



SANKHLA UDYOG

Manufacturer of: -

Power & Distribution Transformer & P.C.C Poles

Factory: A-48 M.L.A, 2nd Phase Basni, 342005

Jodhpur (Rajasthan).

www.sankhlaudyog.com

Office : 91-291-2656830

: 91-291-2656831

Fax No : 91-291-2744089

Mobile : +91- 9414071719 / 9784429542

Email : info@sankhlaudyog.com

THE COMPANY

For over a decade SANKHALA UDYOG is an ISO-9001 certified company & has been pioneer in the manufacturing of IS 2026 approved transformers since 1979 & after the recent amendment is strictly following BIS & BEE approved three phase transformers as per IS: 1180 Level-I /II/III of star rating 3 / 4 / 5 of different ratings including transformers for special applications confirming with latest national and international standards, to meet as per customer specifications.

The factory has indulged with well equipped and separate warehouses for core processing, Conductor manufacturing, steel fabrication, winding assembly and tanking department with fully furnished laboratory. Full testing facilities where Impulse test and Short circuit test are also carried out as per IS/IEC available and these tests are regularly carried out each unit wise under experts supervision.

The transformers are designed for operational economy and require very little maintenance. Our team of the people who work for SU group at every level is highly dedicated, have expertise engineers, production, finance and marketing.

OUR THREE PHASE PRODUCT RANGE (OLTC/OCTC):

POWER TRANSFORMERS: 1 MVA to 8 MVA Oil Immersed transformers with V.R: 33kV/11kV, 33kV/6.6kV & 33kV/433kV.

DISTRIBUTION TRANSFORMERS: 10 kVA to 2500 kVA Oil immersed with V.R: 11kV/433V, 33kV/433V, & 433V/433V

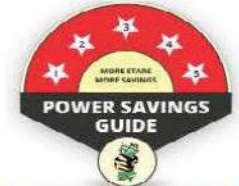


Pg. No. 01-SU

INDIAN STANDARDS INSTITUTION



CM/L No: 8100076711



BUREAU OF ENERGY EFFICIENCY

Google Maps SANKHLA UDYOG



Located in ASIA (India - Rajasthan - Jodhpur)



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Transformer Main Parts

1. Three-limb core
2. LV Winding
3. HV Winding
4. Tapped Winding
5. Tap Leads
6. LV Bushings
7. HV Bushings
8. Clamping Frame
9. On-Load Tap Changer
10. Motor Drive
11. Tank
12. Conservator
13. Radiators



TYPES:

Special Duty Transformers;
Power Transformers;
Distribution Transformers;
Furnace Transformers; &
Servo Stabilizers.

SAILENT FEATURES:

Highly Reliable;
Flawless Designs;
Used in special applications,
Sophisticated facilities;
Star Label & ISI marked;
In-house testing Lab;

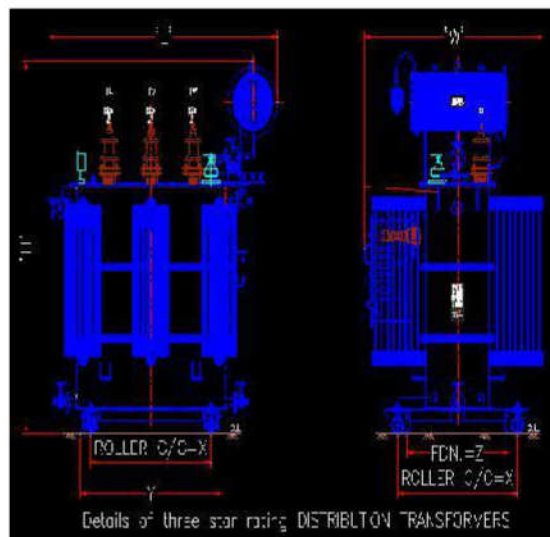
OUR STORY

Performance and perfection ISI mark of Sankhla Udyog is renowned statement of quality with persistence. SU has been achieving higher levels of customer's satisfaction and recognition with every transformer's excellent field performance with a decade over past 25 years of service & code of conduct. Our Expression which

is reflected by peak performances our main goal customer satisfaction and steady growth. These ethics are perceived with the years of experience, faith in quality, hard work and conscious efforts to keep abreast of the technology up-gradation.

Refurbishment Services:

Refurbishment services are available including rewinding of any make / model, up to 10 MVA 33kV Class.



THE PRODUCT

SU Transformer are designed in 3d format drawings & manufactured, tested to high standards. The raw materials are subjected to strict inspection and components are checked at every stage of manufacturing. Every transformer is subjected to rigorous in house tests. Our systematic quality assurance and working methods are guarantee of reliable transformer from SU. The transformers are fully backed by an efficient and prompt after sales service.



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TRANSFORMER FEATURES

PRINCIPAL PARAMETERS:

The Transformer shall be suitable for outdoor installation with three phase, 50 Hz, 11 kV or 33 kV system in which the neutral is effectively earthed & they should be suitable for service with fluctuations in supply voltage up to $\pm 12.5\%$.

