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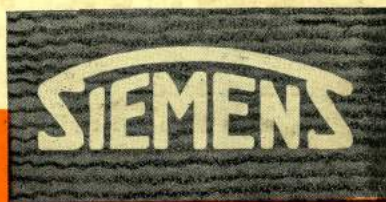
02



# SIERAY

## ELECTRIC DISCHARGE LAMPS

MADE IN ENGLAND BY



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We do not hold ourselves responsible for any damage in transit except in cases where the goods are forwarded carriage paid and then ONLY if the damage IS REPORTED to us WITHIN THREE DAYS of the receipt of goods.

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**THE PRICES IN THIS LIST ARE APPLICABLE IN GREAT BRITAIN & N. IRELAND ONLY.**

# SIERAY

## ELECTRIC DISCHARGE LAMPS

### Siemens Electric Lamps and Supplies Ltd.

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CENTRAL 2332 (14 LINES).

Telegrams:  
"SIEMOTOR, CENT, LONDON."

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	Telephone.	Telegraphic Address
BELFAST:	20437 Belfast	"Siemens, Belfast"
BIRMINGHAM:	0072 & 0073 Midland	"Siemens, Birmingham"
BRISTOL:	23545 Bristol	"Siemens, Bristol"
CARDIFF:	7128 & 7129 Cardiff	"Siemens, Cardiff"
DUBLIN:	21354 & 21355 Dublin	"Siemens, Dublin"
GLASGOW:	2820 & 2821 Central	"Siemens, Glasgow"
LEEDS:	27395 Leeds	"Siemens, Leeds"
LIVERPOOL:	2264 & 5154 Central	"Siemens, Liverpool"
MANCHESTER:	7451 & 7452 Blackfriars	"Siemens, Manchester"
NEWCASTLE-ON-TYNE:	20641 Newcastle	"Siemens, Newcastle-on-Tyne"
NOTTINGHAM:	3110 Nottingham	"Siemens, Nottingham"
SHEFFIELD:	25259 Sheffield	"Siemens, Sheffield"
SOUTHAMPTON:	3803 Southampton	"Siemens, Southampton"

LAMPWORKS:  
PRESTON—LANCS  
DALSTON—LONDON



A PART OF **SIEMENS**  
LAMP WORKS, PRESTON,  
WHERE "SIERAY" LAMPS WERE  
DEVELOPED.

**SIEMENS**



# ELECTRIC DISCHARGE LAMPS

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## FOREWORD

In preceding editions of our Sieray Brochure we have outlined the history of the development of Sieray Lamps, commencing with the introduction of the 400 Watt Sieray 'H' Lamp of the medium pressure Mercury Discharge Type, through the Sieray 'W' or Colour Modified Lamp to the "Sieray-Dual" Lamp.

A year ago we introduced a 150 Watt Sieray 'H' Lamp, followed by a 300 Watt "Sieray-Dual" Lamp, whilst in September 1936 we marketed a 500 Watt "Sieray-Dual" Lamp for use on D.C. supplies, thus introducing the first practicable Electric Discharge Lamp for use by those consumers whose supply is direct current.

From the earliest days of Electric Discharge Lighting, research in this field has been prosecuted continuously in our Preston Laboratories, and further fruits of this intensive research are now offered for your consideration in the form of Sieray 'Q-H' Type Lamps, which are described in the ensuing pages.

The introduction of these low wattage Sieray Lamps considerably broadens the range of Sieray Electric Discharge Lamps, and we can now offer Sieray Lamps of one type or another suitable for almost every lighting situation and purpose.

# SIEMENS



## DUAL LAMP

The "SIERAY-DUAL" Lamp differs from other types of Electric Discharge Lamp in two important respects :—

- (1) NO CHOKE or CONDENSER is necessary for its operation.
- (2) The light emitted is of a pleasing colour.

With the elimination of the Choke and Condenser no alteration to existing wiring is necessary and the "Sieray-Dual" Lamp can be screwed into the ordinary Goliath Holder to operate direct off the Supply Mains.

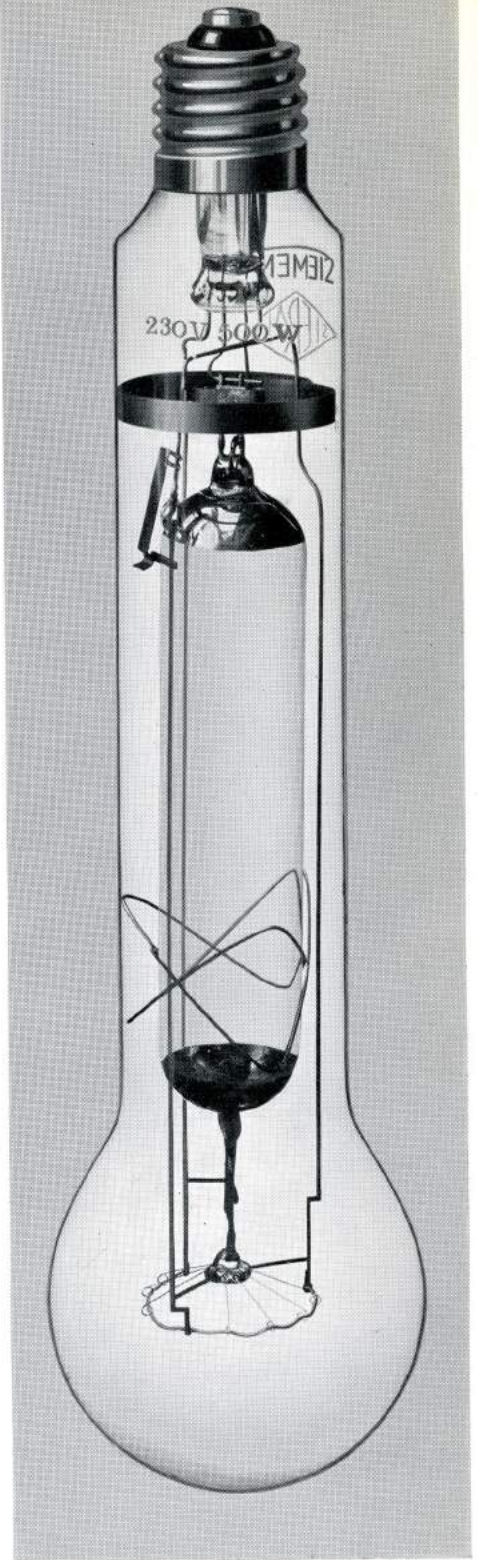
### DESCRIPTION OF THE LAMP.

The "Sieray-Dual" Lamp consists essentially of a "Sieray" Mercury Vapour Discharge Lamp connected in series with a Tungsten Filament, the normal Tubular Outer Bulb of the Discharge Lamp being expanded at its lower end to accommodate the filament. The Tungsten Filament serves not only to stabilize the arc of the discharge, thus replacing the usual choke coil, but, operating at its normal efficiency, also acts as a supplementary light source emitting light in which a considerable proportion of red rays is present. The deficiency in red rays from the Discharge Tube is thereby rectified, the resultant light being of a very pleasing colour.

Undue overloading of the Tungsten Filament at switching on is obviated by the provision of an auxiliary filament which is automatically switched out of circuit by means of a thermal cut-out at a pre-determined time in the run-up characteristic of the discharge tube.

### ELIMINATION OF THE CONDENSER.

The arc of the discharge being stabilized by a resistance (the Tungsten Filament) the power factor of the circuit is not upset as with choke control, consequently the use of a Condenser in the circuit is not required, the power factor of the "Sieray-Dual" Lamp being approximately 0.95.





## “SIERAY-DUAL” LAMP—*continued.*

### OPERATION.

Immediately the “Sieray-Dual” Lamp is switched on, a considerable amount of illumination is obtained and after about 10 minutes the lamp reaches its full luminous output, with both the filament and discharge operating at their correct efficiencies.

These lamps must only be installed Cap-up in the vertical position.

### CONSUMPTION.

The “Sieray-Dual” Lamp is marketed in sizes with total consumptions rated at 300 watts and 500 watts in the case of A.C. lamps and 500 watts for use on D.C. supplies.

### LIGHT OUTPUT.

The Electric Discharge Tubes and Tungsten filaments incorporated in the lamps operate at the normal efficiencies of their respective ratings.

The bulk of the light is emitted from the highly efficient Discharge Tube, whilst the light from the Tungsten filament is usefully employed not only to rectify the shortage of red rays in the light emitted from the Discharge Tube, but also to build up the total lumens output of the lamp.

The 300 w. “Sieray-Dual” Lamp gives approximately  $33\frac{1}{3}\%$  more light than does a 300 w. Gasfilled Lamp and the 500 w. “Sieray-Dual” Lamp approximately 50% more than a 500 w. Gasfilled Lamp.

