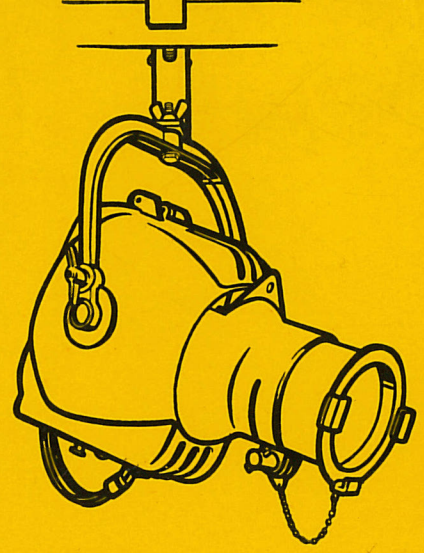
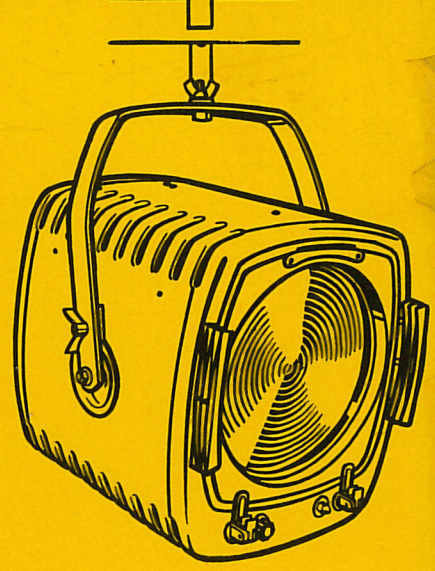
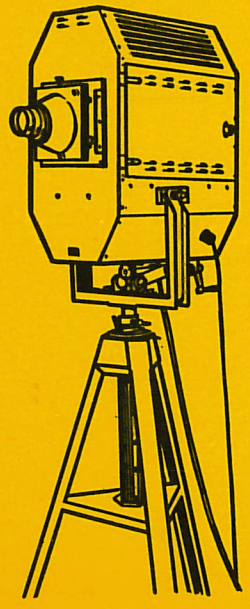
STRAND ELECTRIC

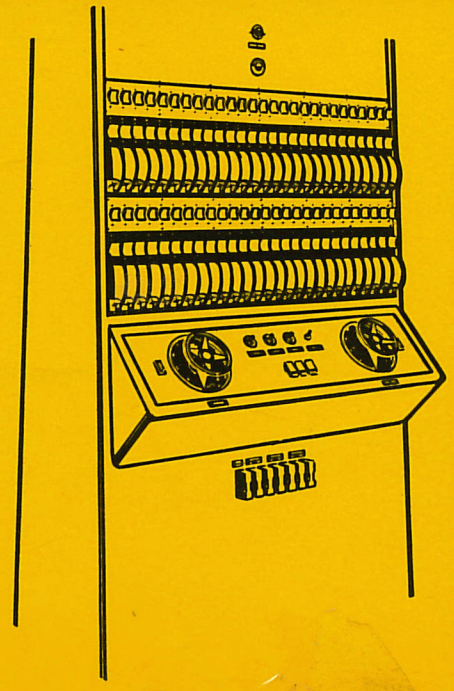


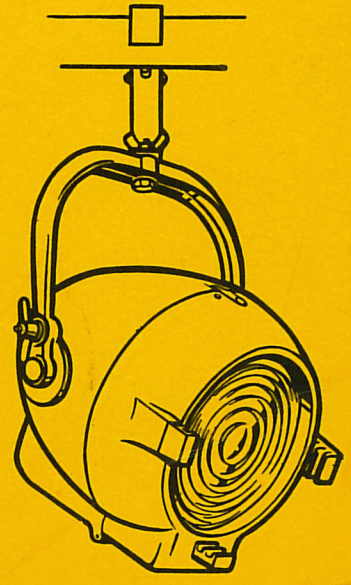


LIGHTING FOR ENTERTAINMENT 1961

CONTENTS







Strand equipment in a German Television Studio.

LIGHTING FOR ENTERTAINMENT

Founded nearly 50 years ago by specialists in stage lighting for the professional theatre, Strand Electric to-day provides lighting for every form of entertainment. Strand lighting is to be found in virtually all British theatres and halls including such famous examples as Drury Lane, the Covent Garden Opera House, the Stratford-on-Avon Memorial Theatre and the Royal Festival Hall, as well as schools, church halls and community centres throughout the length and breadth of the country.

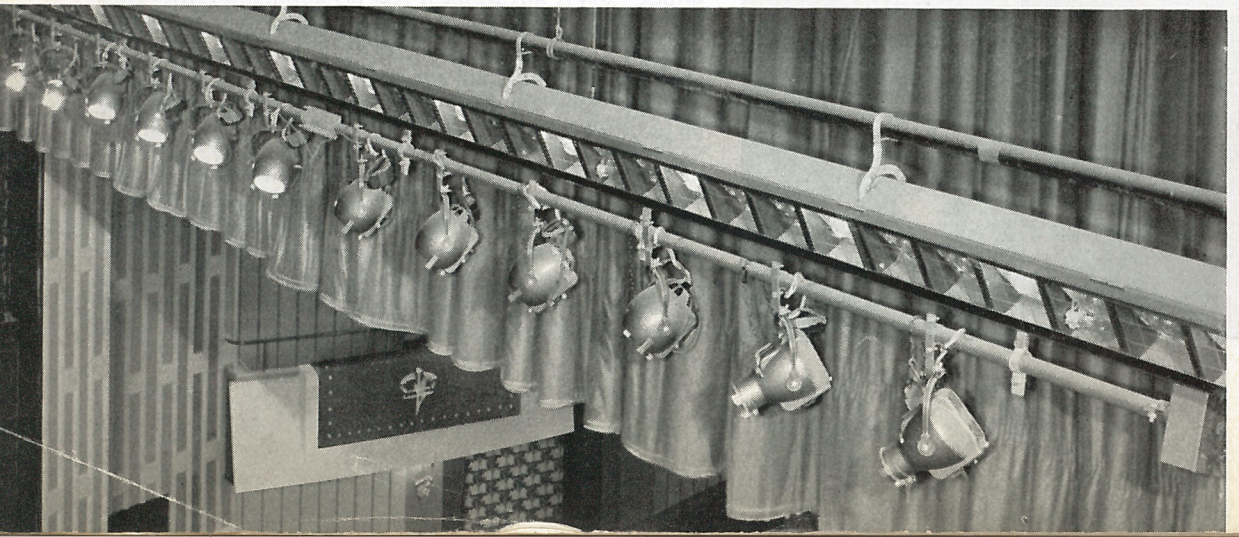
Other Strand activities include lighting for television studios, cinemas, exhibition halls, hotels and cabarets, outdoor productions (Son et Lumière or straight!), signs and the more dramatic forms of architectural lighting. Strand Electric have unique experience in the electrical control of lighting using all forms of dimming and automatic switching. Strand control equipment is to be found in places as diverse as St. Paul's Cathedral, the National Physical Laboratory, the B.B.C. Television Centre, R.M.S. Queen Elizabeth, and the Tower Ballroom, Blackpool.