Technical Requirements:

CRGO Material (Magnetic Circuit):



At SU the Core is stack/wound type of high grade cold rolled grain oriented-annealed steel lamination having low loss & good grain properties, coated with hot oil proof insulation, bolted together & to the frames firmly to prevent vibration of noise. The core used under our plant is stress relieved by annealing under inert atmosphere if required. The complete design of core ensures permanency of the core losses with continuous working of the transformers with low losses by minimum current as per the rated transformer's magnetic circuit. Over Fluxing density of core is maintained up to 12.5% without injurious heating at full load conditions due to combined effect of Voltage & frequency.

ELECTRIC CIRCUIT (Star/Delta) WINDINGS:

The winding along with insulation forms part of electric circuit of transformer. HV & LV windings manufactured under our observation are wound from Super Enamel covered, Al/Cu conductor Double Paper covered (for 11/.433-250V) distribution transformers, whereas for Power transformers- Triple Paper covered (for 33/11-433V)/foil & cylindrical winding is made for all the ratings as per standard. The insulation used under our surveillance consists of Nomex/Epoxy dotted craft paper. Whereas, at the time of drawing wire/strip at factory, current density for HV and LV is maintained under 2.8 Ampere per sq mm for Cu & 1.6 Ampere per sq mm for Al. Conductor.



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The Axial oil ducts are provided between the cores, LV & HV windings for oil circulation in the transformer for direct cooling of all the conductors by minimizing the hot spot of temperature rise ensuring longevity of the transformers life span. All these are applied in our product range & special requirements made by the customer for special transformers within our limits for making the transformer stressed free under harsh



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conditions due to electrostatic forces, magnetic forces, short circuit conditions & over-voltage under incidence of surges & rest are followed as per the required standard of the consumer where core/coil assembly is securely held in position to avoid any movement under short circuit conditions.



TAPS / TAP CHANGER: (OLTC/OCTC)

Off load tap changer



No tapping is provided for transformers up to 100 kVA unless specified by any customer. SU provides both OLTC (on load tap changer) & OCTC (off circuit tap changer) in the transformer as per the requirement of customer. Taps are to be done on HV winding to Control the Voltage of the transformer. Generally, the following tapping range is provided on the transformer i.e. $\pm 5\%$, $\pm 7\%$ & $\pm 10\%$ in steps of 2.5%

OIL:

The insulating oil is complied with the requirements of IS 335 or BS 148. The specific resistance of oil shall not be less than 2.5×10^{12} ohm-cm at 27°C when tested as per IS 6103. Oil is tested after filtration for check of Break down voltage (BDV) & moisture content before filling. Where at the time of tanking the oil is filled under vacuum & it is also signifies as a coolant to dissipate heat losses without deterioration as an insulation medium.

BASIC INSULATION LEVELS:

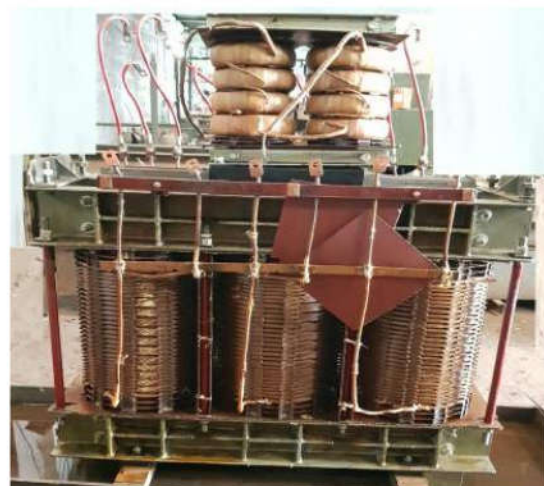
Sl. No.	Volts (kV)	Impulse Volts (kV peak)	Power freq. Volts (kV)
1.	0.433	-	3
2.	11	75 / 95	28
3.	33	170	70

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LOSSES:

SU guarantees individually the no-load loss and load loss without any positive tolerances. Our expertise guarantees the total losses at 50% & 100 % load condition (at rated voltage and frequency and at 75°C).

The maximum allowable losses at rated voltage and rated frequency permitted at 75°C for 11/0.433 kv transformers can be chosen by the utility from the values of 3 star, 4 star or 5 star rating for transformers up to rating of 200 kVA as indicated below:





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Maximum Total Losses Upto 11kV Class Transformers

Sl No.	Rating (kVA)	Impedance (Per cent)	Maximum Total Loss (%)									
			Energy Efficiency Level 1		Energy Efficiency Level 2		Energy Efficiency Level 3		Energy Efficiency Level 4		Energy Efficiency Level 5	
			50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load
			(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	(2)	(3)										
ii	6.3	4.0	52	174	47	158	43	144	41	131	38	119
iii	10	4.5	84	277	75	250	68	229	63	207	58	189
iv	16	4.5	135	440	120	406	108	364	97	331	87	301
vi	25	4.5	159	527	144	487	130	443	117	403	105	366
vii	35	4.5	190	635	175	595	158	541	142	493	125	448
viii	40	4.5	249	834	234	774	202	705	182	642	164	583
xiii	63	4.5	340	1140	306	1050	270	950	243	870	214	791
xiv	100	4.5	475	1650	435	1500	392	1365	352	1242	317	1120
xv	160	4.5	670	2350	670	2100	603	1911	543	1755	488	1582