TYPE.	CURRENT.	WATTS.	CAP.	VOLTS.	LIST PRICE.
“SIERAY-DUAL”	A.C.	300	G.E.S.	200/260	42/6
“SIERAY-DUAL”	A.C.	500	G.E.S.	200/260	50/-
“SIERAY-DUAL”	D.C.	500	G.E.S.	230/260	50/-

STATE EXACT VOLTAGE WHEN ORDERING.

# SIEMENS



## "Q.H." (H.P. MERCURY) TYPE LAMPS

It has been realised from the first that the efficiency of an electric discharge lamp is related to the pressure of the mercury and therefore to the temperature of the inner tube of the lamp, but the maximum safe working temperature of the hard glass composing that inner tube ~~has~~ has hitherto limited the mercury pressure.

This difficulty has now been surmounted by the use of a special grade of quartz which has made possible the marketing of low wattage Sieray Lamps, with very high efficiencies for use on A.C. supplies.

### DESCRIPTION OF THE LAMPS.

Sieray 'Q.H.' type Lamps consist of quartz inner tubes enclosed in pearl finished outer bulbs of the type familiarly used for Tungsten Filament Lamps.

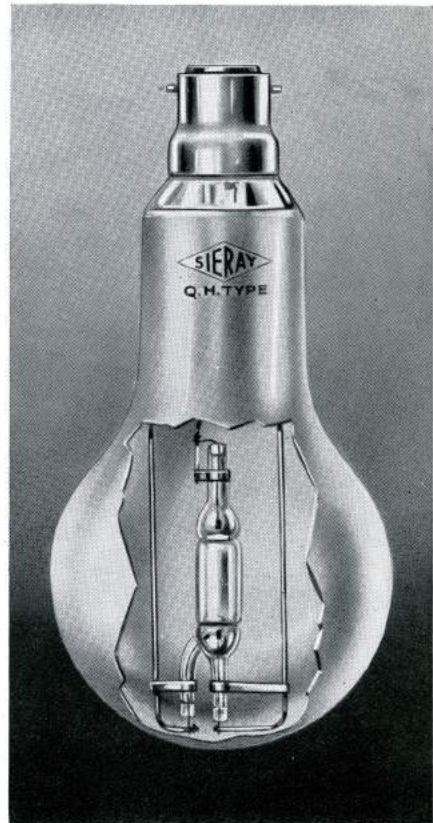
The Arc Light Sources are short and very concentrated as compared with those of the well-known types of Sieray Lamps marketed previously.

This concentration of the light source introduces a number of advantages:—

- (1) The time taken by the lamp to reach full luminous output is shortened considerably.
- (2) The cooling time, after switching off, and consequently the lapse of time before re-striking can take place, are considerably reduced.
- (3) The lamps can be used effectively in standard types of fittings designed for use with Gasfilled Lamps.

Sieray "Q.H." Lamps can be burnt in any position.

As these lamps require a choke in the circuit on which they operate they are fitted with a special 3-pin Bayonet Cap (see diagram 11, page 12) to preclude accidental insertion into a holder wired for Tungsten filament lamps.





## SIERAY "Q.H." (H.P. MERCURY) TYPE LAMPS—*contd.*

### OPERATION.

In general the operation of Sieray 'Q.H.' type lamps is similar to that of Sieray 'H' Lamps, the use of choke coils being necessary for current limiting purposes and Condensers for Power Factor Rectification being normally required.

Sieray Choke Coils for use with these lamps are of the tapped type, as illustrated on page 10, and we would draw special attention to the neat form of terminal block which ensures easy wiring, whilst the terminal screws are sunk safely below the surface of the ebonite block.

The capacity of the Condenser for effective Power Factor Rectification depends on the supply voltage and our recommendations in this respect are given in the Table on page 11.

### COLOUR OF THE LIGHT.

The higher working pressure of Sieray 'Q.H.' Lamps leads to their emitting light with a spectrum of a more continuous nature than that of the standard type of medium pressure mercury lamp. A small proportion of red rays is present and consequently the colour definition is slightly improved, but in the main the light quality is that of standard medium pressure mercury electric discharge lamps.

### CONSUMPTION.

Sieray Lamps of the 'Q.H.' Type are available in two sizes, with consumptions of 80 watts and 125 watts respectively, for use on A.C. mains of 200/260 volts.

### EFFICIENCY AND PRICE.

The 80 watt and 125 watt Sieray 'Q.H.' Lamps have luminous outputs that compare favourably with those of 200 watt and 300 watt Tungsten Filament Gasfilled Lamps respectively.

TYPE	WATTS.	VOLTS.	INITIAL LUMENS OUTPUT.	LIST PRICE.
SIERAY Q.H.	80	200/260 } STATE EXACT VOLTAGE WHEN ORDERING	3040	30/-
SIERAY Q.H.	125		5000	35/-

Supplied only with 3-pin Bayonet Caps.





## TYPE 'H' AND TYPE 'W'

The Standard form of Sieray Lamp is manufactured in two types, viz., the Sieray 'H' and Sieray 'W' Type, designed to operate on A.C. Supply Mains of 200 to 260 Volts.

### TYPE 'H'.

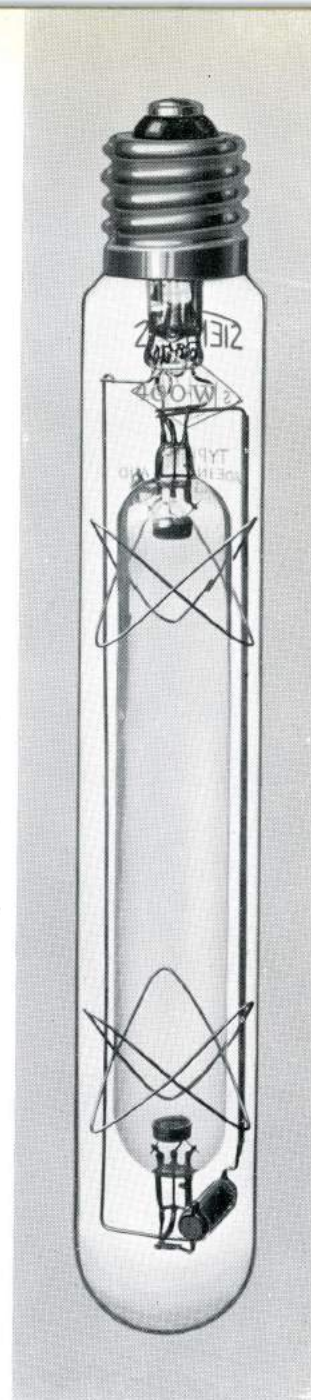
The Sieray 'H' Lamp is of the well known and widely used Medium Pressure Mercury Type with the high efficiency of that type of lamp.

This type can be supplied in 150 watt, 250 watt and 400 watt sizes with the initial luminous outputs shewn in the following table.

### TYPE 'W'.

The principal feature of this lamp lies in the quality of its light, which shows a marked improvement over that of the ordinary Medium Pressure Mercury Type Discharge Lamp. This improved colour is obtained by the addition of certain metals to the mercury contained in the Tube. The proportions and vapour pressures of these metals are so arranged as to make their colours complementary to those emitted by mercury vapour, the resultant quality of the light being greatly improved.

The "Sieray" 'W' Lamp is supplied only in the 400 watt size.



TYPE.	WATTS.	CAP.	VOLTS.	INITIAL LUMENS OUTPUT.	LIST PRICE.
<b>SIERAY 'H'</b>	<b>150</b>	<b>E.S.</b>	<b>200/260</b> STATE EXACT VOLTAGE WHEN ORDERING.	<b>4,800</b>	<b>35/-</b>
<b>SIERAY 'H'</b>	<b>250</b>	<b>G.E.S.</b>		<b>9,000</b>	<b>37/6</b>
<b>SIERAY 'H'</b>	<b>400</b>	<b>G.E.S.</b>		<b>18,000</b>	<b>40/-</b>
<b>SIERAY 'W'</b>	<b>400</b>	<b>G.E.S.</b>		<b>14,800</b>	<b>40/-</b>



## SIERAY TYPE 'H' AND TYPE 'W'—*continued.*

### **CONSTRUCTION.**

The Standard Types of "Sieray" Lamps are alike in general constructional details.

As will be seen from the illustrations, the lamp is tubular in shape and consists essentially of two parts, namely, an outer jacket and an inner tube, the space between the two being utilised to minimise loss of heat from the inner tube. The inner tube is of special heat-resisting glass carrying at each end an electrode consisting of a coil of thick tungsten wire surrounding a core of electron-emitting material, one coil being connected to each terminal of the lamp cap.

These "Sieray" Lamps can be burnt only in the vertical position, Cap-up or Cap-down. For horizontal burning lamps, see page 21.

### **STARTING DEVICE.**

The method employed in Sieray Lamps to ensure good ionisation when the lamp is first switched into circuit with consequent reliable starting is the same in all types and consists of the use of auxiliary electrodes in close proximity to the main electrodes. These auxiliary electrodes set up a preliminary discharge which induces the main discharge to start between the two principal electrodes. When the main discharge is in operation its lower resistance automatically cuts out the auxiliary electrodes.