Strand Electric are the actual manufacturers of the equipment they market and a large export organisation includes branches in Australia, Canada and Eire and agents in 44 countries.

STRAND ELECTRIC & ENGINEERING CO. LTD., 29 KING STREET, LONDON, W.C.2

The material listed in this publication is offered subject to the Company's Terms of Business and Conditions of Sale a copy of which may be obtained on request. Prices apply in the U.K. only.

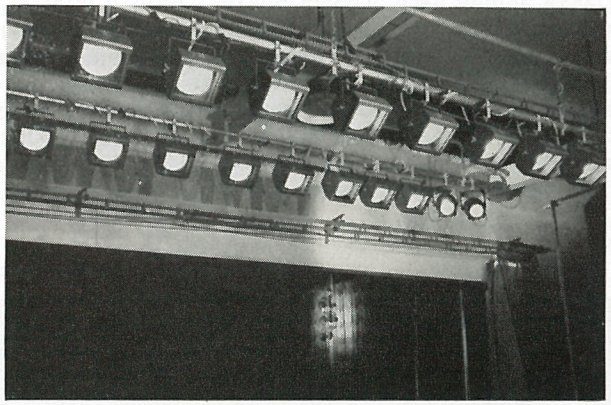
Strand equipment in London's latest Theatre and (right) Strand Electric in Denmark.



LIGHTING

Lighting equipment for the stage mainly hangs overhead and takes three forms:— (a) Floodlights (b) Soft-Edge Spotlights (c) Hard-Edge Profile Spotlights.

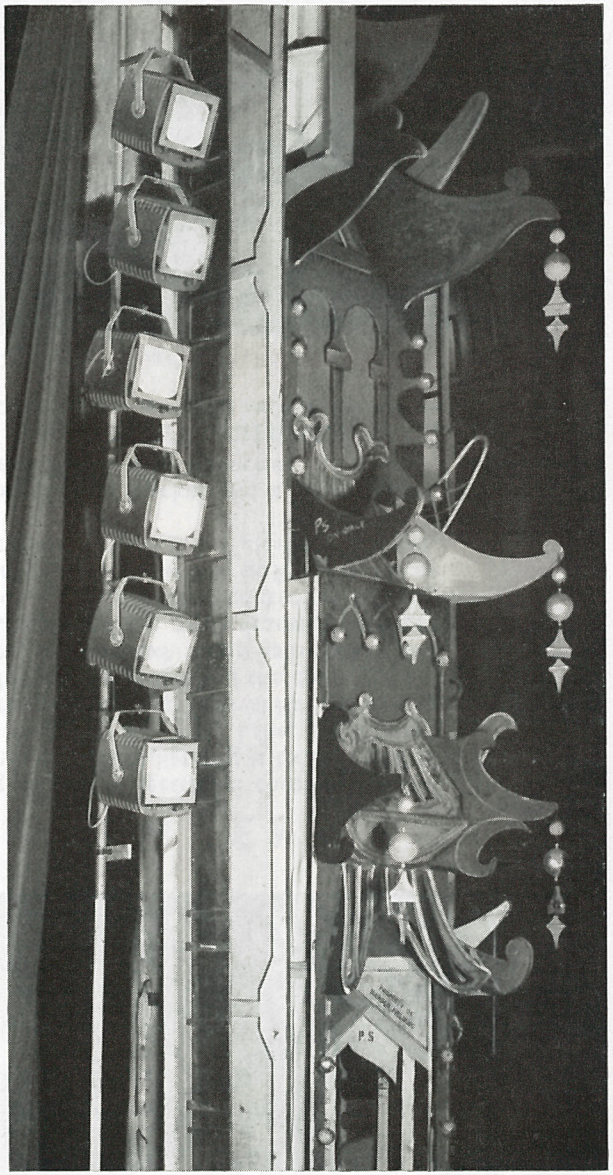
Today floodlights are required only to give an even wide angle beam free of striation and hot spot. For the smaller stage this light is better provided by a number of individual floodlights grouped several to a circuit. These floods would be 60-200 watt. or the 300-500 watt. size depending on the scale of the stage. Sometimes for backcloth or cyclorama flooding and always as general flooding on the larger stages, magazine battens whose compartments are in effect a number of floods joined together, are used. These battens are wired to alternate in 2, 3 or 4 circuits. Similar compartment equipment is used as groundrow at the bottom of the cyclorama or as footlight at the front edge of the stage.



School stage showing individual Strand Patt. 137 200-watt Floods as overhead flooding.

The footlight is an auxiliary piece of equipment and to avoid much expenditure on this item when working to a very restricted budget a single circuit Junior type can be installed to ensure that some correction to overhead lighting is available.

The most important lighting on the stage requires to be localised to emphasize certain areas, avoid spill on cyclorama or backings and provide dominant (motivating) lighting as sunlight, moonlight etc.



London Coliseum. Six Strand Patt. 243 1 Kw Fresnel Spots in wings.

The best unit for this purpose is the Fresnel soft edge beam spotlight since it gives a wide adjustable beam ranging from 15° to 55°. These lanterns will hang on bars behind the proscenium and elsewhere. They are also used on vertical barrels (boomerangs) or hang as ladders in the wings to provide high-lighting from the side. The Fresnel spot with its adjustable beam has replaced all lens spots except the Mirror Spots (see below) and also replaces the narrow beam single purpose sharp cut-off floods such as the Pageant and Acting Area Lanterns used hitherto.

