. The torque limiter shall be factory pre-set. In addition, there shall be a back-up shear pin designed to shear at a torque level between 50% and 100% over the torque limiter setting. The drive motor assembly shall have a 6m cable with drum switch for remote operation. The raise and lower tool shall be supplied with a portable step-down transformer to provide 120V to the motor.

foundation bolt cage

The foundation cage shall consist of the foundation bolts welded in place by 2 steel rings. The bolt length, diameter and quantity shall be sufficient to support the mast, when correctly installed. All bolts shall be supplied with a minimum of 170mm of thread and shall be manufactured from Fe E500 steel or equivalent.

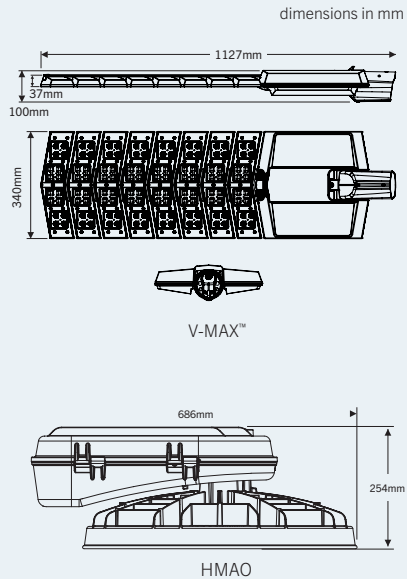


Remote control power tool



Ground level maintenance





weight & thermal data

Lamp Type	Min. Operating Temperature (°C)	Max. Ambient Temperature (°C)
V-MAX™		
V7	-40	50
V8	-40	50
HMAO		
HMAO	-20	35

luminaire specification

V-MAX™

The luminaire consists of a die cast LM6 aluminium housing ((EN AC-44100)(AL. Si12)) which is sealed to IP66 with a close cell gasket and M5 stainless steel fastener that also allows access to the gear cover for electrical termination. Metal core LED boards are mounted directly to the die cast LM6 aluminium ((EN AC-44100)(AL. Si12)) chevron to aid heat dissipation. Each IP66 LED chevron is connected to the main housing via gasketed (co-molded to PMMA 825T with TPE Versaflex OM 9-802CL) plug and play connectors and extruded aluminium alloy 6063 (AlMg0.5Si-T6) spine which will vary in length based on the number of LED chevrons. The 2x2 array of PMMA LED lenses are fused to a PMMA 825T overmold to ensure an IP66 seal is maintained. The luminaire is suitable for mounting to the Highmast system when specified with the 60mm side entry option.

HMAO

The luminaire shall consist of six, nine or twelve prismatic glass refractors manufactured from borosilicate glass to ensure longevity and minimise dirt depreciation. Each glass lens houses a multi die LED ‘chip on board’ and creates individual optical pods. Each optical pod is housed in a fully ventilated and finned housing manufactured from aluminium to maximise heat transfer. The electrical housing consists of two castings containing the drivers, 10kV surge protection and electrical termination. The luminaire chassis and electrical housing utilises all three heat transfer mechanisms of conduction, convection and radiation to ensure that the multi die ‘chip on board’ LED’s and electronic drivers are thermally managed. The luminaire is suitable for mounting to the Highmast system when specified with the 60mm side entry option.

features and benefits

Easy access to HMS headframe

- > Lightweight, portable raise and lower tool
- > Can be carried by a single person

Operational in higher wind speeds

- > Ideally suited for airports, seaports and other exposed locations.

Ease of use

- > Indicator flags make docking and un-docking the lantern carriage from the head frame easier to achieve.

Shock absorbing lantern carriage

- > Safe and dependable raise and lower system.