### **STRIKING UP.**

After switching on, a short interval elapses before the maximum rated efficiency is reached, due to the time lag necessary for the mercury, etc., in the tube to become fully vaporized. If the lamp is switched off and then immediately switched on again it will not re-light at once, but will do so after a few minutes. This is due to the fact that the lamp needs to cool down somewhat, and thus reduce the high vapour pressure before the discharge can pass.

### **LIFE GUARANTEE.**

All Sieray Lamps are guaranteed to give an average life of 1,500 hours' burning, when properly installed.

SIEMENS "SIERAY" ELECTRIC DISCHARGE LIGHTING



*Gower Street, St. Pancras, illuminated by Siemens 400 watt Sieray 'W' type lamps.*



*North Street, Chichester, lighted with Siemens 400 watt Sieray 'H' type lamps.*

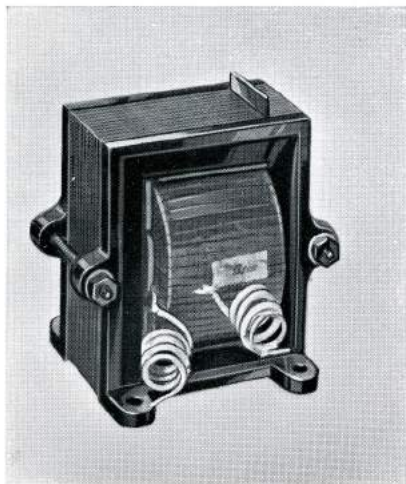
# "SIERAY" CHOKE COILS.

## EFFICIENT CURRENT CONTROL.

As with ordinary arc lamps some form of current limiting device is essential with every form of Electric Discharge Lamps and with all types of "Sieray" Lamps, with the exception of the "Sieray-Dual" Lamp, a carefully designed Choke Coil is employed. By this means the losses involved are kept within practically negligible limits.

The effect of connecting a Choke Coil in the lamp circuit is to reduce the Power Factor of the circuit, but this can be rectified by placing a Condenser of suitable value in parallel with the circuit and under these conditions Power Factors from 0.85 to 0.90 are being obtained.

"Sieray" Choke Coils for use with 250 watt and 400 watt "Sieray" "H" and 400 watt "Sieray" "W" Lamps are of the variable air-gap type, adjustment to suit the mains voltage being carried out by alteration of the packing in the air-gap. The same

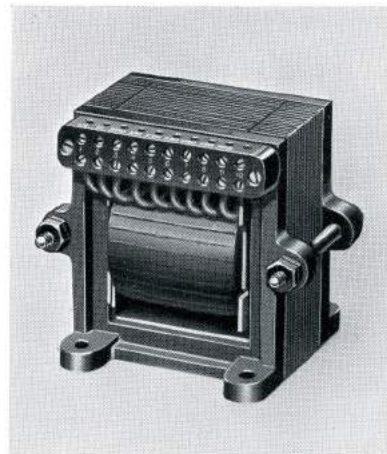


"SIERAY" Choke Type 3A  
(Variable Air-gap)

choke can be used for the three lamps mentioned and consequently any change that a user may wish to make from one to another of these types will not necessitate further expenditure on choke coils.

If preferred tapped choke coils can be supplied for use with the above mentioned types of lamps.

Choke coils for use with 150 watt "Sieray" "H" and "Sieray" "QH" lamps are of the Tapped Coil Type.



"SIERAY" Choke Type Y22  
(Tapped Coil)

## SIERAY CHOKE COILS

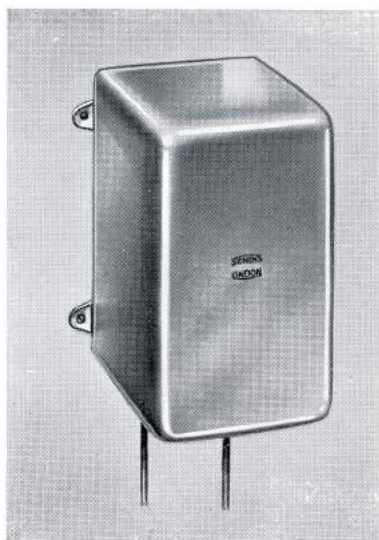
FOR USE WITH	VOLTAGE RANGE	TYPE	TYPE No.	LIST PRICE
60 w. "SIERAY" "QH"	200/260	Tapped Coil	Y 22	42/-
125 w. do.	do.	do.	Y 21	42/-
150 w. "SIERAY" "H"	185/225	do.	S 62	45/-
150 w. do.	205/245	do.	S 63	45/-
150 w. do.	225/265	do.	S 64	45/-
250 w. do.	200/260	Variable Air-gap	3A/25	40/-
400 w. "SIERAY" "H" or "W"	do.	do.	3A/40	40/-

# "SIERAY" CONDENSERS

## THE CONDENSER.

Sieray Condensers are totally enclosed in metal containers so sealed as to be weatherproof. They are fitted with internal safety-leaks to enable the charge to leak away after the lamps are switched off.

The following table gives the capacities we recommend for the efficient Power Factor Rectification of Sieray Lamp Circuits according to the types and wattages employed.



## SIERAY CONDENSERS.

FOR USE WITH	VOLTAGE.	CAPACITY.	LIST PRICE.
80 watt SIERAY 'QH'	200/230	10 mfd.	18/-
80 „ do.	235/260	8 „	16/-
125 „ do.	200/230	15 „	22/-
125 „ do.	235/260	12 „	20/-
150 „ SIERAY 'H'	200/260	10 „	18/-
250 „ do.	200/260	15 „	22/-
400 „ do.	200/260	20 „	25/-
400 „ SIERAY 'W'	200/260	20 „	25/-
		25 „	28/-

NOTE:—On the lower voltages a slightly better degree of rectification can be obtained in 250 watt and 400 watt SIERAY Circuits by the use of 20 mfd. and 25 mfd. condensers respectively.

**DIAGRAMS.**

Diagram I. Shows the correct method of connecting the Choke Coil and Condenser into a Sieray circuit.

Diagram II. Shows the spacing of the Pins on the caps of Sieray "Q.H." Lamps.

