



POLES

**PRODUCT
CATALOGUE**



METAL CRAFT INDUSTRIES

THE COMPANY PROFILE

Ahmed Group - Metal Craft Industries

We, **Ahmed Group**, incepted in the year 2006, are well established manufacturers and suppliers of a qualitative range of Industrial and Fabrication Products. These products are available in numerous specifications, which can be customized as per the requirement of our clients. Our range is highly appreciated by our clients for the optimum quality, durability, sturdy construction, corrosion resistance and low maintenance characteristics.

Metal craft Industries is a metal fabrication company that is totally dedicated to serving the sign industry. We believe that our customers should never settle for less than the best. Our goal from the start was, is and always will be to manufacture and deliver the best metal products for the sign industry. When customers want the best, they turn to Metalcraft. We are proud of our reputation and will continue to provide quality products and unmatched service to our customers.

Metal craft Industries, a Nasik based firm, offering a variety of Lighting Poles, Pipes and Lines Materials. The variety of Lighting Poles Pipes and Lines Materials that we offer includes Tubular Poles (For Street Lighting & Transmission Lines), Decorative Lighting Poles, Octagonal Poles, High Mast Poles, M.S/G.I. Pipes, Electric Poles, Line Materials etc. Our organization is showing a substantial growth since the time of its establishment in the year 2013. We are flourishing at a fast pace under the due guidance of our knowledgeable Chairman, **Mr. Rahil Ahmed Siddique**. We have also carved a niche for ourselves among the topmost Poles Suppliers in India.

Our Mission

To build a strong brand and maintain superior quality standard for customer satisfaction.

Our Vision

Achieve numerous positions in pole, cable, and pipes industry in terms of volume, turnover and quality in the Asian Continent.

Our Quality

Our focus on quality is evident in our product range. We have never compromised on quality and have successfully achieved a high level of customer appreciation resulting in long-lasting relations.



HIGH MAST POLE

High mast lighting is today preferred over conventional lighting. Especially where large areas are to be illuminated. This system eliminates the need for numerous lighting columns which, under certain circumstances, can pose hazardous to movement. This is possible because the high mast lighting system achieves very large space to height ratios.

High-mast lighting is ideal for industrial or commercial areas, docks, airports, flyovers, stations, car parks and even some hazardous areas. All of these require the best possible lighting with minimum interference from the installation itself combined with ease of maintenance.

Mast Structure

High mast is continuously tapered; polygonal cross section of 12 to 20 sides fabricated from special steel plates, and is delivered at site in sections. Sections are joined together by slip-stress-fit method and are provided with fully penetrated and welded flange.

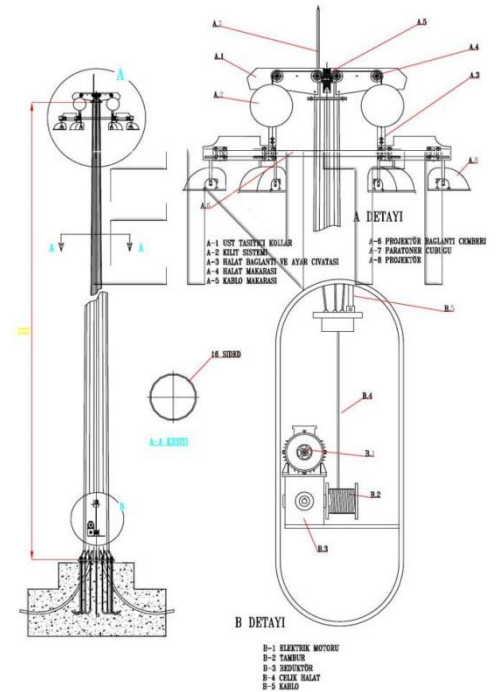
The design is based on proven in-tension design conforming to the Technical Report No 7-1996, Institution of Lighting Engineers. UK. This ensures assured performance and reliable service. The structure is suitable for loading as per IS 875 (part3) 1987.

Construction

High mast is fabricated from steel plates conforming to BSEN 10025, GR-S255 JO or equivalent as per customer's requirement, cut and folded to form a polygonal section. Masts come in two sections for 16 & 20 Mtr and in three sections for 25 & 30 Mtr heights and are only longitudinally welded, conforming to BS 5135/AWS.

The mast is provided with a fully penetrated flange, which is free from any laminations or incursions. The welded connection of the base flange is fully developed to the strength of the entire section. The base flange is provided with supplementary gussets between bolt holes to ensure elimination of helical stress concentration.

For environmental protection of the mast, the entire fabricated mast is Hot dip Galvanized (Single Dip) internally and externally, that results in uniform coating thickness of 65 to 85 as per sheet thickness & maintaining BSEN ISO-1461 or equivalent.





Cable and Cable Connections

Multi core, flexible, round and sheathed power cable(s) provided with metal or PVC cased plug and socket with guard ring terminates in the base compartment. At the mast head cable is connected through suitable PVC gland to weather proof junction box fitted on lantern ring.