Positive fail-safe latching system

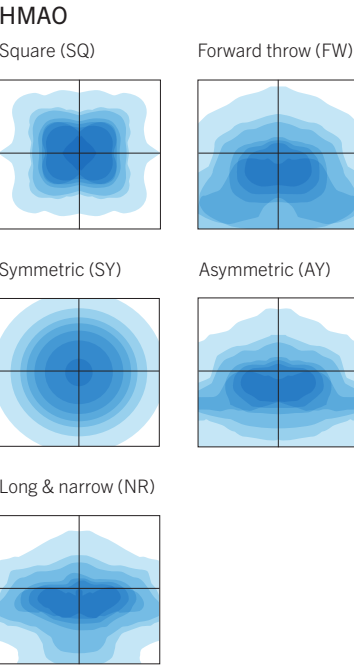
- > Eliminates tension on hoisting cables and prevents in-situ seizure.

Ground level maintenance

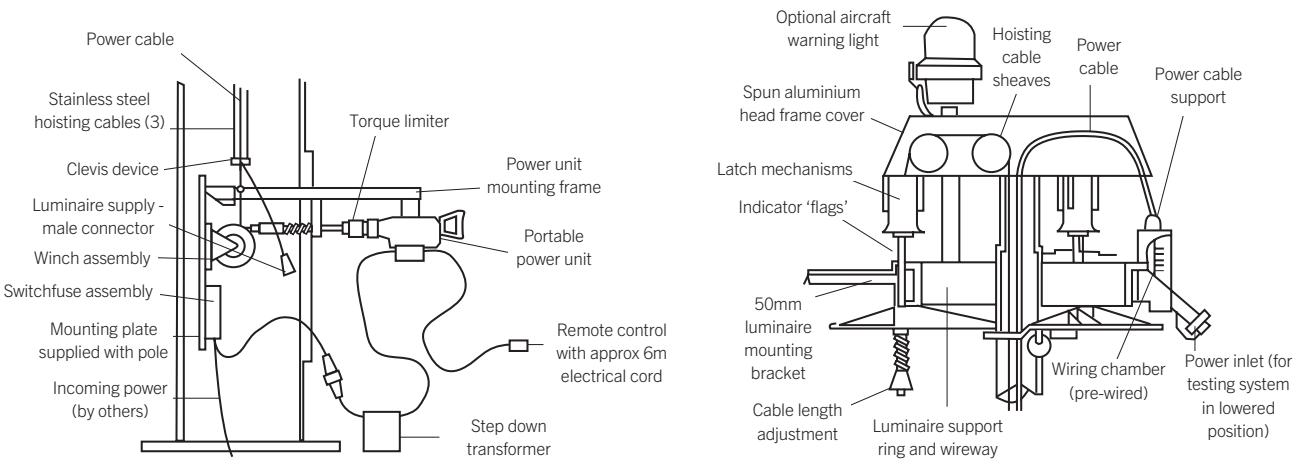
Simple Up-to-date Electrical system Flexibility