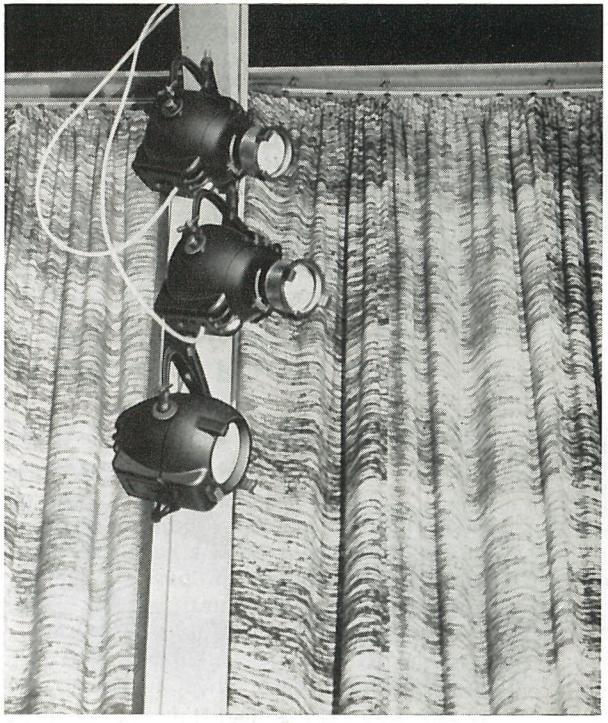
The beam is soft-edged and ill-defined and in consequence frosts are not required. Where the scatter of light is objectionable, as for example when the lantern is close to a night sky cyclorama, then a barn-door shutter may be fitted to intercept the light. There are four independent doors and the whole barndoor unit is made to rotate so that in fact some beam shaping can be carried out if desired but the correct lantern for the purpose is the Profile Spot.

Profile or Mirror Spots as they are more often called in this country, incorporate a gate aperture which is focused by a lens. A large solid angle of light

Royal Festival Hall, London. Strand Concert and Stage lighting.

is collected by a reflector and this is passed through the adjustable gate the shape of which is then projected by the lens. Strand Mirror Spots can be supplied with lenses of differing focal lengths. This is to ensure that as far as possible a lantern operates with its gate at a wide aperture. This provision together with an intensifying knob ensures that as little light as possible is wasted by being obstructed by the gate.

An example would be a Patt. 23 which with its gate half closed would cover 6 ft. at 30 ft. throw. Obviously it may be better to use a narrow beam Patt. 23N with its gate wide open and get twice the light from the same lamp. The gate of a Mirror Spot can carry a mask of any shape and in the case of the 500 watt Patt. 23 there is even a mica cloud slide which can be inserted.



Strand Baby Spots Patt. 123 and 23 are neatly styled so that concealment is often unnecessary.

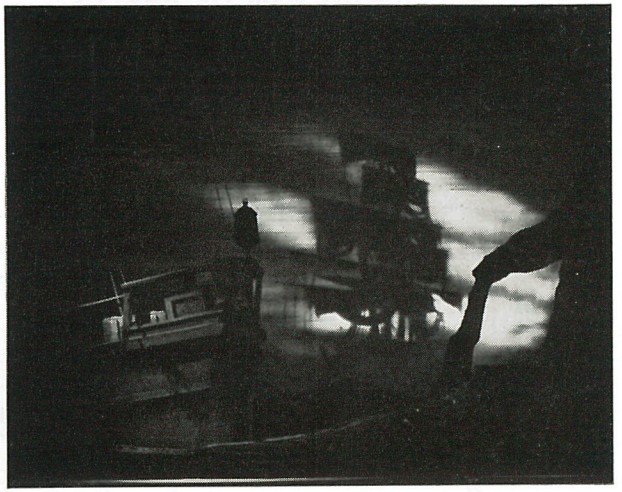
For most stage purposes four built-in independently adjustable shutters will be found most convenient because this is the lantern particularly suitable for Front-of-House work and straight-sided shutters allow the light to be cut off accurately at the proscenium, or where there is not one, then at the boundary between stage and audience. For picking out an artist and following, an iris giving a circular beam has become traditional. For this purpose the narrow angle lens systems give the best results and a 1kw. incandescent lamp completely outclasses open arcs of 30 to 60 amps. or so. For high intensity long throw work the Sunspot which is an arc with a mirror optical system is recommended.

Strand spotlights, whether Fresnel or Mirror, may be grouped into two wattage ranges 250-500 watt Baby range and the larger 1000/2000 watt Standard range.

The Baby Spots are very neat, well styled and compact. This taken with high light efficiency (they give over double that of the older plano-convex spots) has made them very popular. They have been found eminently suited to School Stage and Little Theatre work. Where extra wattage is required it is customary to double up two 500 watt Baby spots on one circuit as being neater and more unobtrusive than a larger 1000 watt spot, particularly out in the auditorium. However, it seems to the writer of these notes that this practice has less merit in the large scale professional theatre where it is also common on the stage itself. Lighting conceived in terms of fewer but larger wattage lamps will be more decisive and clean cut.

Royal Albert Hall, London. Strand Sunspot arcs at 200 feet throw.

Rather similar to the Profile spots are the Optical projectors although a condenser lens system is used in preference to a mirror as the principal collector of the light. A condenser lens system gives the more accurate field required for slide and optical effects projection. Strand manufacture two projectors—the Patt. 52, 1 kw. and the Patt. 152 2/4kw. The first is for general projection particularly of moving effects, cloud etc. The second when used in conjunction with the high definition Dallmeyer lenses may be used as a scene or background projector or alternatively as a high power source for optical effects. Listed in this catalogue are the standard Strand moving effects devices, waves, cloud etc. well known in the theatre but of recent years extensively used in television. In addition special optical and other effects are made to cover particular requirements.



Sadlers Wells Opera. Strand Optical Effects Projection for 'Flying Dutchman'.

A particular feature of stage and television lighting is the need to bring all circuits to a centralised control board and there to render these circuits expressive by means of dimmers and variable group control facilities. Such lighting controls fall into two main types:— (a) Direct Operated, where the dimmers are mounted on the Control Board itself and the main merit is inexpensive initial cost (b) Remote Control where the dimmers and load carrying equipment are separated from the control panel and in consequence do not dictate its size or position. The two types of Lighting Control are introduced as "Direct Operated Dimmer Boards" on page 12 and as "Remote Control" on page 16.

BATTENS · FOOTLIGHTS · GROUNDROW · FLOODLIGHTS

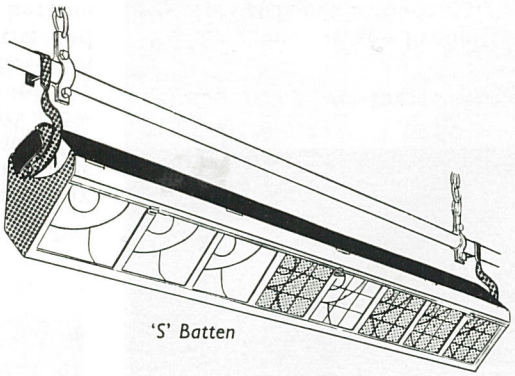
STANDARD BATTEN (S Type)

Constructed in heavy gauge sheet steel. Supplied in 6-ft. or 3-ft. lengths with compartments at 9-in. centres wired in 3/·036 P.V.C. for 3 or 4 colour circuits. Terminals are provided at both ends of the wiring trough and short tails are supplied to enable lengths to be joined end to end to make up the total length required. For 2 colour circuits use 4 colour and bunch circuits in pairs. A ref. 517 hanger to fix to 1½-in. gas barrel is included for each end of the total length and each intersection of 6-ft. or 3-ft. lengths.