One circuit of 5Cx2.5 sq mm cable is provided for every 8.5 KW load.

Earthing Terminals & Lighting finials

Suitable earth terminal using 12 mm diameter stainless steel bolts are provided at a convenient location or at the base of the mast.

Control Panel

Provided with a control panel fabricated out of 14/16 SWG CRCA sheet comprising incoming MCB isolator, copper wiring, and suitable lining contactor.

Foundation Bolts

High tensile hot dip galvanized holding down bolts are supplied complete with anchor plate for casting into the foundation. A precision made steel template with precise holes to ensure correct vertical and horizontal bolt alignment is also provided.

Top Pulley Assembly

The pulleys are of large diameter, appropriate to the multicore flexible cable being used. They are of non-corroding material and run on self-lubricating bearings with stainless steel spindles. Arrangements are provided to ensure that the electric cables and steel wire ropes are separated before passing over their pulleys to prevent ropes and cables leaving the pulley's grooves.

The pulleys are housed in a chassis integral with a sleeve, which slips over the top of the mast and is secured axially and in azimuth. Guides and stops are provided for docking the lantern carriage. For 2 or 3-point suspension carriage, an anchor point is securely welded to the assembly to receive the safety maintenance equipment wherever relevant. The complete chassis assembly is hot dip galvanized after lubrication. A weather proof hot dip galvanized canopy protects the pulley assembly.

Winches

Winches are completely self-sustaining without the need for brakes, spring or clutches which require adjustment or which can be affected by moisture or lubricant. The gear ratio is 53:1. The winches are self-lubricating by means of an oil bath and recommended lubricant only is used. A suitable high-powered, electrically driven, internally mounted power tool, with manual override may be supplied for the raising and lowering of the lantern carriage.

Stainless Steel Wire Ropes

Steel Wire ropes are flexible marine grade (ATSI 316) and of stainless steel 7/19 construction. Thimbles and terminals are of compatible materials.

Winch Driving Power Tools

The power tool is a single or 3 phase, single speed, heavy-duty type electric motor having a special driving shaft for transmitting torque to winch gearbox. A remote control switch with suitable length of cable allows the equipment to operate from a distance.

Arrangements are provided to support the power tool accurately and securely during its operation. Separate handle is also provided for manual operation of the winch.



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OCTAGONAL POLE

Metal Craft Industries designs and manufactures a wide range of octagonal poles, for primary use as street lighting poles. Products are fabricated using premium quality raw material and are customized to client's specification.

Metal Craft Industries can supply masts with conventional raising or lowering head frame systems, by external ladder or even internal access. Metal Craft Industries Octagonal Poles come with a large range of platforms and a choice of flood lighting brackets.

The poles are manufactured from tapered polygonal sections, which are slipped together at site and so maintenance of close tolerances and straightness are thrust areas. They come ready as flange-plated, galvanized and custom designed.



Metal Craft Industries uses high-strength sheet steel and can produce single-piece poles up to a length of 14 meters. The two shell halves are welded together with advanced systems and with automatic sigma machines. The octagonal poles shafts are continuously tapered with single longitudinal welding & no circumferential weld. The manufacturing facilities available allows production of single section of length up to 14 meters, which can be galvanized through single dip process at the company's in-house sophisticated galvanizing facilities, and guarantees great corrosion resistance. X-ray, ultrasound, and surface-crack inspections ensure top material quality and help maximize the life of Metal Craft Industries poles and masts.

Material used are based on the following standards

Octagonal Poles HT Steel Conforming to grade S355JO or equivalent

Base Plate Fe 410 conforming to IS 226 / IS 2062

Foundation Bolts EN.8 grade



Design

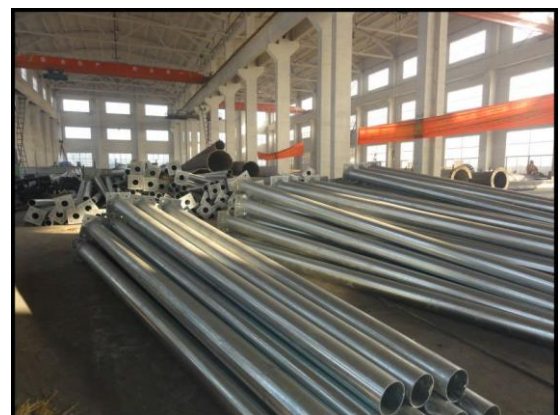
The Octagonal Poles are designed to withstand maximum wind speed as specified in IS 875. The top loading area and the weight of fixtures are considered while calculating the maximum deflection of the pole and to meet the requirement of BS: 5649 Part VI 1982.