Versatile Mounting Arrays

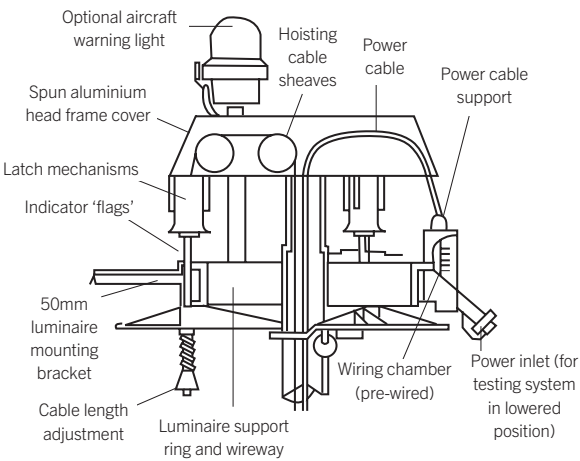
light distribution



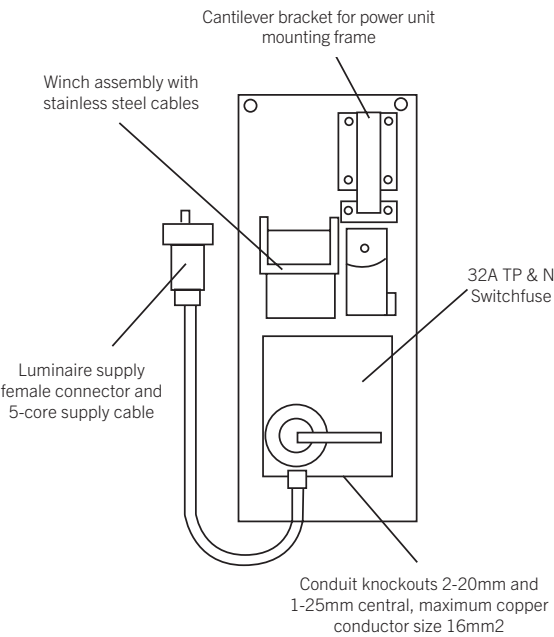
Pole Base Detail



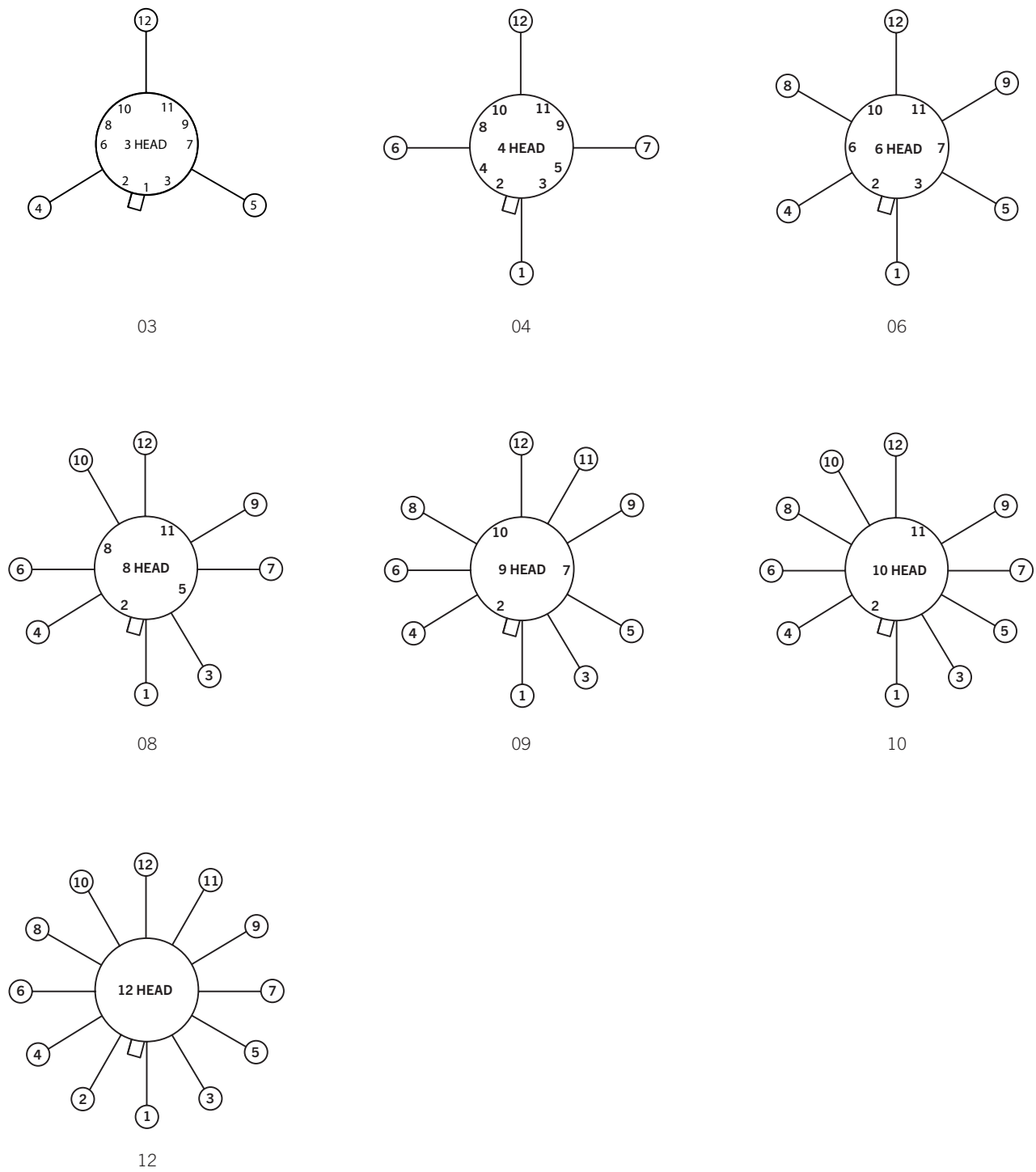
Head Frame & Mounting Ring Side View



