

# INCANDESCENT LAMPS.

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AN Electric Incandescent Lamp is (to use the words of Edison's Master Patent) a combination of a Carbon filament within a receiver made entirely of glass, into which the wires pass, and from which receiver air is exhausted.

If any conductor of Electricity offers resistance to the current, heat is produced in such conductor. The resistance offered to the current in passing through the Carbon filament of an Incandescent Lamp is very great, consequently the filament is heated to white heat, emitting light. As air is exhausted from the glass receiver, combustion of the Carbon filament cannot take place.

The light of an Incandescent Lamp is measured in standard candle power, and the more light a lamp gives at a given current, the more efficient it is, provided the better light does not effect the durability of the lamp.

The most general type of lamp in use is the 100 volt 16 c.p. To produce this 16 c.p. a current of from .4 to .7 ampere is required at a pressure of 100 volts, suppose the current now to be .6, then the lamp requires 100 times .6 = 60 watts, or  $3\frac{3}{4}$  watts per unit, and such a lamp ought to have a life of at least 1,500 hours. The lamps supplied in England, which, owing to Patent rights, can only be made by one firm (until 10th November, 1893), have a life as above, and take about four watts per candle power. It is asserted by the Patentees that a lamp made of higher efficiency must necessarily have a shorter life, and whatever may be gained in current will be lost in durability. We are not of this opinion, and believe that Incandescent Lamps can be made of much higher efficiency in watts per candle power without decreasing or shortening the life. If lamps are made with 3 watts per C.P. or even  $2\frac{1}{2}$  watts (with perhaps a somewhat shortened life) this would have a powerful and beneficial influence on the spread of Electric Lighting, as the cost would thereby be considerably reduced, perhaps 20 to 30 per cent.

In isolated plant installations it is most important to know the quantity of current consumed by each lamp in order to get at the size of the dynamo, accumulators and wires required for the Installation. For instance, if 50 lamps are required at 16 c.p. taking .6 amperes and 30 lamps at 8 c.p. taking .35 amperes, the total current required is 40.5 amperes, and the installation must be carried out accordingly.

We take this opportunity of informing our customers that we are now making preparations for the erection of a

## LARGE FACTORY for the production of INCANDESCENT LAMPS IN ENGLAND.

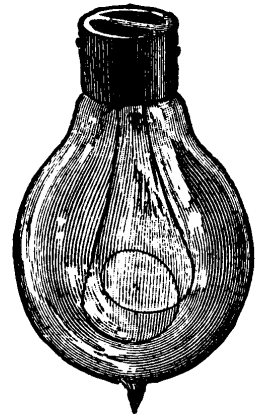
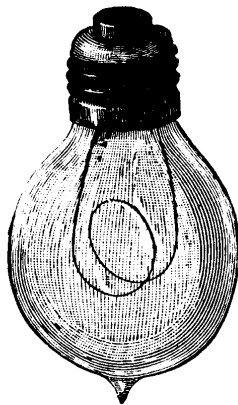
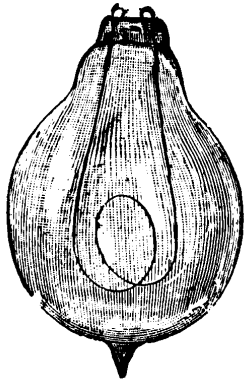
and have already engaged the services of an engineer who has had the widest possible experience, having erected and managed a Factory in England before the establishment of the monopoly, and has since then managed two other factories on the Continent. It will be our aim, immediately after the expiration of Edison's patents, to supply lamps of the highest possible efficiency, at a price no higher than the prices caused by the competition arising after the Expiration of the Patents in November, 1893.

We particularly wish our friends to note this important announcement, and are now quite ready to book orders.

For Mountings of Lamps see page 48 and 49.

# INCANDESCENT LAMPS.

(Edison-Swan Patent).



**B. L.**

**E. S.**

**B. C.**

Lamp fitted with Bottom Loop.

Lamp fitted with Edison Screw.

Lamp fitted with Brass Collar.

For Lamps supplied in the English Market we act as Agents for the Edison-Swan Co.

These Lamps are supplied in the same condition as received from the Company's works, under the conditions published by that Company. We only hold ourselves responsible for electrical or other faults admitted by the Company.