Pole Shaft

The pole shafts have octagonal cross section and are continuously tapered with single longitudinal welding. There is no circumferential welding. The welding of pole shaft is done by Submerged Arc Welding (SAW) process. They are provided with rigid flange plate of suitable thickness with provision for fixing 4 foundation bolts. This base plate is fillet welded to the pole shaft from inside and outside. The welding is done by MMAW process.

Door opening

The octagonal Poles have a door of approximate 500 mm length at the elevation of 500 mm from the Base plate. The door is vandal resistant and weather proof to ensure safety of internal connections. The door is flush with the exterior surface and has suitable locking arrangement. There is also a suitable arrangement for earthing. The poles are adequately strengthened at the location of the door.



OCTAGONAL POLE - Technical Data Specifications

Pole Height (Mtrs.)	5 Mtrs	7 Mtrs		9 Mtrs	9 Mtrs	10 Mtrs	11 Mtrs	12 Mtrs
Cat. No.	HM 1105 P	HM 1107 P		HM 1109 PA	HM 1109 PB	HM 1110 P	HM 1111 P	HM 1112 P
Material of Construction	BSEN 10025	BSEN 10025		BSEN 10025	BSEN 10025	BSEN 10025	BSEN 10025	BSEN 10025
Metal Protection Treatment	H.D. Galvanised	H.D. Galvanised		H.D. Galvanised	H.D. Galvanised	H.D. Galvanised	H.D. Galvanised	H.D. Galvanised
Avg Thickness of Galvanisation	65 Microns	65 Microns		65 Microns	65 Microns	65 Microns	65 Microns	65 Microns
Thickness of Sheet	3 mm	3 mm		3 mm	3 mm	3 mm	3 mm	3 mm
Thickness of Base Plate	16 mm	16 mm		20 mm	20 mm	20 mm	20 mm	25 mm
Bottom Diameter	135 mm	150 mm		150 mm	200 mm	200 mm	200 mm	240 mm
Top Diameter	65 mm	75 mm		75 mm	100 mm	100 mm	100 mm	110 mm
Number of Foundation Bolts	4	4		4	4	4	4	4
PCD of Foundation Bolt	210 x 210 mm	240 x 240 mm		240 x 240 mm	310 x 310 mm	310 x 310 mm	310 x 310 mm	350 x 350 mm
Bolt Diameter	16 mm	16 mm	20 mm	20 mm	20 mm	25 mm	25 mm	



SWAGED POLE

MCI manufactures all kinds of poles at its well-equipped plant which features machinery like Hydraulic Swaging machines, Straightening and Welding Machines and has facilities to produce poles up to the length of 16 meters & thickness up to 8 mm. Customization is also done as per a customer's specifications.

Swaged Poles include Light Poles in single hang & double hang, Street Light Poles, Traffic Light Poles etc., and are made of ERW tubes of suitable lengths swaged and joined together.

Advantages

The MCI team of veterans in the steel pole business utilizes their individual and collective experience and knowledge along with plant & equipment to effectively complete any job within a customers' deadline, no matter what the design challenge. The following are the advantages of MCI Poles

- ❖ Zero maintenance – no pole fires, insect infestation or pole rot
- ❖ Weighs 50-70% less than comparable concrete structures
- ❖ Custom designs – made to customer's exact specifications
- ❖ Lasts longer - steel poles can last as long as 85 years with no shrinkage
- ❖ No copper wire grounding required
- ❖ Fully recyclable and non-toxic
- ❖ Custom finished to your specification
- ❖ Steel Pipes manufactured as per ASTM specification
- ❖ Capable of galvanizing all sizes of poles in Single Dip (Plant size: 14.1 m length x 1.1 m width)