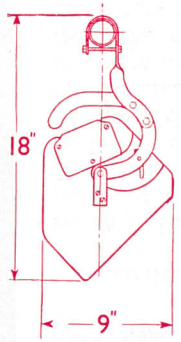
Each compartment is provided with a metal colour frame, an E.S. porcelain lampholder and an anodised aluminium reflector giving a wide angle beam free of filament striation, which permits the use of 60, 100, or 150 watt G.L.S. lamps.

Finish: Hard hammer-grey.

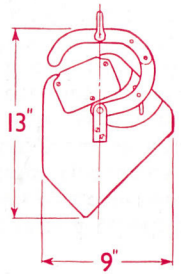
Prices do not include lamps or colour filters.



'S' Batten



Section 'S' Batten with ref. 517 hanger for barrel



Section 'S' Batten with ref. 518 hanger for line

Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Colour Frame Ref.	Weight lbs.	£ s d
SB/63	6-ft. length 8 compartments on 3 circuits ...	60, 100 or 150	G.L.S.	ES	240	46	15 12 0
SB/33	3-ft. length 4 compartments on 3 circuits ...					26	10 2 6
SB/64	6-ft. length 8 compartments on 4 circuits ...					46	16 7 0
SB/34	3-ft. length 4 compartments on 4 circuits ...					26	10 10 0
518	Shackle hanger (for dead-line suspension or ref. 259 ceiling saddle) instead of 517 hanger add suffix —/DL to above references					½	— — —
519	Cable gland for Batten Multicore cable ...					½	10 0

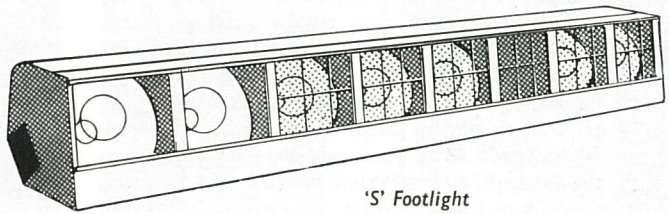
STANDARD FOOTLIGHT & GROUNDROW (S Type)

Supplied in 6-ft. or 3-ft. lengths with compartments at 9-in. centres wired in 3/·036 P.V.C. for 3 or 4 colour circuits. Terminals are provided at both ends of the wiring trough and short tails are supplied to enable lengths to be joined end to end to make up the total length required. For 2 colour circuits use 4 colour and bunch circuits in pairs. A pair of ref. 520 floor brackets can be added to any 6-ft. or 3-ft. length to provide an adjustable tilt Groundrow.

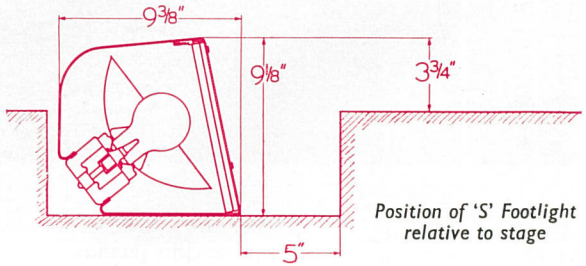
Each compartment is provided with a metal colour frame, an E.S. porcelain lampholder and an anodised aluminium reflector giving a wide angle beam free of filament striation, which permits the use of 60, 100, or 150 watt G.L.S. lamps.

Finish: Black crystalline (to avoid reflection).

Prices do not include lamps or colour filters.



'S' Footlight



Position of 'S' Footlight relative to stage

Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Colour Frame Ref.	Weight lbs.	£ s d
SF/63	6-ft. length 8 compartments on 3 circuits ...	60, 100 or 150	G.L.S.	ES	240	45	14 10 0
SF/33	3-ft. length 4 compartments on 3 circuits ...					25	9 0 0
SF/64	6-ft. length 8 compartments on 4 circuits ...					45	15 5 0
SF/34	3-ft. length 4 compartments on 4 circuits ...					25	9 7 6
520	Pair of floor brackets (to convert 6-ft. or 3-ft. length to adjustable tilt Groundrow)					2	2 0 0
521	Pair of floor brackets fitted with castors ...					4	3 15 0

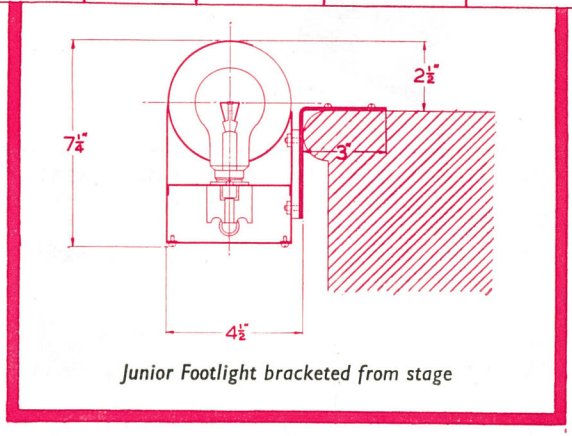
JUNIOR FOOTLIGHT
(Open Type)

With B.C. porcelain lampholders at 9-in. centres in white reflecting surface. Wired on 1 circuit with terminal block each end of the wiring trough. Supplied with fixing brackets and clips for colour filter.

Finish: Black cystalline (to avoid reflection)

Prices do not include lamps or colour filters.

Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Colour Frame Ref.	Weight lbs.	£ s d
JF/6	6-ft. length 8 lampholders on 1 circuit ...	40 or 60	Silica coated	BC	250	26	7 12 6
JF/3	3-ft. extension 4 lampholders on 1 circuit ...				250	13	4 10 0
250	Colour filter clips per dozen (spare)	... ...	... ...	... ...	... ...	— doz.	2 6
234	Colour frames (optional) set of four for 6-ft. length	...	... ...	... ...	... ...	—	1 17 6
254	Floor mounting plate with wing screw for use when footlight must be portable ...			... ...	... ...	— doz.	15 0



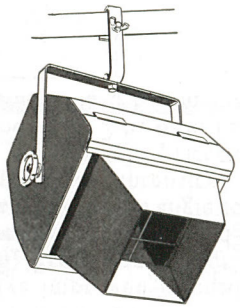
Junior Footlight bracketed from stage

FLOODLIGHTS

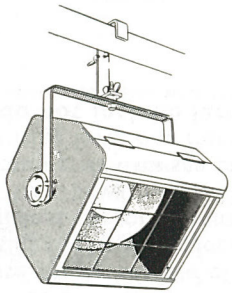
Floodlights are reflector units and give a fixed wide angle beam. Reflectors are anodised aluminium and floods are supplied with one metal colour frame, porcelain lampholder, 2-ft. 6-in. tails and tilting fork.