For transformers of other ratings the following maximum allowable losses at rated voltage and frequency and 75°C-

Maximum Total Losses Upto 11kV Class Transformers

Sl No.	Rating (kVA)	Impedance (Per cent)	Maximum Total Loss (W)									
			Energy Efficiency Level 1		Energy Efficiency Level 2		Energy Efficiency Level 3		Energy Efficiency Level 4		Energy Efficiency Level 5	
			50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load
			(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	(2)	(3)										
i)	250	4.50	980	2030	920	2700	864	2488	811	2293	761	2113
ii)	315	4.50	1022	3100	955	3750	896	2440	829	2164	772	1920
iii)	400	4.50	1225	3450	1150	3530	1080	3214	1013	3102	951	2994
iv)	500	4.50	1516	4390	1430	4100	1354	3906	1282	3727	1215	3554
v)	630	4.50	1806	5390	1745	4850	1637	4438	1536	4061	1441	3717
vi)	800	5.00	2287	6400	2147	5838	2015	5321	1892	4853	1776	4425
vii)	1000	5.00	2790	7700	2520	7000	2400	6354	2310	5785	2170	5250
viii)	1250	5.00	3300	9200	3220	8400	3142	7670	3066	7003	2991	6394
ix)	1600	6.25	4200	11800	3970	11300	3753	10823	3547	10363	3353	9924
x)	2000	6.25	5050	15000	4780	14100	4543	13254	4309	12549	4088	11711
xi)	2500	6.25	6150	18500	5800	17500	5600	16554	5430	15649	5209	14813

TANKS:

The tanks are made of mild steel. All the parts-plates, hosting lugs, shapes, etc are welded from inside & outside of the tank to ensure great mechanical strength & absolute tightness. The radiators are fitted along the sideways around the tank for efficient cooling. Covers are suitably tilted to avoid rainwater. Conservator is mounted on the tank for measuring oil by Gauge due to temperature rise with

marking as -5°C, 35°C, & 90°C. The tanks are provided with Explosion vent above the top mounted cover as a safety factor in case of fire explosion in the tank. For higher rating transformers- inspection cover is also provided for checking inside of the tank without taking core coil assembly out of the tank.

TRANSFORMER AUXILIARIES:

Breather: Vent is also attached along with the oil conservator for non-intake of moisture in the rainy season as well as if gases are formed in tank it dissolves in the attached device for precaution as a safety feature.

Terminal Arrangements: These are either for bare bushings or covered with cable box, as per the requirement of the customer.

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Bucholz relay: These are set to be in a transformer for higher side rating. Its use is to protect against electrical faults developed inside of the transformers accomplished by generation of gases.

Temperature Indicator-

Oil temperature indicator (OTI): It shows the maximum oil temperature at the time of running state on site on normal conditions as well with measuring the correct form of oil at its heating point in case of overload.

Winding Temperature Indicator (WTI):

It is basically used for measuring the temperature of winding where it's being connected to the winding through separate leads for measuring correct results in



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normal conditions as well as at its peak temperature in case if the transformer is working overnight on overload.

Routine Tests (In-house Laboratory):

Winding Ratio- Also known as TTR, it is used for measuring the transformers winding turn ratio.

Insulation resistance- It's basically measured through 'MEGGER' testing where its values are obtained in ohms (Ω), M Ω & G Ω .

Phase Sequence & Vector Group- This test is been taken for checking whether the delta of the transformer is as per the given design for e.g. Dyn¹¹.

Open-circuit test- Also known as No-load test of the transformer, in this test voltage is supplied @ 50 Hz on the primary side of the transformer for measuring the core losses with current reading of the transformer for checking core quality & primary winding whereas it is also been taken @ 112.5% of the Hz for concern of current measurement.

Short-circuit test- This is the major test for measuring the voltage consumed by the transformer by shorting the primary (LV) side & rated voltage is supplied on the secondary side of the transformer (HV side) for measuring losses @ 50% & 100% of the transformer.

Magnetic balance/current test- This test is compulsory for measuring the core strength & its life span by conducting on the transformer for better efficiency of core losses & current.

Induced Over voltage withstand test:

Also known to be DVDF (Double voltage-Double Frequency), this test is conducted on the transformer by supplying the voltage at primary side & where the voltage (433) & frequency (50 Hz) are doubled for appropriate voltage for measuring the insulation level of the transformer within a minute for better results.

Separate Source Voltage withstand test:

This test is conducted on the secondary side of the transformer where the primary side is shorted (earthed) & the test is conducted by supplying 28kV in distribution transformer for a minute for checking the displacement of the core coil assembly & inside tank clearance. Same as for Power transformer 55kV is supplied for a minute.