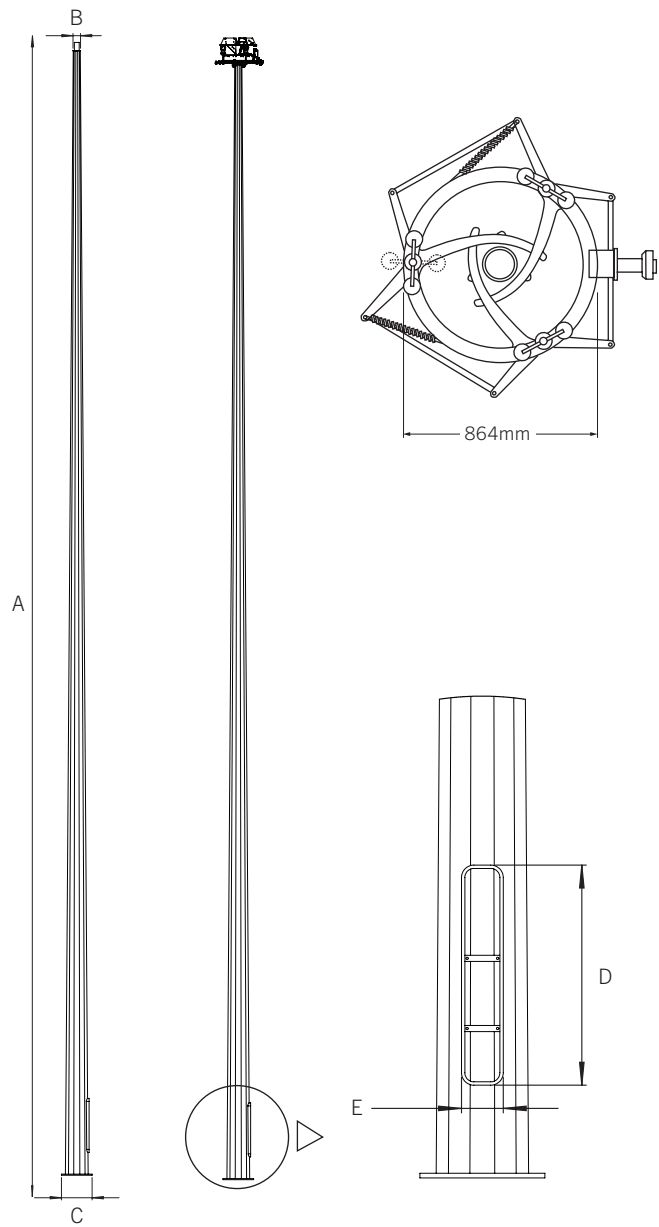
Switchfuse & Winch Assemblies



luminaire layout



High Mast System

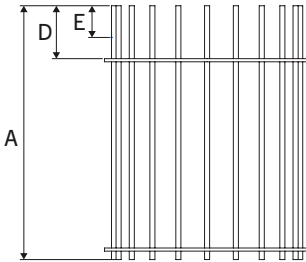
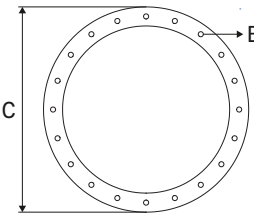