Finish: Hard hammer-grey, except Patt. 35

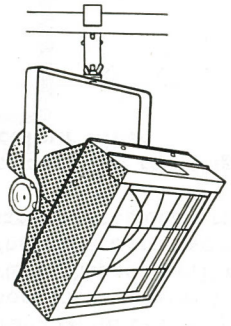
Prices do not include lamps or colour filters.



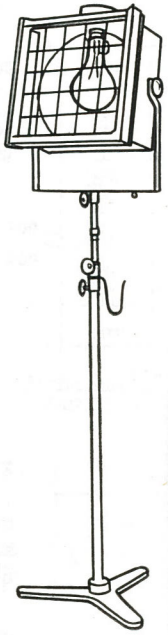
Patt. 137 Flood with Ref. 245 Hood



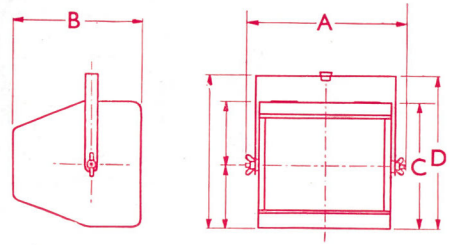
Patt 137 Flood



Patt. 60 Flood

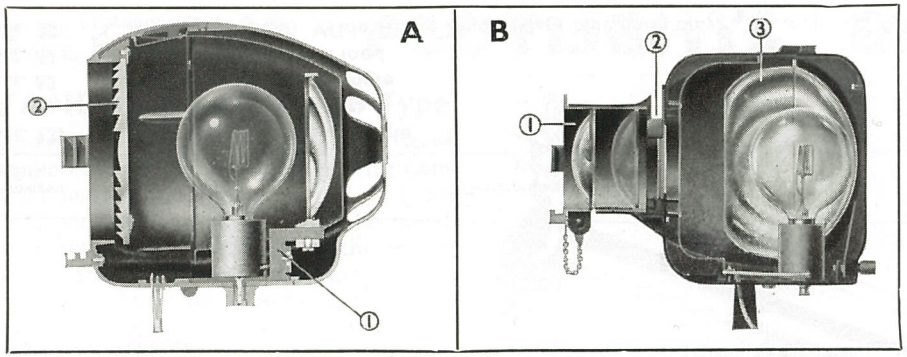


Patt. 49 Flood on stand



Guide to lantern dimensions

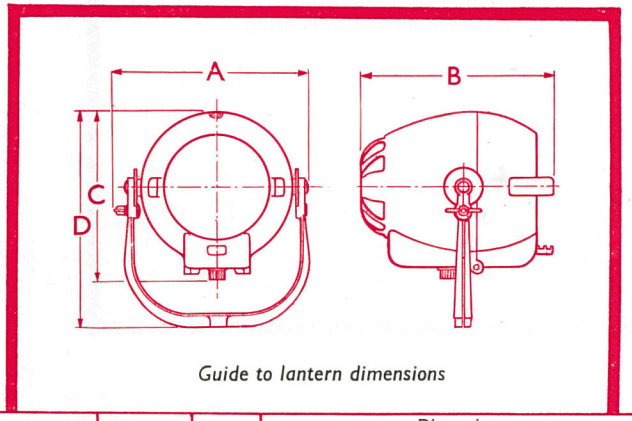
Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Beam	Colour Frame Ref.	Width A ins.	Depth B ins.	Height C ins.	Height D ins.	Weight lbs.	£ s d
Patt. 137	**Junior Flood – Wide Angle**	**60/200**	G.L.S.	ES	100°	240	12	9½	9¾	12	8	2 17 6
245	Masking Hood for above	—	—	—		—	9¼	4	8	—	1	6 6
Patt. 60	**Stage Flood – Wide angle**	**300/500**	G.L.S.	GES	100°	61	14½	14¾	12½	15	14	7 0 0
Patt. 49	**Large Wide Angle Flood**	**1000**	G.L.S.	GES	100°	67	18	13	21½	26½	27	11 5 0
Patt. 35	**Arena (Vertical) Wide Angle Flood** (Dark blue finish only)	**1000**	G.L.S.	GES	100°	70	16½ dia.	—	18¾	20¼	17	11 10 0



SPOTLIGHTS

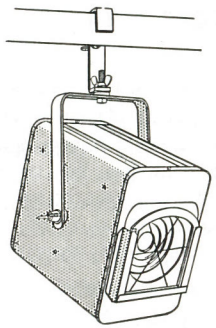
Spotlights are of two types: (**A**) "Soft Edge" in which the lamp and reflector (1) move relative to a lens(2) to give various circular beams. All Strand lamps of this type now give improved intensity because the lenses are of the short focus Fresnel type. (**B**) 'Profile' or 'Mirror' spots using the lens(1) to focus a variable shaped gate(2) through which light is directed by an efficient mirror system(3). Where there are two or three ranges of beam angle to choose from, as with Patt. 23, the narrower the beam range the greater the intensity. For photometric data see page 30.

All spotlight prices include tilting fork, one frame for colour, heat resisting wiring ending in 2-ft. 6-in. tails, but **do not include lamp or colour filter.**
Finish: Hard hammer-grey.