The Edison Lamp is made with a screw to fit into an Acorn or Key Socket, in five different shapes, viz. :—

**B. L.**, with Bottom Loops.

**B. C.**, with Brass Collars, to fit Standard Holders.

**S. C.**, with Side Collars, for side attachments.

**C. C.**, with Central Contact.

**E. S.**, with Screw, to fit Edison Socket.

Obscured or Frosted Lamps are charged 6d. extra.

Coloured or Tinted do. 6d. extra.

Half Silvered do. 1/- extra.

When ordering Lamps it is important to state which form of fitting is required.

## PRICES OF STANDARD SIZE LAMPS. EDISON-SWAN LAMPS.

	Nominal Candle Power.	Standard Voltages.	Limit of E.M.F.	Amperes at E.M.F. of Stock Sizes.				PRICE.
				50 Volts.	65 Volts.	80 Volts.	100 Volts.	
Ordinary Lamps.	1	2 to 8	8	...	...	...	...	s. d. 3 9
	2½	5 „ 8	...	...	...	...	...	3 9
	2½	9 „ 25	52	...	...	...	...	3 9
	5	10 „ 20	...	...	...	...	...	3 9
	5	21 „ 35	105	...	...	...	...	3 9
	8	15 „ 25	...	...	...	...	...	3 9
	8	26 „ 40	...	...	...	...	...	3 9
	8	41 „ 55	120	...	...	...	...	3 9
	16	30 „ 40	...	...	...	...	...	3 9
	16	41 „ 105	160	...	...	...	...	3 9
	25	45 „ 105	120	...	...	...	...	4 0
	32	55 „ 105	120	...	...	...	...	4 0
50	80 „ 105	120	...	...	...	...	5 0	
Long Duration HIGH G.P. Lamps.	100	80 „ 105	120	A.	A.	A.	A.	7 6
	150	80 „ 105	120	7.5	5.5	...	...	
	200	80 „ 105	120	10	7.5	6.5	5	10 0
	300	80 „ 105	120	15	11.5	9.5	7.5	12 6
	400	80 „ 105	120	...	15	12.5	10	
	500	80 „ 105	120	...	...	15	12.5	17 6
	600	80 „ 105	120	...	...	...	15	
	800	80 „ 105	120	...	...	...	20	
1000	80 „ 105	120	...	...	...	25	30 0	
1200	80 „ 105	...	...	...	...	...		
1500	80 „ 105	...	...	...	...	...		
Miniature & Surgical Lamps.		2 „ 8	8	...	...	...	...	3 9

# STELLA INCANDESCENT LAMPS.

*Our Manufacture.*

Supplied: For **Export only** until **November 10th, 1893**, after which date they will also be supplied to users in Great Britain at the following prices:—

Voltage.	Candle Power.	Price.	Extra for
Any Voltage up to 100 Volts.	5—32 c.p.	2/0	Frosting 3d.
Do.	50 c.p.	2/9	Colouring 6d.
Do.	100 c.p.	3/6	

The **Stella** Lamps are Stocked at Hamburg or Antwerp; after **November, 1893**, at our London Warehouses, in the usual mountings, B.L. (Bottom Loops),

B.C. (Brass Collars),

E.S. (Edison Screw);

but if ordered specially will also be provided at the same prices with **Siemens, Sawyer-Man, Thomson-Houston, Ganz** or **Victoria Sockets**.

Standard Candle Powers are 8 c.p., 16 c.p., 32 c.p.

## Particulars of the **Stella** Incandescent Lamps.

C.P.	4	6	6	5	8	10	10	16	16	16	20	20	20	25	25	25	32	32	32	50	100
Potential in Volts. }	20	35	15	100	50	65	100	50	65	100	50	65	100	50	65	100	50	65	100	100	100
Current in Amps. }	0.70	0.57	1.04	0.20	0.5	0.48	0.35	1.0	0.77	0.5	1.24	0.95	0.62	1.56	1.20	0.72	2.0	1.54	1.0	1.45	2.8
Resistance (hot) in Ohms. }	29	61	14.4	500	100	135	303	50	84	200	40	68	161	32	54	128	25	42	100	69	36
Power required in Watts. }	14	20	15.6	20	25	31	33	50	50	50	62	62	62	78	78	78	100	100	100	145	280
Watts per C.P. }	3.5	3.3	2.6	4	3.1	3.3	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	2.9	2.8