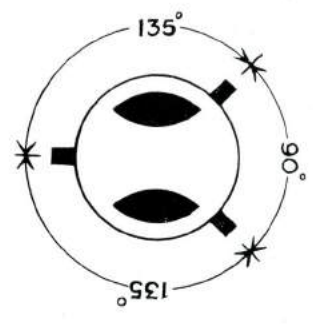
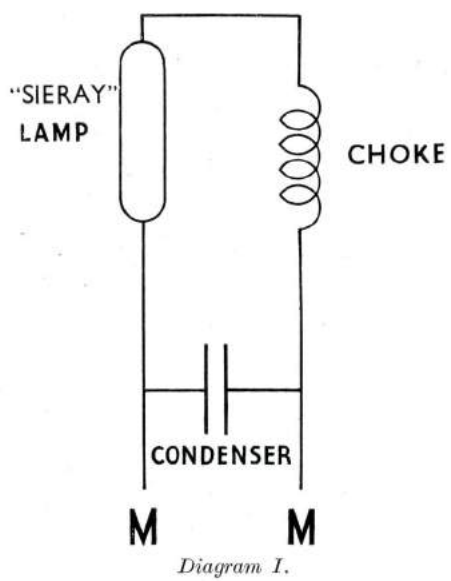
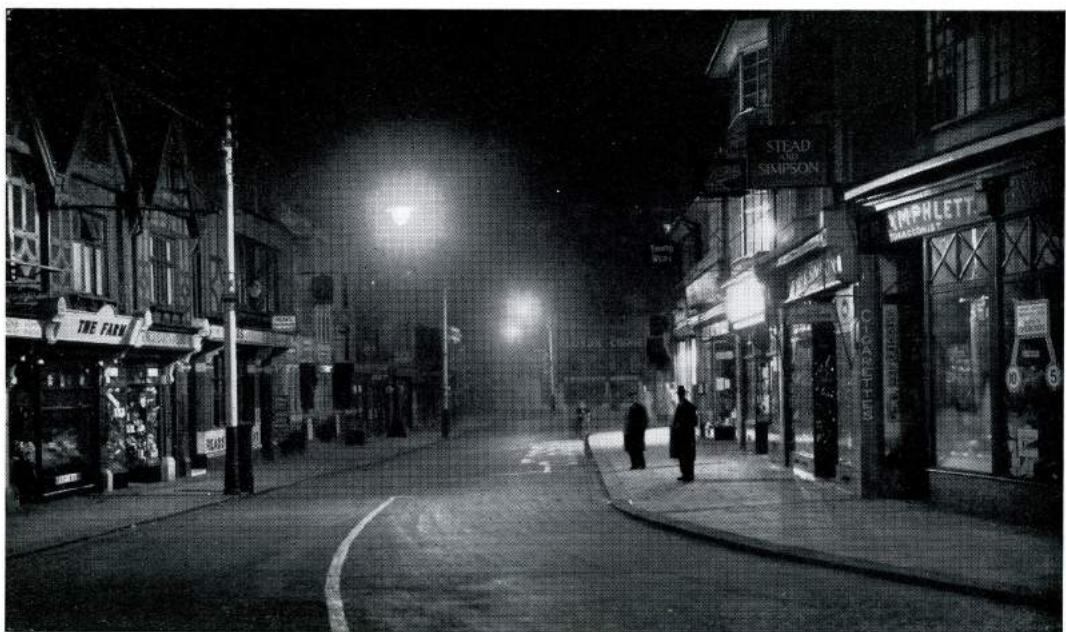
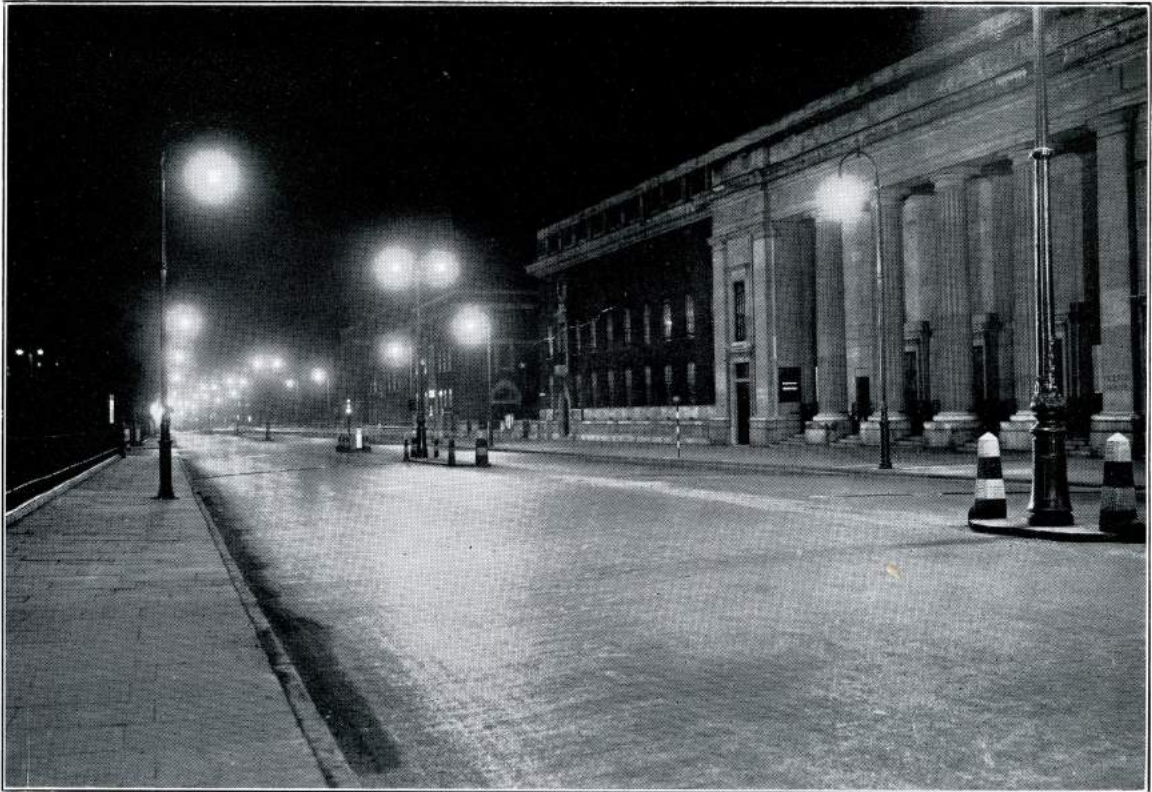


Diagram II.  
Scale full size.



Littlehampton. 250 watt Sieray "H" type lamps in Hadley-Sieray Lanterns.

SIEMENS "SIERAY" ELECTRIC DISCHARGE LIGHTING



*Euston Road lighted by 400 watt Sieray "H" type lamps in Regent-Sieray Lanterns.*



*Euston Road lighted by 400 watt Sieray "H" type lamps in Regent-Sieray Lanterns.*

## STREET LIGHTING LANTERNS



Gower-Sieray.



Hadley-Sieray.



Sussex-Sieray.

The peculiar nature of the long light source of "Sieray" Hot Cathode Electric Discharge Lamps makes it eminently suitable for the illumination of streets and large open spaces. This characteristic of the Hot Cathode Lamp is utilized to the full in SIEMENS Street Lighting Lanterns ensuring, with "SIERAY" Lamps, a high value of road brightness and good visibility under all conditions. In addition, due to the relatively low intrinsic brilliancy of the light source compared with that of a filament lamp, glare is minimised — a fact of great importance to the road user.

### GOWER-SIERAY LANTERN.

This fitting has several unique features.

It consists of a cast iron suspension piece below which is hung a copper dome finishing in a 26½" copper reflector. Below this is a box shaped lantern hinged at one side and fastened at the other by means of two large thumb screws. The lantern is glazed with arctic glass.

Inside the lantern is a patented two way reflector system giving full control of the light in both the vertical and horizontal planes. The reflecting system is designed to make the most efficient use of the light output from the lamp, and is adjustable so as to distribute the light in almost any desired direction. It can be used as a two way directional lantern giving light in two directions 180 degrees apart or when desired the reflectors can be adjusted to 160 or 140 degrees apart, which might be necessary in the lighting of a curving road.

In addition, the top reflectors are adjustable to take care of variations in the distance between the lanterns and to direct on to the road surface the light which would otherwise be wasted in an upward direction.

### HADLEY-SIERAY LANTERN.

This unit has a simple form of directional light control. It consists of a cast iron canopy beneath which is suspended a hexagonal vitreous enamelled steel reflector. Below the reflector mounted in a non-ferrous frame is a six-sided glass lantern. An internal reflector system consisting of two chromium plated copper reflectors is arranged in such a manner as to distribute the light output up and down the road in the proportion of 40 per cent. in the Approach direction and 60 per cent. in the Retreat direction of the traffic. This unit is intended for mounting in staggered formation on opposite sides of the carriage way.

### SUSSEX-SIERAY LANTERN.

This Lantern is designed to give a symmetrical light distribution through 360° and is similar in construction to the Hadley-Sieray Lantern with the exception that it is built in the form of a hexagon with equal sides. The purpose of this unit is central mounting at Cross roads and the lighting of open spaces, etc.

*Prices of Street Lighting Lanterns will be supplied on application.*



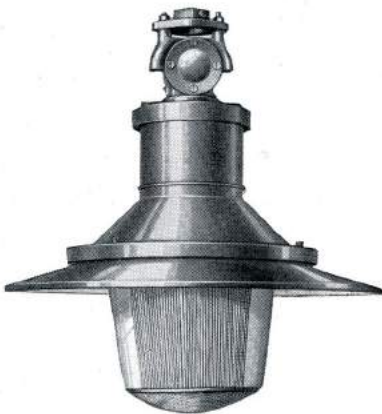
## STREET LIGHTING LANTERNS



Auckland-Sieray.



Regent-Sieray.



Bi-way.

### AUCKLAND-SIERAY LANTERN.

This lantern is designed for two-way directional lighting and depends for its light control on refractor panels specially designed and manufactured by the Holophane Co., Ltd.

A Stainless Steel Reflector is fitted above the lamp inside the lantern, so designed as to reflect upward light from the lamp through the refractors and thence to the road surface.

The top of the lantern is cast in aluminium alloy and the framework is of brass, the standard finishes being Aluminium Paint or Green Enamel.

### WELLINGTON-SIERAY LANTERN.

Similar in construction to the Auckland-Sieray Lantern but arranged to accommodate the "Sieray Dual" Lamp.

### REGENT-SIERAY LANTERN.

The Regent-Sieray Lantern is designed for asymmetric distribution with 160° or 180° spread between the main beams, light control being effected by means of Holophane Refractor Panels of the same type as those used in the Auckland-Sieray Lantern.

It consists of a Cast Iron Hinged Top enclosing the wiring chamber, cast aluminium alloy canopy and bottom framework, with the side angle pieces of heavy gauge brass.

A special feature of the lantern lies in the complete isolation of the lantern interior from the wiring chamber, connection between the two being by means of Mica insulated terminals so sealed-in as to be watertight. Condensed moisture cannot possibly enter the lantern from the bracket arm, whilst the lead wires are totally enclosed.

### BI-WAY LANTERN.

This lantern is of the Refractor Bowl Type giving non-axial asymmetric light distribution.