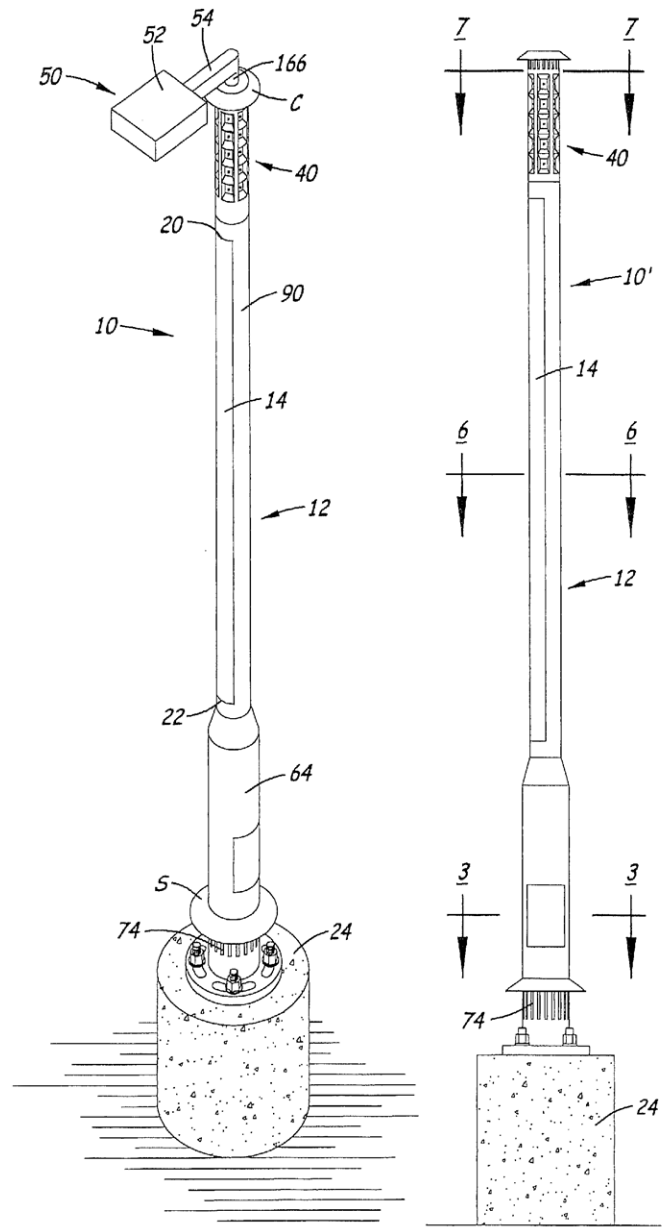


Fig. 1

Fig. 2



SWAGED TYPE STEEL TUBULAR POLES 410 - SP - MPA

Designation	Overall Length (m)	Length of Sections			Outside Diameter and Thickness of Section			Approx. Weight of Pole
		Bottom (m)	Middle (m)	Top (m)	Bottom (mm)	Middle (mm)	Top (mm)	
410-SP1	7.00	4.00	1.50	1.50	114.3x3.65	88.9x3.25	76.1x3.25	62
410-SP2	7.00	4.00	1.50	1.50	114.3x4.50	88.9x4.05	76.1x3.25	73
410-SP3	7.00	4.00	1.50	1.50	114.3x5.40	88.9x4.85	76.1x3.25	85
410-SP4	7.50	4.50	1.50	1.50	114.3x3.65	88.9x3.25	76.1x3.25	67
410-SP5	7.50	4.50	1.50	1.50	114.3x4.50	88.9x4.05	76.1x3.25	79
410-SP6	7.50	4.50	1.50	1.50	114.3x5.40	88.9x4.85	76.1x3.25	93
410-SP7	7.50	4.50	1.50	1.50	139.7x4.50	114.3x3.65	88.9x3.25	97
410-SP8	7.50	4.50	1.50	1.50	139.7x4.85	114.3x3.65	88.9x3.25	103
410-SP9	7.50	4.50	1.50	1.50	139.7x5.40	114.3x3.65	88.9x3.25	110
410-SP10	8.00	4.50	1.75	1.75	114.3x3.65	88.9x3.25	76.1x3.25	70
410-SP11	8.00	4.50	1.75	1.75	114.3x4.50	88.9x4.05	76.1x3.25	83
410-SP12	8.00	4.50	1.75	1.75	114.3x5.40	88.9x4.85	76.1x3.25	97
410-SP13	8.00	4.50	1.75	1.75	139.7x4.50	114.3x3.65	88.9x3.25	101
410-SP14	8.00	4.50	1.75	1.75	139.7x4.85	114.3x4.50	88.9x3.25	111
410-SP15	8.00	4.50	1.75	1.75	139.7x5.40	114.3x4.50	88.9x3.25	119
410-SP16	8.50	5.00	1.75	1.75	114.3x3.65	88.9x3.25	76.1x3.25	75
410-SP17	8.50	5.00	1.75	1.75	114.3x4.50	88.9x4.05	76.1x3.25	89
410-SP18	8.50	5.00	1.75	1.75	114.3x5.40	88.9x4.85	76.1x3.25	104
410-SP19	8.50	5.00	1.75	1.75	139.7x4.50	114.3x3.65	88.9x3.25	109
410-SP20	8.50	5.00	1.75	1.75	139.7x4.85	114.3x3.65	88.9x3.25	115
410-SP21	8.50	5.00	1.75	1.75	139.7x5.40	114.3x4.50	88.9x3.25	129
410-SP22	8.50	5.00	1.75	1.75	165.1x4.50	139.7x4.50	114.3x3.65	141
410-SP23	8.50	5.00	1.75	1.75	165.1x4.85	139.7x4.50	114.3x3.65	148
410-SP24	8.50	5.00	1.75	1.75	165.1x5.40	139.7x4.50	114.3x3.65	158
410-SP25	9.00	5.00	2.00	2.00	114.3x3.65	88.9x3.25	76.1x3.25	78
410-SP26	9.00	5.00	2.00	2.00	114.3x4.50	88.9x4.05	76.1x3.25	92
410-SP27	9.00	5.00	2.00	2.00	114.3x5.40	88.9x4.85	76.1x3.25	108
410-SP28	9.00	5.00	2.00	2.00	139.7x4.50	114.3x3.65	88.9x3.25	113
410-SP29	9.00	5.00	2.00	2.00	139.7x4.85	114.3x4.50	88.9x3.25	125
410-SP30	9.00	5.00	2.00	2.00	139.7x5.40	114.3x4.50	88.9x3.25	133
410-SP31	9.00	5.00	2.00	2.00	165.1x4.50	139.7x4.50	114.3x3.65	147
410-SP32	9.00	5.00	2.00	2.00	165.1x4.85	139.7x4.50	114.3x3.65	154
410-SP33	9.00	5.00	2.00	2.00	165.1x5.40	139.7x4.50	114.3x3.65	164
410-SP34	9.50	5.00	2.25	2.25	139.7x4.50	114.3x4.50	88.9x3.25	122
410-SP35	9.50	5.00	2.25	2.25	139.7x4.85	114.3x4.50	88.9x3.25	129
410-SP36	9.50	5.00	2.25	2.25	139.7x5.40	114.3x4.50	88.9x3.25	137
410-SP37	9.50	5.00	2.25	2.25	165.1x4.50	139.7x4.50	114.3x3.65	153
410-SP38	9.50	5.00	2.25	2.25	165.1x4.85	139.7x4.50	114.3x3.65	160
410-SP39	9.50	5.00	2.25	2.25	165.1x5.40	139.7x4.50	114.3x3.65	170
410-SP40	10.00	5.20	2.40	2.40	139.7x4.50	114.3x4.50	88.9x3.25	128

