

Specification for High Masts with Raising and Lowering Ring type system

LIGHTING STRUCTURES "RAILOW" TYPE MASTS

20 to 40 metre High Mast

The mast shall be designed in accordance with SANS 0225 and manufactured by an **ISO 9001: 2008** accredited company.

Designs shall be appropriate for the applicable Altitude and Terrain Category where the mast is to be installed

Mast Shaft

The Mast shall be constructed from flat steel sheets, cut and bent into a twelve sided continuously tapered shaft comprising of a number of sections which are slip fitted together on site to form the overall mast shaft. The slip lengths shall be in accordance with SANS 0225.

The mast shall be fitted with a base welded to the shaft and there shall be gussets welded between the mast shaft and base plate.

The mast shall be fitted with a rectangular shaped removable access door in the base and the door shall be equipped with a removable vandal proof cover, behind which will be place for a padlock allowing the door to locked to the door frame. The hinging side door shall be secured into the door frame with three 16mm diameter solid round bars welded to the door and locating into three holes in the door frame.

Floodlight Mounting Ring

The mast shall be equipped with a Floodlight Mounting Ring manufactured from 76mm x 38mm cold rolled channel and fitted with a 20mm diameter steel bumper ring below the rolled channel section. The Ring shall further be fitted with a minimum of three docking plates which shall align with the three locating plates on the head assembly to ensure accurate and positive alignment and docking of the ring to the head assembly.

The Floodlight mounting ring shall have the required number of floodlight spigots/mounting arms welded to the ring.

The floodlight mounting ring shall be suspended from **two** off, 7/19 construction grade 316 stainless steel wire ropes secured to the ring by means of stainless steel thimbles fitted to the wire rope ends with copper "Talurit" ferrules crimped with hydraulic crimping tools.

The **two** wire ropes shall be secured in the base of the mast by the following means:

Each rope shall be fitted with a thimble and ferrule and shall be secured with a 12mm diameter bolt permanently fixed to a Latching Block which is in turn fitted to a Latching arm with a 12mm diameter pin. The pin and latching block shall of such a design that the pin cannot be removed under tension but only once the **double drum** which has been fitted in place and tension taken off the ring suspension wire ropes.

Mast Head assembly

The top of the mast shall be equipped with a steel fabricated head assembly fitted with three 280mm diameter **High Pressure die cast Aluminium pulleys**: Two pulleys for the wire ropes and one pulley for the electrical trailing cable. The pulleys shall be fitted with Nylon bushes and run on stainless steel shafts.

The complete top assembly shall be protected from the ingress of water by means of a moulded fibreglass canopy fitted over the top of the head assembly.

The mast and all steel components shall be hot dipped galvanised to SABS ISO 1461

Raising and lowering winch system

The lowering and raising of the floodlight ring shall be carried out by means of a **Double Drum** winch ensuring that the floodlight ring is, **at all times**, during the raising and lowering process, suspended from **two** wire ropes.

The Double Drum winch shall be driven by a 220 volt single phase 1500 watt electric motor fitted with a reduction gear box and Torque Limiting device.

The electric power tool shall be fitted with a 3 metre lead and a forward/reverse "Dead Man's" switch to start and stop the motor.

Electrical Equipment

The mast shall be equipped with an electrical distribution board, mounted inside the base of the mast housing the appropriate electrical control equipment.

A multicore NITRAL trailing cable fitted with a multipin socket shall plug into the distribution board and terminate in a weather proof Fibre Glass splitter box mounted on the floodlight ring. The floodlights shall be powered from flexible cables between the splitter box and the lights.

The floodlight luminaires shall be controlled by a photocell mounted in the base of the mast