The Holophane Bowl Refractor is manufactured in one piece with an outer surface that is smooth except on the pavement side. It has a reflecting segment on the pavement side for redirection towards the street, and a series of prisms adjacent to the flange, for refraction of the upward rays emitted by the lamp.

The body of the lantern is soundly constructed and very robust. Hinged cast rings carry the glass refractor and are connected together by  $\frac{3}{8}$  in. diameter steel rods. The outer casing is of heavy gauge spun copper, and the reflector of vitreous enamelled steel.

The refractor is secured to its ring at three points and cannot, therefore, be dislodged accidentally when the lantern is opened.

Lamp focussing is carried out by means of an adjustable cast bridge.

The cast head incorporates cable inlets and a separate wiring chamber heat insulated from the body of the lantern, the design being such as to prevent the ingress of water into the lantern.

*Prices of Street Lighting Lanterns will be supplied on application.*

## STREET LIGHTING LANTERNS



Charlton-Sieray.



Preston-Sieray.

### CHARLTON-SIERAY LANTERN.

This is an ornamental Street Lighting unit with a symmetrical distribution curve suitable for installations where the "White Way" type of lighting is preferred to lighting having a directional characteristic.

The fitting consists of a cast aluminium canopy carrying a 24 inch reflector and an ornamental diffusing globe of pleasing appearance.

The globe is carried on an aluminium spinning which is, of course, much safer than the customary three set screws. The base of the globe is finished off with an ornamental copper spinning.

The globe can be lowered for cleaning purposes and for lamp replacement, and when lowered is suspended by chains so that the operator has both hands free for cleaning.

### DALSTON-SIERAY LANTERN.

This lantern is similar in all respects to the Charlton-Sieray Lantern except that it is fitted with an opal globe, making it very suitable for use with the 300 watt Sieray-Dual Lamp. The opal globe is of the same shape as that shown in the illustration of the Charlton-Sieray Lamp.

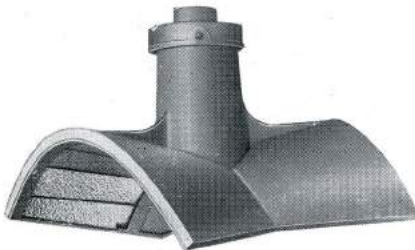
### PRESTON-SIERAY LANTERN.

The metal work of this Lantern is exactly similar to that of the Charlton-Sieray Lantern, but it is fitted with a larger globe of white glass and is specially suitable for use with "Sieray-Dual" Lamps.

## FITTINGS FOR SIDE STREET LIGHTING

We shew in the accompanying illustrations typical fittings suitable for use with Sieray 'Q.H.' Lamps for Side Street Lighting.

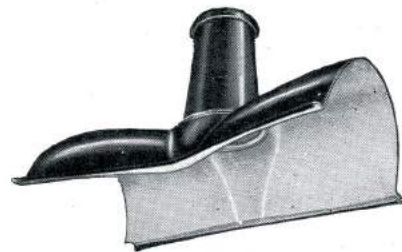
In many instances existing fittings can be used effectively, and we shall be pleased to advise on this matter.



Pinnacle.



Bi-way. Duodome.



Duodome. Ruralux.

*Prices of Street Lighting Lanterns will be supplied on application.*



Park Street, St. Pancras, lighted by 400w. Sieray "H" type Lamps in Regent-Sieray Lanterns.



New Scotland Yard, lighted with 500w. "Sieray-Dual" Lamps



Railway Arches near King's Cross Station. The installation consists of 250w. Sieray "H" type Lamps in Sussex-Sieray Lanterns.

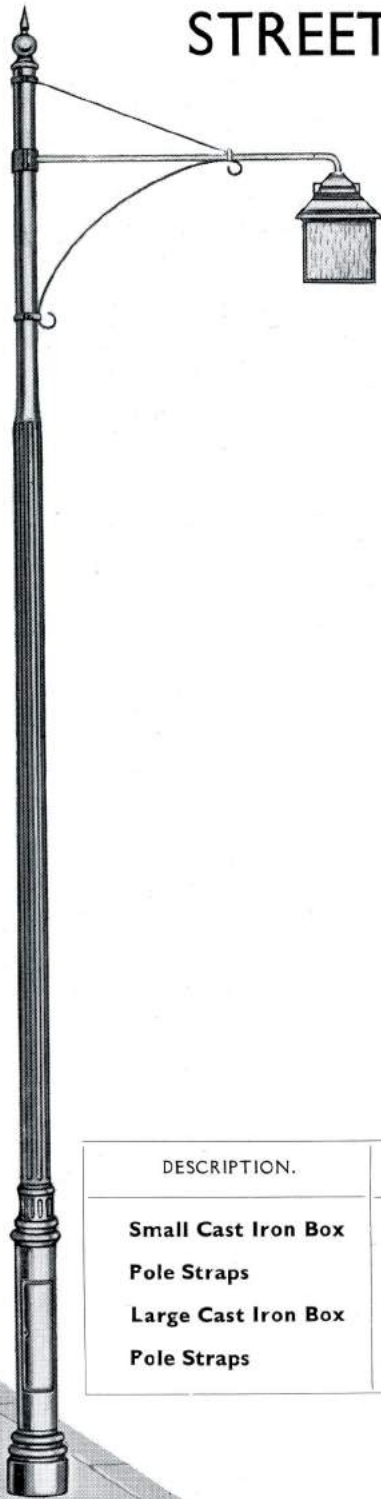


Street lighting at Preston, Lancashire, by 500w. "Sieray-Dual" Lamps in Preston-Sieray Lanterns.



Christchurch Road, Bournemouth, lighted by a combination of 400w. Sieray "H" Lamps and Tungsten Filament Lamps in Gower-Sieray Lanterns.

# STREET LIGHTING COLUMNS



For Street Lighting purposes where new columns are required various types of steel and concrete columns have been developed with base chambers to house the auxiliary apparatus, fuses, time switch, etc.

An example of such a column manufactured from seamless hot rolled steel is shewn in the accompanying illustration.

## EXISTING COLUMNS.

Where it is desired to use existing Street Lighting Columns without provision for housing the auxiliary apparatus, Control Boxes can be supplied to be strapped to the columns in any convenient position.

These Control Boxes are constructed of Cast Iron and can be supplied in the sizes shewn in the table of weights and dimensions at the end of this List.

An illustration of the Large Cast Iron Control Box completely fitted is shewn below.

DESCRIPTION.	PRICE EACH.	
<b>Small Cast Iron Box</b>	<b>List Price</b>	<b>27/-</b>
<b>Pole Straps</b>	"	<b>3/-</b>
<b>Large Cast Iron Box</b>	"	<b>37/-</b>
<b>Pole Straps</b>	"	<b>4/-</b>



We shall be pleased to prepare Plans and quote for complete Street Lighting Schemes including erection.

## FLOODLIGHTING BY "SIERAY" LAMPS

Floodlighting of certain types of structures can be very effectively carried out by the use of Sieray 'W' or 'H' Type Lamps in suitable Lanterns and Reflectors.

It is often desired, however, to floodlight in colour and one of the outstanding advantages in the use of the "Sieray" Lamp for floodlighting is the facility with which coloured light can be produced at a considerably higher efficiency than can be obtained from the use of gasfilled lamps and colour screens.

Sieray Lamps for Colour Floodlighting can be supplied in the following Colours:—  
RED, BLUE, GREEN, PRIMROSE.

### "SIERAY" RED FLOODLIGHTING LAMP.

This lamp is in the form of a glass tube fitted at each end with a two-pin cap, producing a luminous column approximately 24 inches long and rated at 200 watts consumption. The light is of the well-known rich, neon colour and is not produced by colour screening. It is much more intense than that obtained with cold cathode advertising signs.

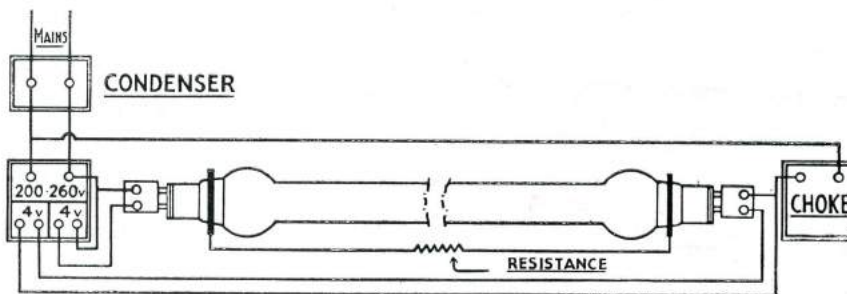


### CONTROL APPARATUS FOR THE "SIERAY" RED FLOODLIGHTING LAMP.

The current through the tube is controlled by means of a Standard Sieray Choke Coil appropriately set for the supply voltage. **List Price, 40/-.**

The filament heaters are fed from two separate 4-volt secondaries of a transformer, the primary of which is tapped in 5-volt steps from 200 to 260 volts. A resistance is incorporated in the fitting, which connects together the auxiliary electrodes for the purpose of starting the discharge in the tube.