SWAGED TYPE STEEL TUBULAR POLES 410 - SP - MPA

Designation	Overall Length (m)	Length of Sections			Outside Diameter and Thickness of Section			Approx. Weight of Pole
		Bottom (m)	Middle (m)	Top (m)	Bottom (mm)	Middle (mm)	Top (mm)	
410-SP41	10.00	5.20	2.40	2.40	139.7x4.85	114.3x4.50	88.9x3.25	135
410-SP42	10.00	5.20	2.40	2.40	139.7x5.40	114.3x4.50	88.9x3.25	144
410-SP43	10.00	5.20	2.40	2.40	165.1x4.50	139.7x4.50	114.3x3.65	160
410-SP44	10.00	5.20	2.40	2.40	165.1x4.85	139.7x4.50	114.3x3.65	168
410-SP45	10.00	5.20	2.40	2.40	165.1x5.40	139.7x4.50	114.3x3.65	178
410-SP46	10.00	5.20	2.40	2.40	193.7x4.85	165.1x4.50	139.7x4.50	208
410-SP47	10.00	5.20	2.40	2.40	193.7x5.40	165.1x4.50	139.7x4.50	221
410-SP48	10.00	5.20	2.40	2.40	193.7x5.90	165.1x4.50	139.7x4.50	233
410-SP49	11.00	5.60	2.70	2.70	139.7x4.50	114.3x4.50	88.9x3.25	140
410-SP50	11.00	5.60	2.70	2.70	139.7x4.85	114.3x4.50	88.9x3.25	147
410-SP51	11.00	5.60	2.70	2.70	139.7x5.40	114.3x5.40	88.9x3.25	164
410-SP52	11.00	5.60	2.70	2.70	165.1x4.50	139.7x4.50	114.3x3.65	175
410-SP53	11.00	5.60	2.70	2.70	165.1x4.85	139.7x4.50	114.3x3.65	183
410-SP54	11.00	5.60	2.70	2.70	165.1x5.40	139.7x4.50	114.3x3.65	194
410-SP55	11.00	5.60	2.70	2.70	193.7x4.85	165.1x4.50	139.7x4.50	227
410-SP56	11.00	5.60	2.70	2.70	193.7x5.40	165.1x4.50	139.7x4.50	241
410-SP57	11.00	5.60	2.70	2.70	193.7x5.90	165.1x4.85	139.7x4.50	256
410-SP58	12.00	5.80	3.10	3.10	165.1x4.50	139.7x4.50	114.3x3.65	186
410-SP59	12.00	5.80	3.10	3.10	165.1x4.85	139.7x4.50	114.3x3.65	197
410-SP60	12.00	5.80	3.10	3.10	165.1x5.40	139.7x4.50	114.3x3.65	208
410-SP61	12.00	5.80	3.10	3.10	193.7x4.85	165.1x4.50	139.7x4.50	245
410-SP62	12.00	5.80	3.10	3.10	193.7x5.40	165.1x4.50	139.7x4.50	259
410-SP63	12.00	5.80	3.10	3.10	193.7x5.90	165.1x4.85	139.7x4.50	277
410-SP64	12.00	5.80	3.10	3.10	219.1x4.85	193.7x4.85	165.1x4.50	292
410-SP65	12.00	5.80	3.10	3.10	219.1x5.60	193.7x4.85	165.1x4.50	313
410-SP66	12.00	5.80	3.10	3.10	219.1x5.90	193.7x4.85	165.1x4.50	322
410-SP67	13.00	5.80	3.60	3.60	193.7x4.85	165.1x4.50	139.7x4.50	261
410-SP68	13.00	5.80	3.60	3.60	193.7x5.40	165.1x4.85	139.7x4.50	281
410-SP69	13.00	5.80	3.60	3.60	193.7x5.90	165.1x5.40	139.7x4.50	302
410-SP70	13.00	5.80	3.60	3.60	219.1x4.85	193.7x4.85	165.1x4.50	312
410-SP71	13.00	5.80	3.60	3.60	219.1x5.60	193.7x4.85	165.1x4.50	333
410-SP72	13.00	5.80	3.60	3.60	219.1x5.90	193.7x4.85	165.1x4.50	343
410-SP73	14.50	6.50	4.00	4.00	193.7x5.40	165.1x4.85	139.7x4.50	312
410-SP74	14.50	6.50	4.00	4.00	193.7x5.90	165.1x5.40	139.7x4.50	336
410-SP75	14.50	6.50	4.00	4.00	219.1x5.60	193.7x4.85	165.1x4.50	370
410-SP76	14.50	6.50	4.00	4.00	219.1x5.90	193.7x4.85	165.1x4.50	380
410-SP77	16.00	7.00	4.50	4.50	193.7x5.40	165.1x4.85	139.7x4.50	341
410-SP78	16.00	7.00	4.50	4.50	193.7x5.90	165.1x5.40	139.7x4.50	367
410-SP79	16.00	7.00	4.50	4.50	219.1x5.60	193.7x4.85	165.1x4.50	405
410-SP80	16.00	7.00	4.50	4.50	219.1x5.90	193.7x4.85	165.1x4.50	416