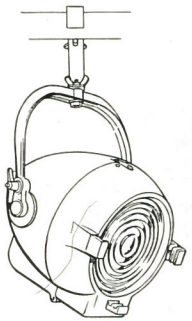


Guide to lantern dimensions

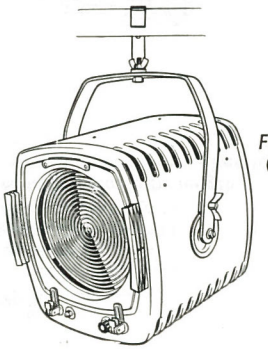
Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Beam	Colour Frame	Dimensions Width A Ins.	Depth B Ins.	Height C	(Ins.) D	Weight lbs.	£ s d
(A) FRESNEL (SOFT EDGE) SPOTS												
Patt. 45	**Junior Spot** (4½-in. dia. lens, no reflector)	**250 or 500**	T	P.28	11/45°	76	9	11½	9¼	12¼	8¾	**4 17 6**
Patt. 123	**Baby Fresnel Spot** (6-in. diam. Fresnel lens and reflector)	**250 or 500**	T	P.28	16/45° 24/55°	401	11	10½	9	11½	5¾	**9 17 6**
Patt. 123W	**Baby Fresnel Spot Wide Angle**	—	—	—	—	—	—	—	—	—	—	
—/LS	Lead screw focusing. Add suffix /LS to Patt. 123 or 123W	—	—	—	—	—	—	—	—	—	—	add **1 5 0**
132	Barndoor attachment (4 doors)	—	—	—	—	—	7½	1	8½	—	2¼	**1 5 0**
Patt. 243	**Fresnel Spot with prefocus holder** (10-in. diam. lens)	**1000**	T	P.40	15/50°	61	15½	15½	15	19	30	**19 17 6**
Patt. 243BP	**Fresnel Spot with Bi-post holder**	**2000**	S	Bi38								
133	Barndoor attachment (4 doors)	—	—	—	—	—	12	1½	12	—	3½	**3 17 6**
599	Pageant attachment (circular mask)	—	—	—	—	—	12	—	12	—	1¼	**17 6**
Patt. 543	**Outdoor Fresnel Spot with rear door access** (unwired)	**1000**	B1	GES	15/55°	351	15½	15½	15	19	30	**35 0 0**



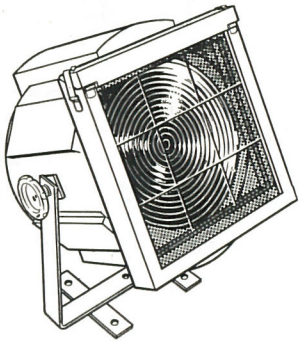
Junior Spot Patt. 45 (rear door access)



Fresnel Spot Patt. 123 (front door access)



Fresnel Spot Patt. 243 (front door access)



Outdoor Fresnel Patt. 543 (rear door access)

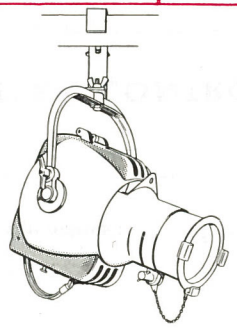
(B) MIRROR (PROFILE) SPOTS (All Patt. 23 type have Ref. 362 diaphragms except —/S models which have Ref. 366 diaphragms)

Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Max. Beam	Colour Frame	Dimensions Width A Ins.	Depth B Ins.	Height C	(Ins.) D	Weight lbs.	£ s d
Patt. 23	**Baby Mirror Spot**	**250 or 500**	T	P.28	22°	359	11	13	9	12	6¼	9 17 6
Patt. 23F	**Baby Mirror Spot with Fresnel lens**				30°						6¼	9 17 6
Patt. 23W	**Baby Mirror Spot wide angle**				37°						7	10 17 6
Patt. 23N	**Baby Mirror Spot narrow angle**				11°	284	11	19½	9	12	8½	13 15 0
Patt. 23N/RH	**Baby Mirror Spot narrow angle as above but rebalanced with rear handle**				11°	284	11	21	9	12	9½	15 10 0
. —/H	Rear handle model to 23, 23F, or 23W above. Add suffix —/H	—	—	—	—	—	—	—	—	—	—	add 10 6
. —/S	Built in adjustable shutters (except 23N/RH.) Add suffix —/S	—	—	—	—	—	—	—	—	—	—	add 1 10 0
376 ...	Hand operated colour wheel for Patt. 23, 23F or 23W	—	—	—	—	—	11	—	11	—	1½	4 5 0
362 or 366	Set of four diaphragms of various diameters (spare)	—	—	—	—	—	3½	—	3½	—	½	4 0
363 ...	Iris diaphragm	—	—	—	—	—	3½	—	3½	—	¼	12 6
364 ...	Adjustable straight-edged mask	—	—	—	—	—	3½	—	3½	—	¼	4 6
512 ...	Mica cloud slide	—	—	—	—	—	3½	—	3½	—	—	1 10 0
374 ...	Glass diffuser in frame for Patts. 23 and 23W	—	—	—	—	—	3½	—	3½	—	¼	5 6
375 ...	„ „ „ „ for Patt. 23/N	—	—	—	—	—	4	—	4	—	1	8 3
							7¾	—	7¾	—		

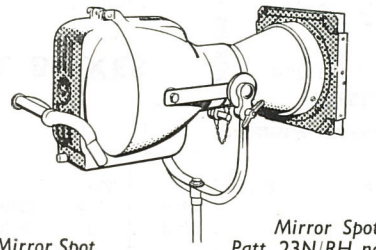
Patt. 23 MIRROR SPOT CONVERSIONS

	£ s d
Patt. 23 to Patt. 23N. Discard front tube and use: Ref. 355. Lens tube with lens and colour frame.	5 16 6
Patt. 23 to Patt. 23W. Insert additional: Ref. 310. Lens 3½-in. diam. by 5-in. focus H.R.	1 0 0
Patt. 23N to Patt. 23. Discard front tube and use: Ref. 356. Standard tube with lens and colour frame.	1 19 0

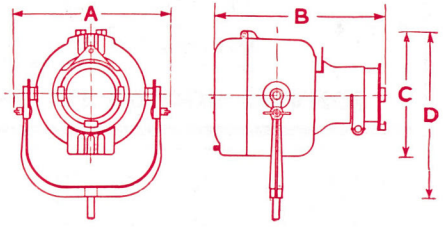
Conversion to built-in shutters (—/S) or to rear handle (—/H) types is not possible. These must be regarded as different models.