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OUR POLICY:

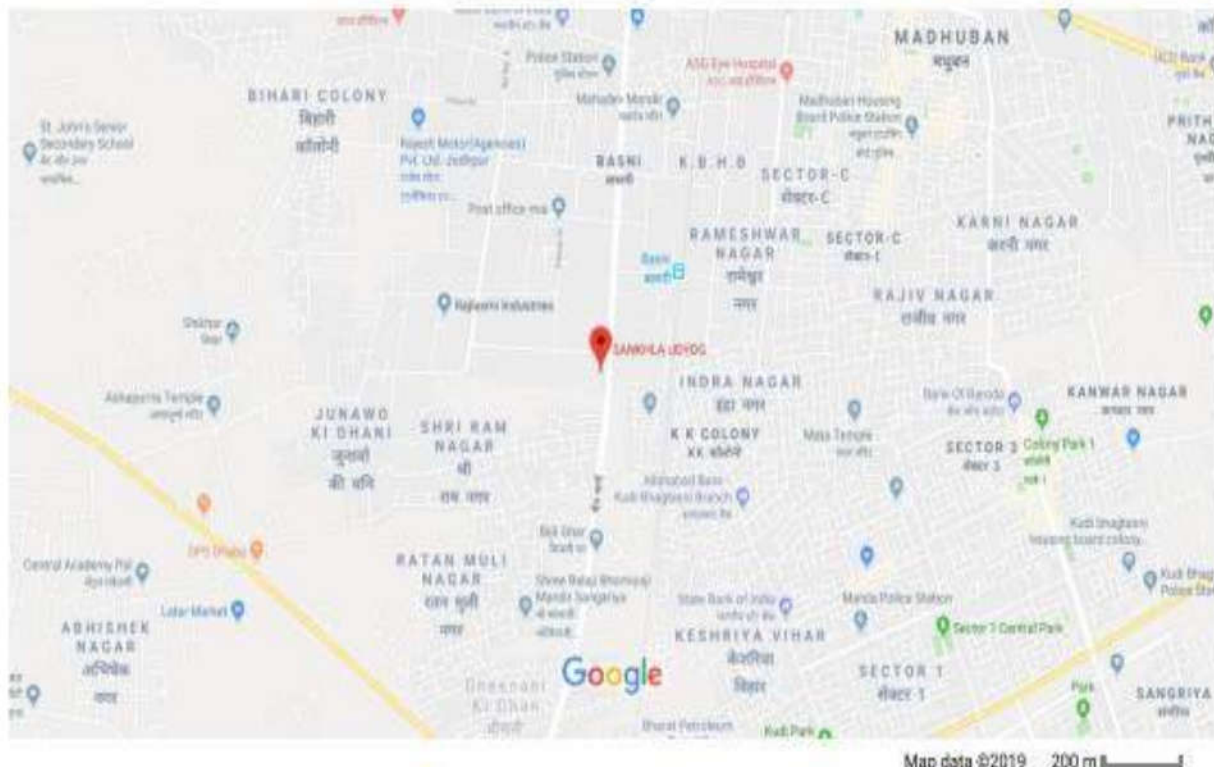
Our main criterion is the satisfaction of clients & endeavour to our work ethics by giving the best to our customers along with quality of the product as specified as per the requirement at competitive prices in time for the near future.

We motivate & encourage all our employees, contractors and suppliers to prevent defects by our judgement.

We are highly committed to quality assurance in our products & services for a vast decade since opening of our company since 1979.



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PLUS CODE VIA GOOGLE: 6294+RM Basni, Jodhpur, Rajasthan.



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Message by the honourable Director of the Company:



Mr. Narpat Singh.

Director of Sankhla Udyog & PR Sankhla Industries;

Prop. Of PR Prestress & Bhawani Stampings

SU reforms in the Power & Distribution sector which have got a big boost with the implementation of the Accelerated Power Development and Reform programme of GOI. Distribution transformers form a very vital and substantial part in the delivery supply chain and large numbers of the transformers.

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The Distribution utilities have generally been procuring transformers with maximum allowable losses as per IS1180. With the advent of more efficient materials and improvement in technology, it is now possible to have much more efficient and better quality transformers at reasonable prices. Standard specifications for three phase outdoor oil filled Distribution Transformers have been prepared by the Central Electricity Authority to act as Guidelines for the utilities for selection and procurement of energy efficient Transformers. Thus, recognising the importance of standardization of specifications of the distribution transformer for procurement of quality transformers, the Central Electricity Authority has formulated technical Specifications for Three phase oil filled outdoor type Power & Distribution transformers that is a good step for further improving power generation in electricity board & MES sectors around span over India. The near future is here for better India.

The utilities under the current programmes held by the Indian government for procuring the SSI units as well other companies are a good example as with their own resources to meet the GOI mission of Power for all by 2012.