No other apparatus is necessary to strike the arc and the simplicity of the circuit is apparent from the diagram of connections shown below.



TYPE.	WATTS.	VOLTS.	PRICE EACH.
RED FLOOD LIGHTING	200	200/260 STATE ACTUAL VOLTAGE WHEN ORDERING	45/-



THE "CHINE" HOTEL, - BOSCOMBE,  
Floodlighted with SIEMENS "SIERAY,"  
FLOODLIGHTING LAMPS and Equipment.



The "MILFORD" Floodlight, used  
for the installation shown above.

# FLOODLIGHTING BY "SIERAY" LAMPS

## POWER FACTOR RECTIFICATION.

The Sieray Red Floodlighting Tube requires a Condenser of 25 mfd. capacity for Power Factor Rectification.

List Price, 28/-.

## STRIKING UP.

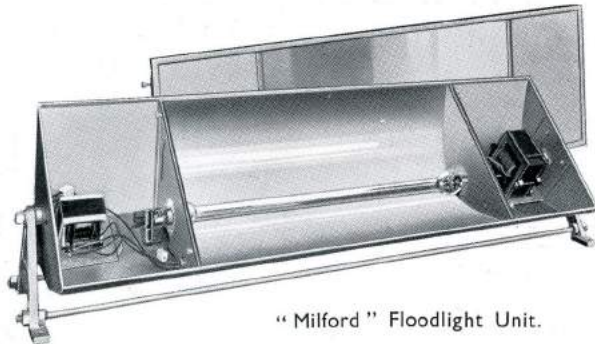
These Red Sieray Lamps operate at a lower gas pressure than other Sieray Lamps and there is virtually no delay in building up to full luminous output after switching on, whilst the lamps strike up at once when hot.

## THE FLOODLIGHT UNIT.

A Special Floodlight Unit, the "Milford," an illustration of which appears below, has been designed for the "Sieray" Red Floodlighting Tube.

The body is of heavy gauge lead coated sheet steel with edges folded for rigidity. The Reflector and removable end cheeks are of chromium plated copper. The cover carrying clear heat-resisting glass and the two metal blanked ends is attached by four milled headed screws.

Accommodation is provided in the body of the unit at the two ends for the Choke Coil and Filament Transformer, and the Resistance and the necessary clamps and connections are included.



"Milford" Floodlight Unit.

The Floodlight is mounted in a cradle for ground mounting, the exterior is finished aluminium cellulose, and the price includes Filament Transformer and starting Resistance, but not Choke and Condenser.

List Price, £14-14-0.

The beam spread is approximately 140° in the horizontal plane and 20° in the vertical plane.

## "SIERAY" BLUE, GREEN AND PRIMROSE FLOODLIGHTING LAMPS.

These lamps can be supplied in either the 250 watt or 400 watt sizes and conform to the dimensions and generally to the construction of our Standard "Sieray" Electric Discharge Lamps, the colour being obtained by the use of outer bulbs of coloured glass.

A very important feature from a Floodlighting point of view is that **this range of lamps can be used at any angle without any form of magnetic deflection device.**

Sieray Type "H" lamps in clear bulbs can be supplied for use in a horizontal position for Floodlighting.

Current Control is by means of our Standard Sieray Choke Coil, and Power Factor Rectification by means of a 50 mfd. Condenser.

TYPE.	COLOUR.	WATTS.	VOLTS.	LIST PRICE.
SIERAY—Floodlighting	Blue Green or Primrose	250	200/260	50/-
		400	200/260	52/6
SIERAY—Floodlighting	Clear	250	200/260	37/6
		400		
CHOKE COILS for use with these Lamps				40/-

STATE EXACT VOLTAGE WHEN ORDERING.



The Daylight Inn (Charrington's Brewery) at Petts Wood, Kent, floodlighted by "Sieray" 400w. Primrose Floodlighting Lamps in specially constructed lanterns, which house the necessary auxiliary equipment.

Subsidiary lighting towards the street is provided by SIEMENS Tungsten Filament Lamps housed in a separate compartment of the same lantern.

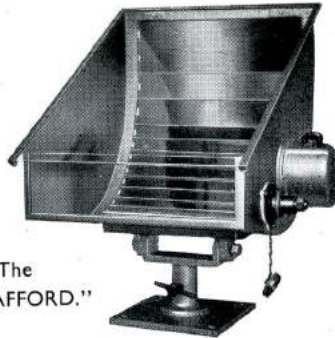


## FLOODLIGHTING EQUIPMENT.

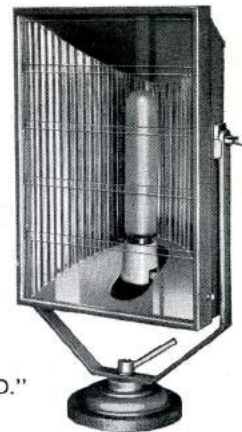
The  
"OXFORD."



The  
"STAFFORD."



The  
"BRENTFORD."



Special floodlighting fittings have been designed to accommodate Sieray Lamps and to take full advantage of the special nature of the light source, with the result that floodlights are available to deal with all ordinary floodlighting problems, giving an even light distribution. The Floodlights described below have been designed for use with 250 watt or 400 watt Sieray Lamps.

### THE "OXFORD" FLOODLIGHT.

This is designed for use with Sieray Horizontal Burning Lamps. The body is of reinforced lead coated sheet steel of heavy gauge, the reflector of heavily chromium plated brass, and the front is fitted with heat-resisting glass.

The special form of quadrant cradle permits of very easy adjustment, and a simple focussing arrangement is included.

The centre portion of the reflector which is of parabolic section gives a high intensity beam which is graded off by the ribbed sections.

The beam spread is approximately 90° in the vertical plane and 100/110° in the horizontal.

**List Price £7-7-0**

### THE "STAFFORD" FLOODLIGHT.

This is designed to accommodate Sieray Floodlighting Lamps in the horizontal position. The body is of heavy gauge lead coated sheet steel wired and reinforced at the joints. The Reflector is of copper backed mirror glass built up in strips on a sheet steel former and is of parabolic section. The top and front are covered by clear heat-resisting glass which slides in a channel formed in the end cheeks.

The floodlight is complete with Cradle for ground mounting. G.E.S. Holder, Watertight Plug and Socket for easy connection. Adjustment is provided on the lampholder for focussing.

The exterior is finished aluminium cellulose.

The beam spread is approximately 90° in the horizontal plane and 40° in the vertical plane.

This unit is particularly suited to those situations where the floodlight must be sited close to the building to be illuminated.

**List Price £8-0-0**

### EXTRA HEAVY TYPE.

In situations where the atmosphere is corrosive, such as Railway Sidings, Docks, Colliery Yards, Wharves, etc., similar lanterns of more robust construction should be employed, and in these cases we have developed lanterns with bodies of much heavier gauge sheet steel or copper, with exterior finish of special acid-resisting enamel. **Prices on Application**

### THE "BRENTFORD" FLOODLIGHT.

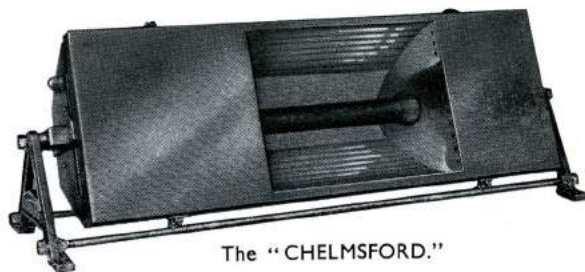
The body of this lantern is constructed of heavy gauge lead coated sheet steel suitably reinforced where necessary. The interior is fitted with a reflector of parabolic section and formed of heavily chromium plated brass, the finished surface being ribbed. Hand operated focussing gear is provided to enable the lamp to be brought into the true focal position. A detachable front is fitted carrying heat-resisting glass in louvre formation which gives ample ventilation besides allowing for easy replacement in case of breakage. The whole lantern is mounted on an adjustable stirrup to ensure easy training in the desired direction.

This type of lantern gives a beam spread of approximately 95° in the horizontal plane and 100/110° vertically.

**List Price £6-0-0**

### THE "LANGFORD" FLOODLIGHT.

The construction of the housing of this unit is similar to that of the "BRENTFORD," but the reflector is modified to give a concentrated elongated beam in the vertical plane of approximately 6:1, e.g., 10 ft. wide by 60 ft. high. **List Price £6-0-0**



The "CHELMSFORD."

### THE "CHELMSFORD" FLOODLIGHT.

This unit has a similar light distribution to that of the "OXFORD" Floodlight but has provision for housing the Choke and Condenser in the blanked off ends of the body.