Mirror Spot Patt. 23



Mirror Spot Patt. 23N/RH narrow angle model with rear handle

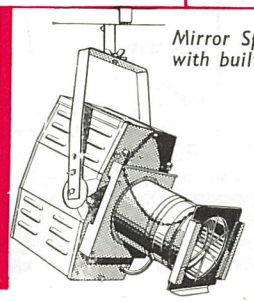


Guide to lantern dimensions

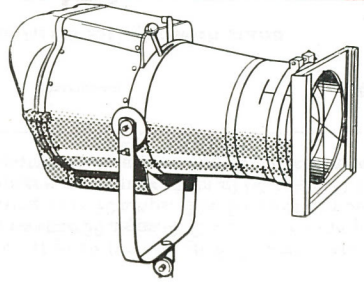
Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Max. Beam	Colour Frame	Dimensions Width A Ins.	Depth B Ins.	Height C	(Ins.) D	Weight lbs.	£ s d
Patt. 53	**Mirror Spot** (built in shutters)	**1000**	T	P.40	19°	284	13½	21½	17½	20½	37	28 0 0
Patt. 53W	**Mirror Spot** As above but wide angle	**1000**			38°							31 15 0
105 ...	Iris diaphragm for Patt. 53 and 53W	—	—	—	—	—	11	—	7	—	1¼	3 5 0
375 ...	Glass diffuser in frame for Patt. 53 and 53W	—	—	—	—	—	7¾	—	7¾	—	1	8 3
Patt. 93	**Long-range Mirror Spotlight** (built-in Iris and removable adjustable masking plate)	**1000**	A.1	P.40	15°	370	13¾	28	14½	18¾	45¼	54 10 0
373 ...	Glass diffuser in frame (Patt. 93)	—	—	—	—	—	9⅞	—	9⅞	—	1¾	9 0
372 ...	Spare adjustable straight-edged mask (Patt. 93 and 93N)	—	—	—	—	—	7	—	7	—	1¼	2 10 0
Patt. 93N	**Extra long-range Mirror Spotlight**	**1000**	A.1	P.40	8°	61	13¾	36	14½	18¾	48	65 10 0
94 ...	Glass diffuser in frame (Patt. 93N)	—	—	—	—	—	11¾	—	11¾	—	3	9 0
Patt. 12	**ADB Picture Spot with shutters and fixing plate**	**100**	—	SBC	25°	—	6	6¼	5½	7	2¾	9 10 0

Patt. 53 & 93 SPOTLIGHT CONVERSIONS

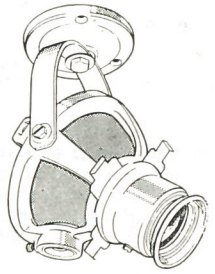
	£ s d
Patt. 53 to 53W. Discard lens tube and use: Ref. 354 lens tube.	8 1 0
Patt. 53W to 53. Discard lens tube and use: Ref. 353 lens tube.	4 6 0
Patt. 93 to 93N. Discard lens tube and use: Ref. 480 lens tube and colour frame.	20 10 0
Patt. 93N to 93. Discard lens tube and use: Ref. 481 lens tube and colour frame.	9 10 0



Mirror Spot Patt. 53 with built-in shutters

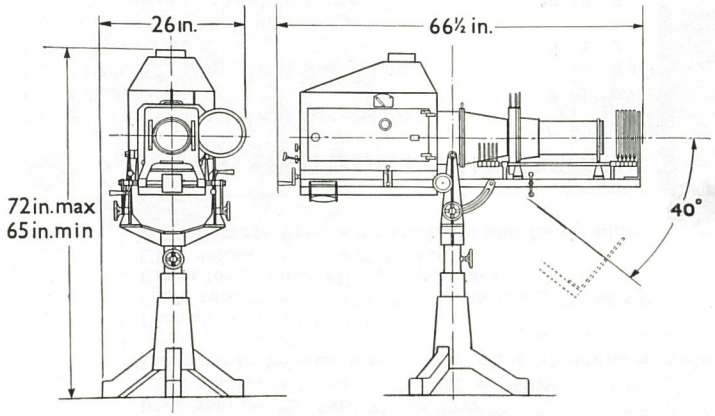


Long Range Mirror Spot Patt. 93



Pattern 12 Picture Spot

ARC SPOTLIGHTS



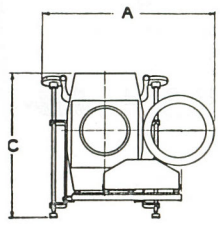
The Pattern 501 Mirror Arc is designed for use on A.C. with a special inductor unit, consequently its efficiency is considerably increased. Using less than 20 amps. A.C. from, for example 220v., supply mains, as much light is produced as from an ordinary D.C. arc using over 90 amps. The Sunspot can be readily adapted for use on D.C. and due to the efficient optical system, this lantern, at its maximum of 60 amps. D.C. will give as much light as an ordinary 90 amp. D.C. arc. A special heavy cast stand forms part of this lantern assembly. **Prices do not include the supply of carbons.**

Catalogue Ref.	Description	Beam	Colour Frame	Weight lbs.	£ s d
Patt. 501	**Sunspot Mirror Arc Spotlight with stand**	15.5° max.	495 mag. 85 single	316	**390 0 0**
Patt. 501M	**As above but with automatic motor arc feed and stand** (Specify A.C. or D.C.) ...				**432 0 0**
408 ...	Spare dowser plate for above	—	—	—	**6 0**
289 ...	100 amp. Inductor (Specify input voltage and frequency) 20 x 19 x 24-in. high	—	—	224	**120 0 0**
406 ...	Carbon economisers for A.C. Sunspot ...	—	—	—	**18 0**
407 ...	Carbon economisers for D.C. Sunspot ...	—	—	—	**1 15 0**
Carbons	A.C. 100 amp. 9 mm x 12-in. HI Alternalux			per 100	**9 13 0**
	D.C. 60 amp. Pos. 10 mm x 12-in. HI c/c			per 100	**8 16 0**
	Neg. 7 mm x 12-in. HI c/c			per 100	**5 11 0**

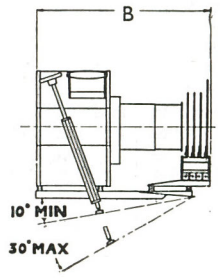
REMOTE CONTROL COLOUR FILTERS

Lantern with solenoid selected motor semaphore type
(Prices include 4 removable colour frames, mechanism, tails wired to multi-way plug and a socket box but not lamps or filters)

Catalgue Ref.	Description	Watts	Lamp Class	Lamp Cap	Beam	Colour Frame Ref.	Width A ins.	Depth B ins.	Height C Max. ins.	Height C Min. ins.	Weight lbs.	£ s d
Patt. 53C/CU	**Mirror Spot with 4 colours and white, unenclosed**	**1000**	T	P.40	19°	325	24	24	25	28½	56	**78 0 0**
Patt. 93C/CU	**Long-range Mirror Spot with 4 colours and white, unenclosed** ...	**1000**	A.1	P.40	15°	101	24½	32½	35	30	73	**108 0 0**
Patt. 93NC/CU	**Extra long range Mirror Spot as above**				8°	99	28	40½	35	30	75	**123 0 0**



Dimensions
Patt. 53 C/CU
see table above



C/C LANTERN CONTROL BOXES

Complete with 5 switches per lantern (4 colours and white). Master Change Push and 165-volt rectifier for lantern coils.