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MOBILE: +91- 9414071719 (Mr. Narpat Singh)

MOBILE: +91- 9784429542 (Mr. Arvind Singh)



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Maximum Total Losses Upto 11kV Class Transformers

Sl No.	Rating (kVA)	Impedance (Per cent)	Maximum Total Loss (W)									
			Energy Efficiency Level 1		Energy Efficiency Level 2		Energy Efficiency Level 3		Energy Efficiency Level 4		Energy Efficiency Level 5	
			50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
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ii)	10	4.5	84	277	75	250	68	229	63	207	58	189
iii)	16	4.5	135	440	120	400	108	364	97	331	87	301
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v)	25	4.5	190	635	175	595	158	541	142	493	128	448
vi)	40	4.5	249	834	224	775	202	705	182	642	164	583
vii)	63	4.5	340	1140	300	1050	270	956	243	870	219	791
viii)	100	4.5	475	1650	435	1500	392	1365	352	1242	317	1130
ix)	160	4.5	670	1950	570	1700	513	1547	462	1408	416	1281
x)	200	4.5	780	2300	670	2100	603	1911	543	1739	488	1582

For transformers of other ratings the following maximum allowable losses at rated voltage and frequency and 75°C- Pg.No.09-SU

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Sl No.	Rating (kVA)	Impedance (Per cent)	Maximum Total Loss (W)									
			Energy Efficiency Level 1		Energy Efficiency Level 2		Energy Efficiency Level 3		Energy Efficiency Level 4		Energy Efficiency Level 5	
			50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load	50 % Load	100 % Load
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
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vii)	1 000	5.00	2790	7700	2620	7000	2460	6364	2310	5785	2170	5259
viii)	1 250	5.00	3300	9200	3220	8400	4142	7670	3066	7003	2991	6394
ix)	1 600	6.25	4200	11800	3970	11300	3753	10821	3547	10363	3353	9924
x)	2 000	6.25	5050	15000	4790	14100	4543	13254	4309	12459	4088	11711
xi)	2 500	6.25	6150	18500	5900	17500	5660	16554	5430	15659	5209	14813



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PCC POLE PRODUCT ENCLOSURE

Concrete, the basic ingredient in our products is a construction material that consists of cement, aggregate (generally gravel and sand) and water.

Concrete solidifies and hardens after mixing and placement due to a chemical process known as hydration. The water reacts with the cement, which bonds the other components together, eventually creating a stone-like material.

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PCC Poles are essentially made of concrete which are inevitably less costly and more economically maintainable than the conventional steel poles. PCC poles were one of the first ventures of our company since from 1979 and we are the leading manufacturers in Northern India catering to the states of Gujarat, Rajasthan, Odisha, Maharashtra, and Delhi-NCR.

The company has attained specialisation in the production of PCC Poles having over 40 years of experience in the same and is well equipped with the standardized plant and machinery.

It offers a wide variety of poles which includes the following:

Codes and standards-

All items of work under this contract shall, unless otherwise specified elsewhere in the contract, conform to the latest revision and / or replacements of relevant Indian Standard specification and code of practices. The works under the contract comply with the relevant provisions made in the following Indian Standards or the latest versions thereof.

i) IS: 1678-1998 Specification for prestressed concrete poles for overhead power tractions & telecommunication lines.

ii) IS: 2905-1989 Methods of test for concrete poles for overhead power and telecommunication lines.



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JdVVNL & MES Discoms specifications-

Size	Specifications	
9.0 M long 200 Kg	TOP (mm)	BOTTOM (mm)
	145 x 114	300 x 114
9.0 M long 400 Kg	100 x 225	100 x 395
11.0 M long PCC Poles	152 x 180	152 x 357
9.0 M long 200 Kg	102 x 172	102 x 279



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By which these poles are been manufactured in our works time to time, & may be customized as per the requirements of our customers depending the possibility by our engineer.

Aggregate (coarse or fine): Aggregate (coarse or fine) as to be used in manufacture of PCC poles should conform to IS: 383-1970. They shall be hard, strong, dense, durable, clear and free from veins and adhering coating and free from injurious amount of disintegrated pieces, alkali, vegetable matters and other deleterious substances.

Cement: The cement used in the manufacture of pre-stressed concrete poles shall be Ordinary Portland Cement conforming to IS: 8112 or IS: 12269. Cement shall be stored at site in well covered sheds in such a manner as to prevent deterioration due to moisture or due to intrusion of foreign matters.

H.T. Wire: H.T. wire of diameter 4 mm. having a minimum ultimate tensile strength of 17500 kg/cm² shall be used as per approved drawing for manufacture of the PCC poles.

Water: Water should be free from chlorides, sulphates, other salts and organic matter. Potable water will be generally suitable.