CONICAL POLE

In our extensive range of products, we also offer our esteemed clients a broad array of Conical Poles. These poles are manufactured using quality assured steel that is procured from trusted vendors of the market with the help of latest technology. Our offered poles are provided with hollow polygonal poles having closely circular cross section at both ends and mainly used for street, roadways, pedestrian lightning purpose. Further, these Conical Poles are available in various specifications as per our client's requirement at market leading prices.

Application:

- ❖ CCTV System
- ❖ Flag Holder
- ❖ Exterior Hi-Bay Lighting
- ❖ Traffic Light and Sign

The full and deep knowledge of poles manufacturing process and product features make MCI leader on the world for such pole typology automatic production line.

MCI developed during all these years of experience machines and solutions to produce such poles with high quality, reliability, high production rate making system very flexible to match the market target.

For the above products MCI supply the following machines:

- ❖ Plasma cutting machine for trapezium preparation (starting by sheet);
- ❖ Cut to length line for trapezium preparation (starting by coils);
- ❖ Synchronized press brake for trapezium bending, using special machine and dies for round conical poles;
- ❖ Automatic feeding system for the automatic trapezium management under the tress brake and for trapezium marking;
- ❖ Single shell welding machine for shell welding and automatic straightening;
- ❖ Lighting pole finishing line for automatic operation of plasma door opening, base plate welding, drilling and nuts welding.

MCI can support the manufacturing companies to make the best choice in term of the best technological solution at reasonable and custom investment level.