**List Price £11-0-0**

## INDUSTRIAL LIGHTING

There are still certain special industrial operations that can only be carried out in daylight and it would be incorrect to suppose that the Electric Discharge Lamp can yet be successfully applied to these cases. The field of application, however, has been considerably increased by the advent of the "SIERAY-DUAL" Lamp and owners of large interiors, factories and workshops, where a high intensity of illumination with good colour rendering is required, will no longer be debarred from taking advantage of the high efficiency of Electric Discharge Lamps. Where colour definition is unimportant advantage should be taken of the higher efficiency of SIERAY "Q.H." and "H" type Lamps. In the case of a factory where the lighting may already be adequate the "SIERAY" Lamp will give the same high standard of illumination at a much decreased running cost whilst in cases of insufficient light, the proper standard of illumination can probably be achieved at the same (or even a lower) running cost.

Owing to the intense light output of the "SIERAY" Lamp, it is important that installations should be so designed that the lamps are mounted as high as possible above the working plane.

The effect of adequate lighting on quality and quantity output has been amply demonstrated in the past; bearing in mind also the present day need for minimising all overhead expenses, the time is now ripe for urgent investigation of industrial lighting, particularly in large workshops, foundries, garages, etc.

### DISPERSIVE TYPE REFLECTORS.

Specially designed for the economical lighting of large areas such as Factories, Foundries, Garages, Yard Lighting, etc., the combination of the large light source and the diffuse reflection of the "CRYSTEEL" surface, providing even illumination.

### DISTRIBUTING TYPE REFLECTORS.

Gives a wider lateral distribution than the Dispersive Type and is therefore more suitable for the lower mounting heights where a good horizontal distribution is required.

In certain situations it may be desired to obscure partially the lamp, thus reducing the intrinsic brilliancy and glare. We can supply a frosted glass cylinder with its necessary attachments for this purpose, either with new reflectors or to convert existing reflectors of this type.

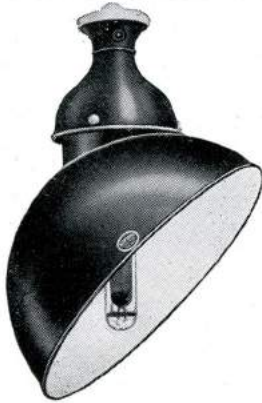
### PARABOLIC ANGLE TYPE REFLECTORS.

Intended for those locations where lighting from the side is essential for the efficient illumination of vertical surfaces, such as Engine Sheds, Aeroplane Sheds, Erecting Shops, Shop Window Lighting, etc.

These fittings embody the Saflux patent canopy, obviating trouble from overheating the wiring.



Dispersive Type 9400. For Interior use.



Parabolic Angle Type 9410. For Interior use.



Distributing Type 9451. For Exterior use.

### FOR EXTERIOR USE.

Reflectors for exterior use are entirely weatherproof and fitted with wellglasses to protect the lamps from the elements as shewn in the illustration of the Reflector, Type No. 9451.

Prices of these Reflectors are given on page 26.

## INDUSTRIAL REFLECTORS FOR USE WITH SIERAY "Q.H." LAMPS.

As already indicated it is possible to use 80 w. and 125 w. Sieray 'Q.H.' Lamps effectively in many standard types of fittings designed primarily for use with Gasfilled Lamps.

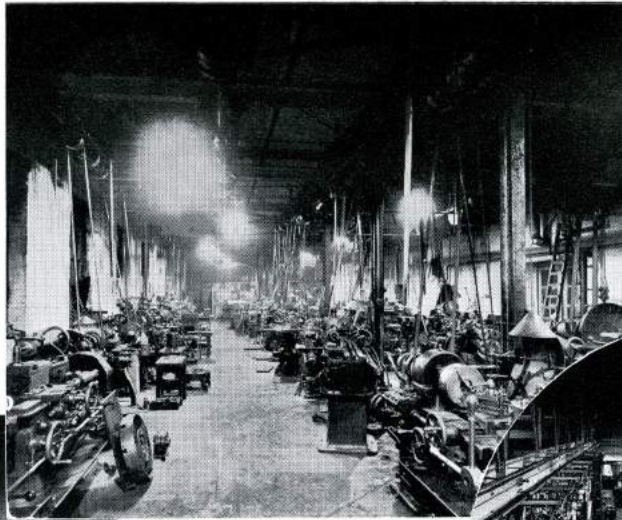
Special fittings have been and are being designed to meet special lighting requirements and we invite you to submit your lighting problems to us.



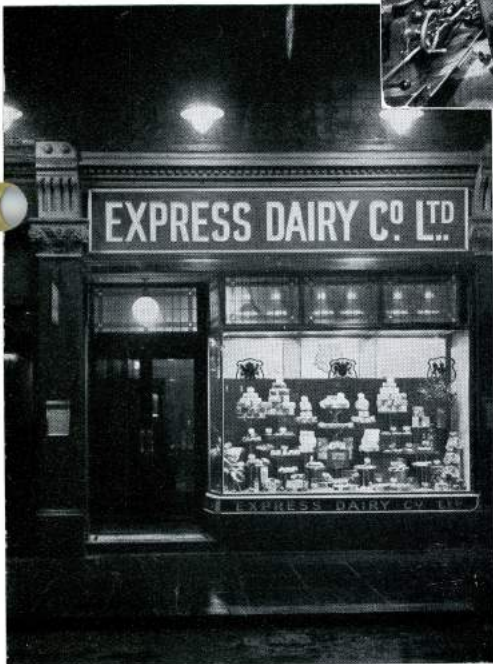
Typical Dispersive Reflector for use with 80 w. Sieray 'Q.H.' Lamp.

**SIEMENS** "SIERAY" ELECTRIC DISCHARGE LIGHTING

A Machine Shop in the Works of Messrs. C.V.A. Jigs, Moulds & Tools Ltd., Hove, Sussex, lighted by 150w. Sieray 'H' type Lamps.



One of the bays at the Works of Messrs. Alfred Herbert, Coventry, that are lighted by 500w. Sieray-Dual Lamps.



Outside lighting by 500w. Sieray-Dual Lamps at 25, Chapel Street, Edgware Road, N.W.1.



A Section of the Factory of Messrs. Philco Radio & Television Corporation of Great Britain Ltd., Perivale, which is lighted with 150w., 250w. and 400w. Sieray 'H' type Lamps.



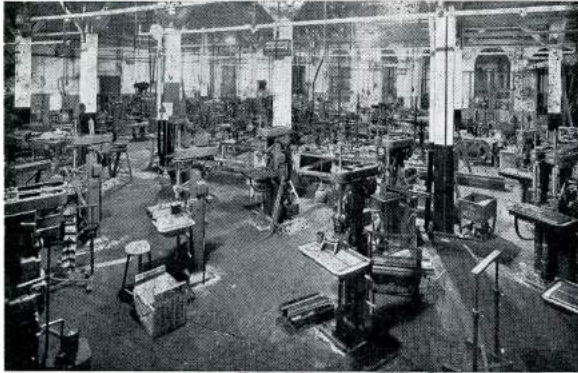
Outside lighting of Messrs. Debenhams Ltd., Wigmore Street, W.1, by 500w. Sieray-Dual Lamps installed in existing lanterns.

# INDUSTRIAL LIGHTING

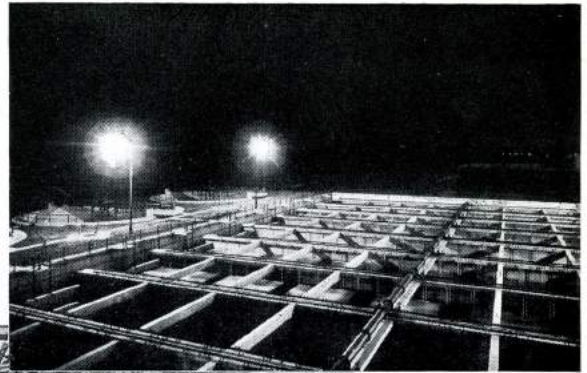
PRICES OF REFLECTORS SHOWN ON PAGE 24.