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: 91-291-2656831

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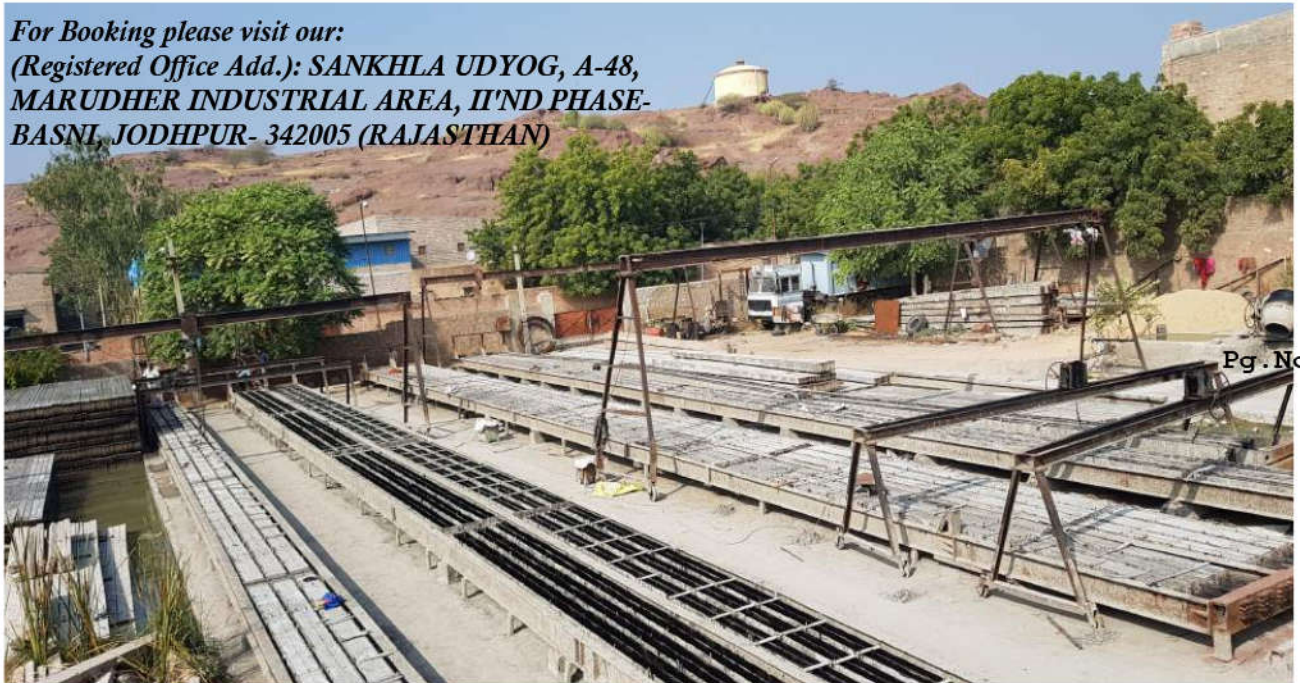
Email : info@sankhlaudyog.com

Curing of Poles- Curing of poles shall be commenced after setting of the concrete. The poles preferably are taken to curing vats carefully (so that no pole is damaged) for continuous curing under cold water for 25 days or so to achieve the desired strength. Separate eyehooks are provided for handling, lifting and transport, one each at a distance at the end of the pole. If steam curing is used, it must be done under careful control and special precaution.

Calibration- The instruments / equipment required for Testing shall have valid calibration certificate issued by National Test House or equivalent Government Laboratory.

For Booking please visit our:

*(Registered Office Add.): SANKHLA UDYOG, A-48,
MARUDHER INDUSTRIAL AREA, IIND PHASE-
BASNI, JODHPUR- 342005 (RAJASTHAN)*



Pg. No. 12-SU





Pg.No.13-SU



**QUALITY
PRICE
SERVICE**

POLES

**PRODUCT
CATALOGUE**



THE COMPANY PROFILE

SANKHLA UDYOG

We, at SU, incepted in the year 1979, and 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.

SANKHLA UDYOG, a Jodhpur- Rajasthan (India) based firm, offering a variety of Lighting Poles, Pcc Poles & Distribution Transformers. The variety of Lighting Poles that we offer includes Tubular Poles (For Street Lighting & Transmition Lines), Octagonal Poles, M.S/G.I. Pipes, Electric Poles, PCC Poles etc. Our organization is showing a substantial growth since the time of its establishment in the year 2012. We are flourishing at a fast pace under the due guidance of our knowledgeable Chairman, **Mr. Narpat Singh**. 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.



OCTAGONAL POLE

SU 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.

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.



Sankhla Udyog 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 Sankhla Udyog 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

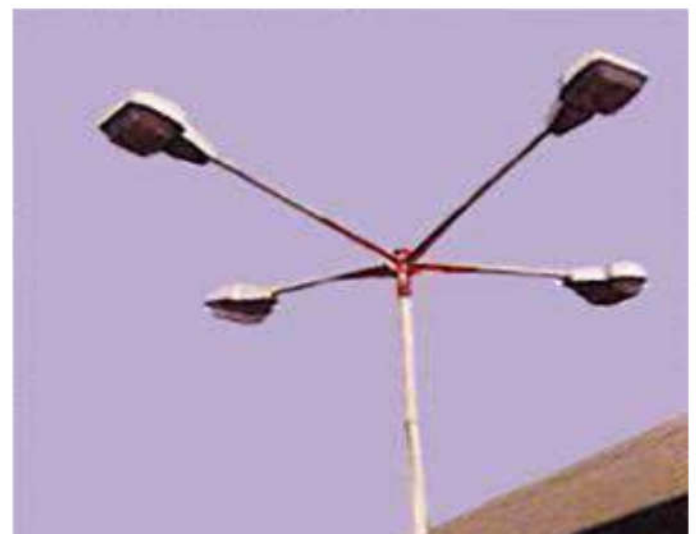
The Octagonal Poles are designed to withstand maximum wind speed as specified in IS 875. The top loading area and the weight of fixtures are considered while calculating the maximum deflection of the pole and to meet the requirement of BS: 5649 Part VI 1982.