The following information should be provided to the contractor or civil engineer for site suitability analysis and foundation design. Holophane Europe Ltd will take no responsibility for the foundation design and structural sign-off.

Mast	Terrain Category (EN1991)	A Mast Height (m)	B Top Diameter (mm)	C Bottom Diameter (mm)	D Door Length (mm)	E Door Width (mm)	Highmast System Weight* (kg)	Total Weight (kg) including luminaires**	Maximum Overturning Moment (kNm)	Vertical Load (kN)	Horizontal Shear at ground level (kN)
HMS.15M	0	15	140	465	1400	230	772	910	205.0	8.3	18.2
HMS.20M	0	20	200	520	1400	230	1187	1371	351.0	12.6	25.4
HMS.25M	0	25	214	580	1400	230	1763	2039	533.0	18.9	32.9
HMS.30M	0	30	230	720	1400	230	2432	2708	782.0	25.4	43.2

* Weight of the Mast, Winch, Headframe, Brackets, and counterweights.

** The total weight provided is considering the use of HMAO luminaires and applies when utilising the maximum number of heads appropriate for the respective mast height.



Holophane HMS Foundation Cage

Mast	Foundation Cage	Mast Height (m)	A Stud Length (mm)	B Stud Diameter	Stud Quantity	C Cage Diameter	Hole Centres/PCD (mm)	D Stud Projection from Bolt Cage Top (mm)	E Threaded Stud Projection (mm)
HMS.15M	HMS.FC.15M	15	820	M24	12	670	570	190	170
HMS.20M	HMS.FC.20M	20	820	M24	16	730	630	190	170
HMS.25M	HMS.FC.25M	25	820	M24	24	860	770	190	170
HMS.30M	HMS.FC.30M	30	820	M24	28	990	900	190	170

ordering details - high mast

To find out more
please visit
www.holophane.co.uk

Code	Luminaire (required)	
HMS	High Mast System	
	Code	Column Height (required)
	.15M	15m mast height*
	.20M	20m mast height**
	.25M	25m mast height
	.30M	30m mast height
	Code	Suspension (required)
	.3W	3-way head configuration
	.4W	4-way head configuration
	.6W	6-way head configuration
	.8W	8-way head configuration
	.9W	9-way head configuration
	.10W	10-way head configuration
	.12W	12-way head configuration
	Code	Display System (optional)
	.Z	Aircraft warning light
HMS	.20M	.3W
Example		

* All high masts are suitable for TCAT0. Includes all plug and play electrical terminations and cables.

high mast - accessories

Code	Foundation Cage & Bolts
HMS.FC.15M	Foundation cage and bolts for 15m mast(one required per mast)
HMS.FC.20M	Foundation cage and bolts for 20m mast(one required per mast)
HMS.FC.25M	Foundation cage and bolts for 25m mast(one required per mast)
HMS.FC.30M	Foundation cage and bolts for 30m mast(one required per mast)

Code	HMS Raise & Lower Tool (required accessory)
HMS.PT1	HMS raise & lower tool

Code	Delivery (required)
HMS.DEL1	Standard delivery, per mast, within the 'UK mainland'
HMS.DEL2	Standard delivery, per mast, outside the 'UK mainland'

Code	Installation
HMS.IN1	Standard installation per mast, per day, within the 'UK Mainland'
HMS.IN2	Standard installation per mast, per day, outside the 'UK Mainland'

For configuration options on V-MAX™ and HMAO fittings, see the corresponding product brochure.



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