TYPE	Catalogue No.	FOR "SIERAY" LAMPS.	LIST PRICE.
<b>FOR INTERIOR USE</b>			
Dispersive ... ..	9400 ... ..	400 w. "H" or "W" ... ..	47/6
do. ... ..	9400-S.D. ... ..	500 w. Sieray-Dual ... ..	47/6
do. ... ..	9500 ... ..	{ 250 w. "H" ... .. 300 w. Sieray-Dual ... .. }	42/6
Distributing ... ..	9450 ... ..	400 w. "H" or "W" ... ..	45/-
do. ... ..	9450-S.D. ... ..	500 w. Sieray-Dual ... ..	45/-
do. ... ..	9550 ... ..	{ 250 w. "H" ... .. 300 w. Sieray-Dual ... .. }	40/-
Frosted Glass Cylinder and Fixing for Distributing Reflector ... ..			18/-
Parabolic Angle ... ..	9410 ... ..	400 w. "H" or "W" ... ..	50/-
do. .... ..	9410-S.D. ... ..	500 w. Sieray-Dual ... ..	50/-
do. ... ..	9510 ... ..	{ 250 w. "H" ... .. 300 w. Sieray-Dual ... .. }	45/-
<b>FOR EXTERIOR USE</b>			
Dispersive ... ..	9401 ... ..	400 w. "H" or "W" ... ..	67/6
do. ... ..	9401-S.D. ... ..	500 w. Sieray-Dual ... ..	72/6
do. ... ..	9501 ... ..	{ 250 w. "H" ... .. 300 w. Sieray-Dual ... .. }	62/6
Distributing ... ..	9451 ... ..	400 w. "H" or "W" ... ..	63/-
do. ... ..	9451-S.D. ... ..	500 w. Sieray-Dual ... ..	68/-
do. ... ..	9551 ... ..	{ 250 w. "H" ... .. 300 w. Sieray-Dual ... .. }	58/-
Parabolic Angle ... ..	9411 ... ..	400 w. "H" or "W" ... ..	67/6
do. ... ..	9411-S.D. ... ..	500 w. Sieray-Dual ... ..	72/6
do. ... ..	9511 ... ..	{ 250 w. "H" ... .. 300 w. Sieray-Dual ... .. }	62/6

SIEMENS "SIERAY" ELECTRIC DISCHARGE LIGHTING



One of the Machine Shops at the Woolwich Works of Siemens Brothers & Co. Ltd., lighted by 500w. "Sieray-Dual" Lamps.



Lighting by Sieray 400w. type 'H' Lamps at the Coleshill Works of the Birmingham Thame & Rea Drainage Board.



Fenchurch Street Railway Station lighted by a combination of 250w. Sieray 'H' and Tungsten Filament Lamps in Preston-Sieray Lanterns.

Printing Works illuminated by 400w. Sieray 'W' type Lamps.

West Riding Auto Company's Garage, Wakefield, lighted by "Sieray-Dual" Lamps in Dispersive Reflectors.



Printing Works illuminated by 400w. Sieray 'W' type Lamps.



**OVERALL DIMENSIONS AND WEIGHTS.**

Description and Type.	Page No.	Approx. Weight.	Height.	Width.
<b>LAMPS.</b>				
" Sieray-Dual " 500 watts A.C. or D.C.	4	—	14 $\frac{3}{4}$ "	4" max. diam.
" " 300 " A.C. ...	4	—	11 $\frac{1}{4}$ "	3 $\frac{1}{3}$ " max. diam.
Sieray 125 watts, Type QH...	6	—	7"	3 $\frac{1}{2}$ " max. diam.
" 80 " " " ...	6	—	6 $\frac{3}{8}$ "	3 $\frac{1}{8}$ " max. diam.
Sieray 400 " Type H or W ...	7	—	12 $\frac{3}{4}$ "	2" diam.
" 250 " Type H ...	7	—	11 $\frac{1}{4}$ "	2" diam.
" 150 " " " ...	7	—	9"	1 $\frac{3}{4}$ " diam.
" Sieray " Red Floodlighting Tube ...	19	—	—	33" long over pins × 2 $\frac{1}{2}$ " max. diam.
<b>AUXILIARIES.</b>				
Choke Coil, 400 watts, 3A/40 ...	10	13 $\frac{1}{2}$ lbs.	5 $\frac{1}{8}$ "	4 $\frac{1}{4}$ " × 5 $\frac{1}{2}$ "
" " 250 " 3A/25 ...	10	13 $\frac{1}{2}$ lbs.	5 $\frac{1}{8}$ "	4 $\frac{1}{4}$ " × 5 $\frac{1}{2}$ "
" " 150 " S62-63-64...	10	9 lbs.	6"	5 $\frac{3}{8}$ " × 5 $\frac{3}{8}$ "
" " 125 " Y21 ...	10	9 $\frac{1}{2}$ lbs.	4 $\frac{1}{2}$ "	4 $\frac{1}{4}$ " × 5 $\frac{1}{4}$ "
" " 80 " Y22 ...	10	9 lbs.	4 $\frac{1}{2}$ "	4 $\frac{1}{4}$ " × 5 $\frac{1}{4}$ "
Condenser, 25 mfd. ...	11	8 $\frac{1}{2}$ lbs.	5 $\frac{3}{16}$ "	7" × 5 $\frac{1}{4}$ " over lugs
" 20 " ...	11	8 lbs.	5 $\frac{3}{16}$ "	7" × 5 $\frac{1}{4}$ " " "
" 15 " ...	11	4 lbs.	4 $\frac{3}{4}$ "	5 $\frac{1}{8}$ " × 4 $\frac{3}{4}$ " " "
" 12 " ...	11	4 lbs.	4 $\frac{3}{4}$ "	5 $\frac{1}{8}$ " × 4 $\frac{3}{4}$ " " "
" 10 " ...	11	1 $\frac{3}{4}$ lbs.	5"	3 $\frac{1}{2}$ " × 1 $\frac{7}{8}$ "
" 8 " ...	11	1 $\frac{3}{4}$ lbs.	5"	3 $\frac{1}{2}$ " × 1 $\frac{7}{8}$ "
Large C.I. Box for choke Condenser, etc.	18	40 lbs.	8 $\frac{1}{4}$ "	8 $\frac{3}{4}$ " × 15 $\frac{1}{2}$ " long
Small C.I. Box ...	18	19 $\frac{3}{4}$ lbs.	7"	15" × 9 $\frac{7}{16}$ " over lugs
<b>STREET LIGHTING LANTERNS.</b>				
Sussex-Sieray S.B.1 ...	14	18 lbs.	19"	21" over reflector
Hadley-Sieray D.B.2 ...	14	20 $\frac{1}{2}$ lbs.	19"	24" × 17 $\frac{1}{2}$ " " "
Gower-Sieray D.A.4 ...	14	50 lbs.	18 $\frac{1}{2}$ "	27" " "
Charlton-Sieray D.A.5... ..	16	22 lbs.	26"	24" " "
Auckland-Sieray D.A.6 ...	15	38 lbs.	22"	25" × 20" " "
Wellington-Sieray D.A.7 ...	15	38 lbs.	22"	25" × 20" " "
Preston-Sieray D.A.8 ...	16	25 lbs.	31"	24" " "

Further particulars will be furnished on application.

**OVERALL DIMENSIONS AND WEIGHTS—continued.**

Description and Type.	Page No.	Approx. Weight.	Height.	Width.
<b>STREET LIGHTING LANTERNS—</b>				
contd.				
Regent-Sieray D.A.9 ... ..	15	34 lbs.	20"	16" × 16" over reflector
Dalston-Sieray D.A.10 ... ..	16	22 lbs.	26"	24" " "
Bi-way D.H.11 ... ..	15	38 lbs.	26"	24" " "
<b>FLOODLIGHTING LANTERNS.</b>				
Langford ... ..	23	28 lbs.	25½"	14" × 10"
Brentford ... ..	23	28 lbs.	25½"	14" × 10"
Stafford ... ..	23	35 lbs.	16½"	19" × 21"
Oxford ... ..	23	19 lbs.	12½"	16" × 19"
Chelmsford ... ..	23	41 lbs.	14"	42" × 13"
Milford ... ..	21	54 lbs.	14½"	48½" × 13½"
<b>INDUSTRIAL REFLECTORS.</b>				
<b>INTERIOR :</b>				
Dispersive . . . 9400 and 9400 S.D.	24-26	11 lbs.	20"	18" diam.
9500	26	7¼ lbs.	18"	14" diam.
Distributing . . . 9450 and 9450 S.D.	24	9 lbs.	11"	21" diam.
9550	26	5½ lbs.	11"	16" diam.
Parabolic Angle 9410 and 9410 S.D.	24-26	11 lbs.	23"	18" diam.
9510	26	7¼ lbs.	20"	14" diam.
<b>EXTERIOR :</b>				
Dispersive . . . 9401 ... ..	26	23½ lbs.	22"	18" diam.
9401 S.D....	26	24 lbs.	23"	18" diam.
9501 ... ..	26	16½ lbs.	20"	14" diam.
Distributing . . . 9451 ... ..	24-26	21¼ lbs.	22"	21" diam.
9451 S.D ... ..	26	21¾ lbs.	23"	21" diam.
9551 ... ..	26	15 lbs.	20"	16" diam.
Parabolic Angle 9411 ... ..	26	23½ lbs.	23"	18" diam.
9411 S.D....	26	24 lbs.	23"	18" diam.
9511 ... ..	26	16½ lbs.	20"	14" diam.

Further particulars will be furnished on application.



ELECTRIC DISCHARGE LAMPS

MADE IN ENGLAND.



FOR



TUNGSTEN FILAMENT LAMPS

OF ALL TYPES

SEE CATALOGUE No. 530.

Collection and scan: Olav Kettner, Hamburg  
for  
<http://www.lamptech.co.uk>  
James D. Hooker  
February 2021