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 superior & qualified welders.

Door opening

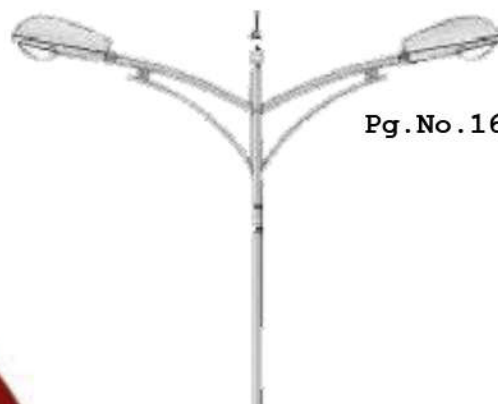
The octagonal Poles have a door of approximate 500 mm length at the elevation of 500 mm from the Base plate. The door is vandal resistant and weather proof to ensure safety of internal connections. The door is flush with the exterior surface and has suitable locking arrangement. There is also a suitable arrangement for earthling. 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	25 mm	25 mm	25 mm



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SWAGED POLE

SU 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 11 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 SU 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 SU 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)

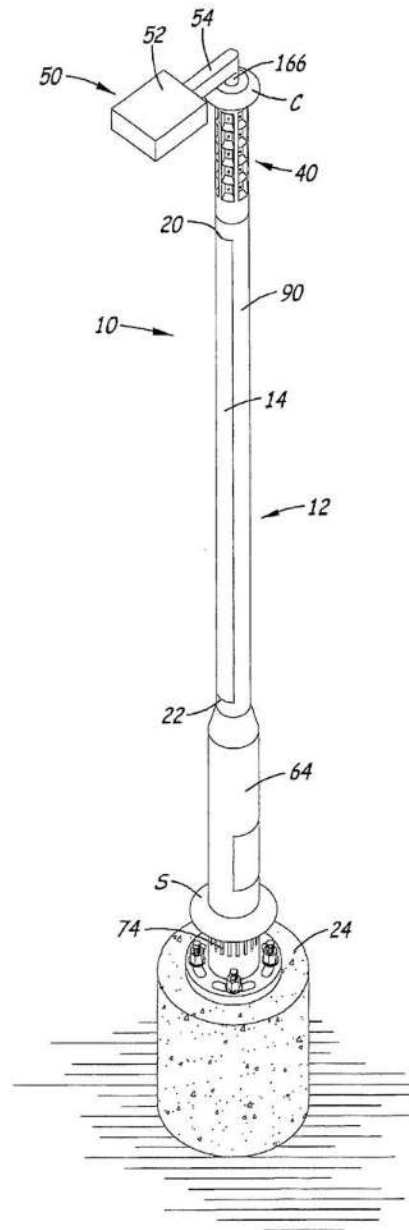


Fig. 1

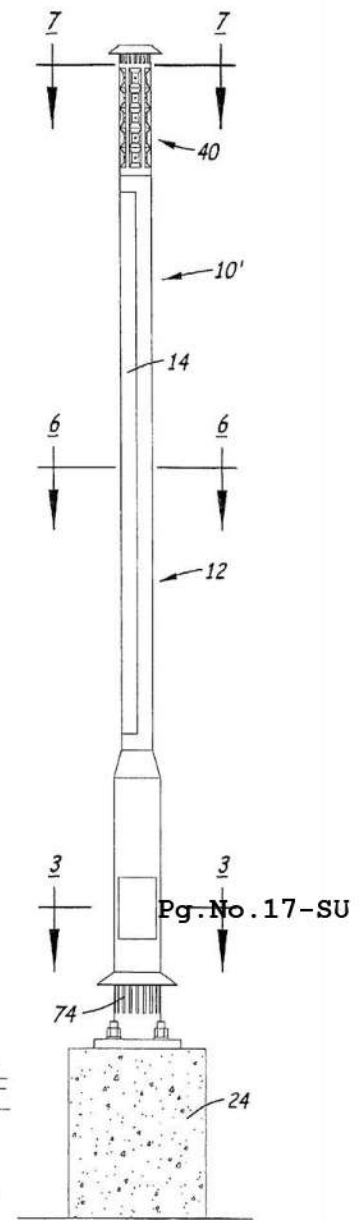


Fig. 2

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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

Pg. No. 19-SU

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 SU leader on the world for such pole typology automatic production line.



SU 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.