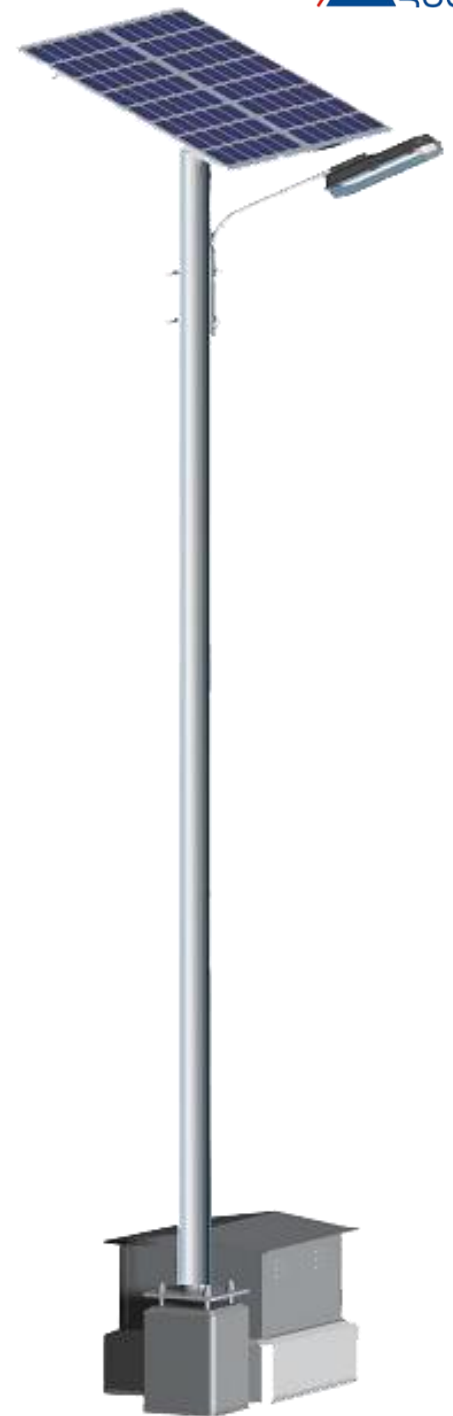
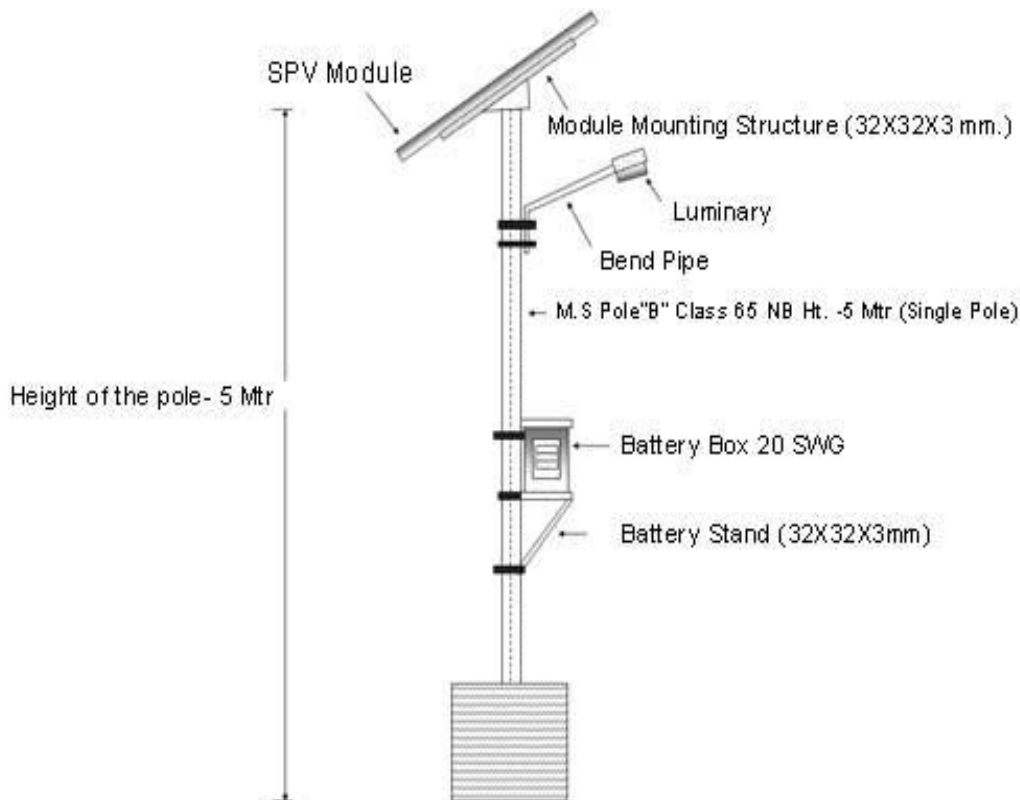
SOLAR LIGHT POLE

Utilizing the modern technology and latest machinery, we bring forth the wide array of Solar street light post. It is widely demanded by our clients for its excellent design and durability. The offered light post available in various specifications, as per the requirements of our esteemed clients. Premium quality raw material is used by the professionals, along with contemporary production equipment to manufacture our offered light post. Clients can avail this Solar street light post from us at market leading price.

Features:

- ❖ Accurate dimensions
- ❖ Corrosion resistance
- ❖ Easy installation
- ❖ Durability

To cater to the rising demands and requirements of our clients, we come with superlative quality Street Light Pole. Manufactured using advanced technology, the offered product is assured of premium quality. Easy to install and to maintain, the entire range of street light poles offered by us has amassed words of intense praise among our respected clients.



SPECIFICATIONS	LED street lighting				CFL street lighting	
	200LS	300LS	400LS	750LT	350CS	600CS
Type of lamp	LED	LED	LED	LED	CFL	CFL
Lamp (WxQty.)	7x1	12x1	15x1	30x1	11x1	11x2
PV array wattage (WpxQty.)	35x1	65x1	80x1	75x2	75x1	60x2
Battery (Ah)	40	60	75	150	75	100
Pole height (m)	4	4	4	6	4	4
Light output (lumens)	630	1080	1350	2700	900	1800
Recommended hours of charging at full sun shine (1kW/m2 irradiance) for daily usage of 12 hours*	5	4.5	4.5	5	3.5	4.5
Maximum autonomy days, assuming 12 hours of usage per day (days)	3	3	3	3	4	3
Maximum continuous back up (hours)	45	40	40	40	56	36
Diameter spread on ground (m)	5	5	5	8	5	5
Savings per year as compared to a grid based system (RS)**	2,470	3,310	4,950	9,920	2,470	4,950