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



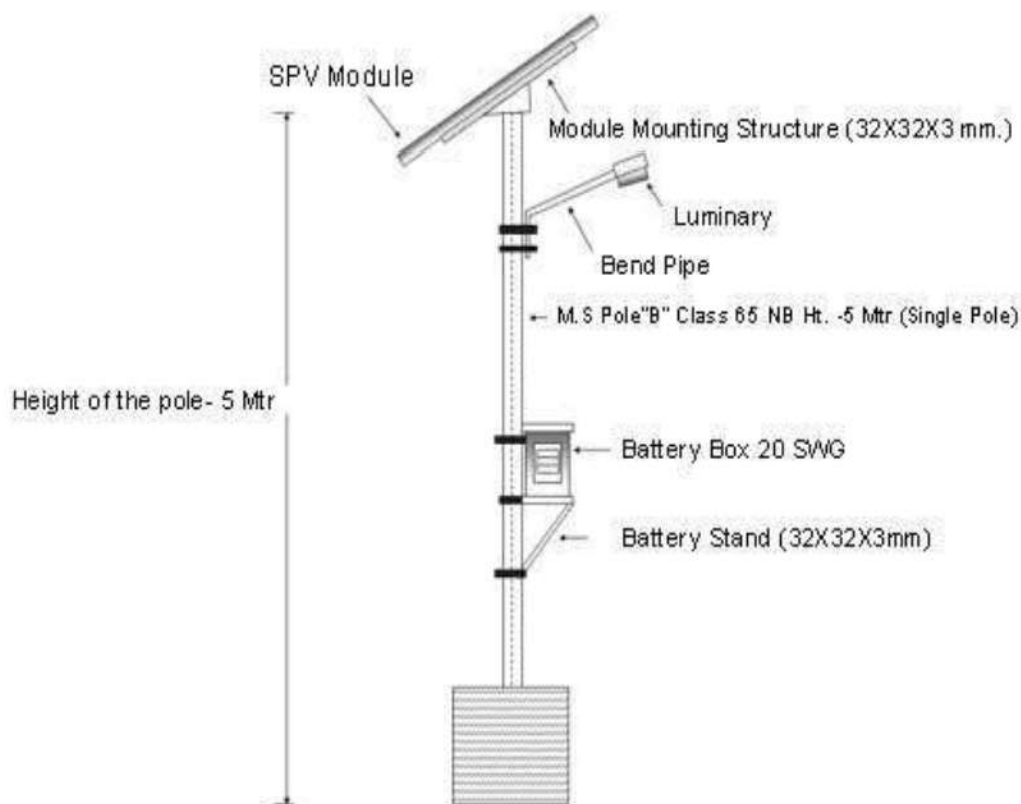
SOLAR LIGHT POLE

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

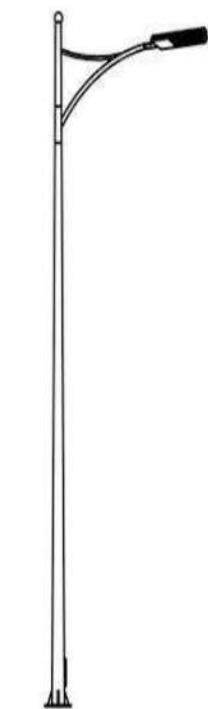
To cater to the rising demands and requirements of our clients, we come with superlative quality Street Light Pole. Manufactured using advanced technology, the offered product is assured of premium quality. Easy to install and to maintain, the entire range of street light poles offered by us has amassed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



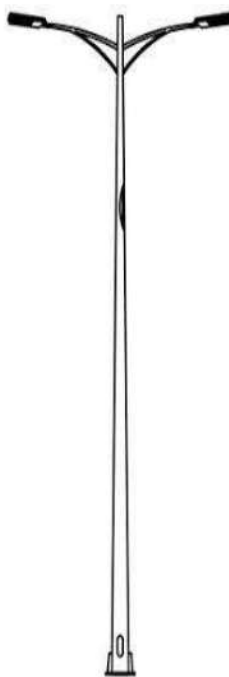
Pg.No.21-SU



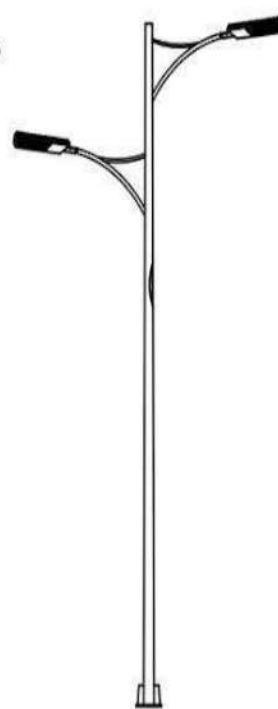
SPECIFICATIONS	LED street lighting				CFL street lighting	
	200LS	300LS	400LS	750LT	350CS	600CS
Type of lamp	LED	LED	LED	LED	CFL	CFL
Lamp (WxQty.)	7x1	12x1	15x1	30x1	11x1	11x2
PV array wattage (WpxQty.)	35x1	65x1	80x1	75x2	75x1	60x2
Battery (Ah)	40	60	75	150	75	100
Pole height (m)	4	4	4	6	4	4
Light output (lumens)	630	1080	1350	2700	900	1800
Recommended hours of charging at full sun shine (1kW/m ² 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



Single Arm



Double Arms



Dislocation Arms





Pg.No. 24-SU



Reg. Add. : A-48, M.I.A. BASNI IIND PHASE, JODHPUR- 342005, RAJASTHAN, INDIA.
Fabric. Add. : E-93/94, RIICO INDUSTRIAL AREA, MANDORE, JODHPUR – 342304. RAJASTHAN, INDIA.

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