HT-LT LINE POLE

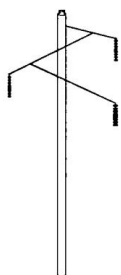
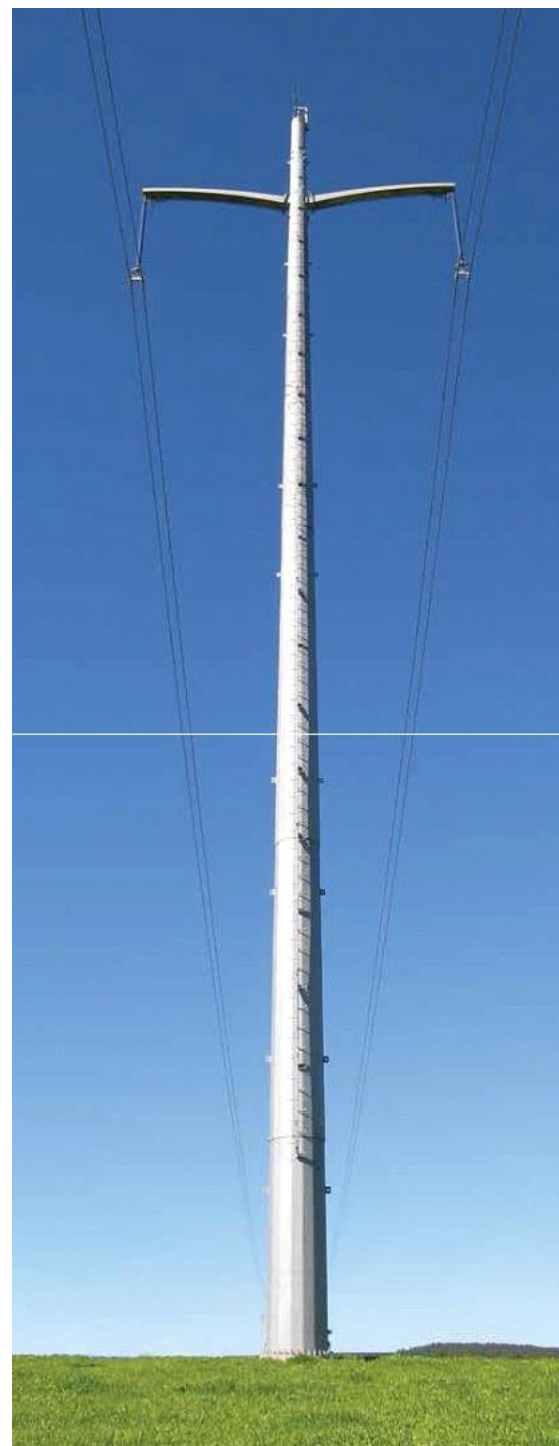
The electric lines that generate the most public interest are often high-voltage transmission lines. These are the largest and most visible electric lines. Most large cities require several transmission lines for reliable electric service.

Transmission lines are larger than the more common distribution lines that exist along rural roads and city streets. Transmission line poles or structures are commonly between 60 and 140 feet tall. Distribution line structures are approximately 40 to 60 feet tall.

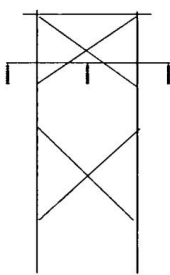
There are several different kinds of transmission structures. Transmission structures can be constructed of metal or wood. They can be single-poled or multi-poled. They can be single-circuited, carrying one set of transmission lines or double-circuited with two sets of lines.

Different transmission structures have different material and construction costs, and require different right-of-way widths, distances between structures (span length), and pole heights. Construction requirements and costs also vary with the different sized voltages. In the past, many transmission lines were constructed on H-frame wood structures and metal lattice structures. New lines are most often constructed with single pole structures because of right-of-way width limitations and environmental considerations. Current right-of-way widths vary between 80 to 150 feet.

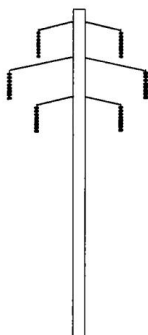
Pole height and load capacity limitations determine the distance between poles (span length) either on the basis of ground clearance or ability to support heavy wind and ice loads. In areas where single-pole structures are preferred, weak or wet soils may require concrete foundations for support. Where a transmission line must cross a street or slightly change direction, larger angle structures or guy wires may be required. Poles with guy wires impact a much larger area. Angle structures are usually more than double the diameter of other steel poles. They are made of steel, usually five to six feet in diameter, and have a large concrete base. The base may be buried ten or more feet below the ground surface. The diameter of the pole and the depth the base is buried depends on the condition of the soils and the voltage of the line.



single-circuit davit



H-frame



double-circuit davit



horizontal line post



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