Catalogue Ref.	Description	Width ins.	Height ins.	Depth ins.	Weight lbs.	£ s d
2	2 way	13	8	10	17	**32 0 0**
4	4 ,,	18	8	12	20	**48 0 0**
6	6 ,,	20	10	12	40	**68 0 0**
8	8 ,,					**86 0 0**
10	10 ,,	28	10	14	54	**100 0 0**
12	12 ,,					**114 0 0**

Patt. 23 and 123 COLOUR CHANGE

		£ s d
Ref. 382	Motor driven wheel for 5 colours to fit colour runner on Patt. 23, 23F and 23W lanterns. 12-in. dia. Wt. 2½ lbs. ...	**9 0 0**
Ref. 400	Ditto for Patt. 23N/R.H. 17½-in. dia. Wt. 5½ lbs.	**11 0 0**
Ref. 410	Ditto for Patt. 123. 17½-in. dia. Wt. 5½ lbs.	**11 0 0**
Suffix —/S	1 R.P.M. motor instead of 4 R.P.M.	**add 5 0**
Suffix —/LV	110-120 volt instead of 220-250.	**add 18 0**
Ref. 388	Set of 5 Cinemoid colours for 382 above	
Ref. 390	Ditto for 400 or 410 above	

REMOTE CONTROL BOXES

Switches for five positions and continuous running. One wheel per way only. Master fitted to 385, 386, 387 and 389.

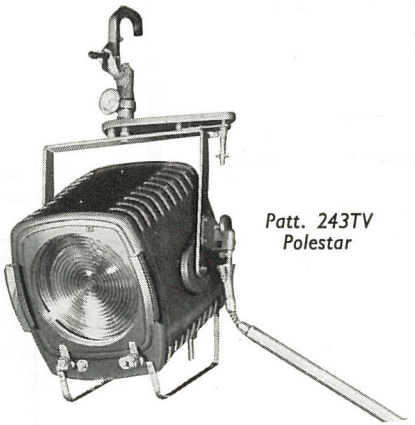
Catalogue Ref.	Description	Width ins.	Depth ins.	Height ins.	Weight lbs.	£ s d
383	1 way	4	3½	4	1½	**3 10 0**
384	2 ,,	7½		4	3	**6 12 6**
385	4 ,,	7½		8	4½	**11 12 6**
386	8 ,,	11		13	9	**21 7 6**
387	12 ,,	16½		12	12	**31 7 6**
389	6 ,,	13		8	7	**17 7 6**

TELEVISION LIGHTING

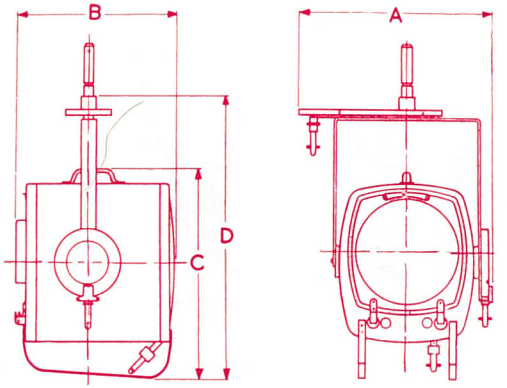
Strand Electric have great experience of modern Television production lighting and their lighting control systems are installed in all television studios in Britain. Such equipment has also been extensively exported.

Listed below are items, other than control equipment (see pages 16-21) which are television variants of apparatus manufactured by Strand Electric in the large quantities required for stage lighting at home and abroad; in consequence the prices represent exceptional value. For photometric data see page 30.

Where complete television lighting schemes are required Strand Electric will advise and/or supply the complete equipment. All spots have a simple colour or diffuser frame. Book type frames ref. 585 or 587 are extra.



Patt. 243TV Polestar



Guide to lantern dimensions

Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Beam	Width A ins.	Depth B ins.	Height C ins.	Height D ins.	Weight lbs.	£	s	d
†Patt. 123TV	**Fresnel Spot** with wide angle lens, lead-screw focusing, lens guard, 2-ft. 6-in. heat resisting tails and T.V. spigot BS 2063	500	T	P.40	24/55°	11	10¾	10½	12	8	11	17	6
†Patt. 123TV Polestar	**Fresnel Spot** as above but arranged for remote pole operation of pan, tilt and focus					13½	10¾	10½	17½	13	26	0	0
†Patt. 123W/LS	**Fresnel Spot** with wide angle lens, lead-screw focusing, 2-ft. 6-in. heat resisting tails and ⅜-in. Whit bolt & wing nut for 483 hook clamp					11	10¾	10½	12	6	11	2	6
131	Four-door rotatable barndoor shutter for pole operation	—	—	—	—	11½	1	8½	—	2	2	2	0
585	Hinged frame for diffuser	—	—	—	—	6½	—	6½	—	¼		13	0
586	Lens guard	—	—	—	—	6	—	6	—	¼		6	0
‡Patt. 243TV	**Fresnel Spot** with lead-screw focusing, lens guard, carrying handle, internal terminal block and T.V. spigot BS 2063	2000	S	Bi38	15/55°	15½	15½	15	19¾	32	20	15	0
‡Patt. 243TV Polestar	**Fresnel Spot** as above but arranged for remote pole operation of pan, tilt and focus					19	15½	17½	25½	38	36	0	0
Patt. 243BP	**Fresnel Spot** with lead-screw focusing, 2-ft. 6-in. heat resisting tails and ½-in. Whit. bolt & wing nut for 483 hook clamp					15½	15½	15	19¾	30	19	17	6
133	Four-door rotatable shutter for pole operation	—	—	—	—	16½	—	16½	—	3	3	17	6
587	Hinged frame for diffuser	—	—	—	—	12	—	12	—	½		16	6
588	Lens guard	—	—	—	—	10	—	10	—	½		7	0
†Patt. 149TV	**Scoop** with wire guard and T.V. spigot BS 2063	1000	Internally Silica coated	GES	Wide	18½	16	18½	—	8	8	7	6
†Patt. 149	**Scoop** with ½-in. Whit. bolt & wing nut for 483 hook clamp	—								6	7	5	0
589	Wire guard	—	—	—	—	18½	—	18½	—	½		12	6
584	Colour frame for Scoop					18½	—	18½	—	½		18	0
Patt. 152BP	**High Intensity Effects and Scene Projector** see page 10												
Patt. 23 & 93	**Mirror (Profile) Spots** see page 7												

ACCESSORIES

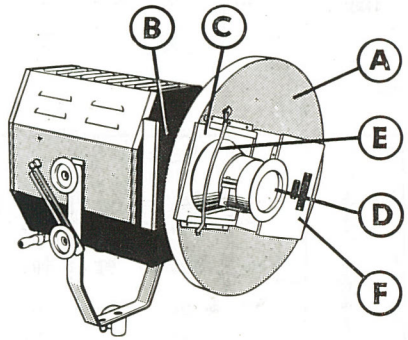
		£	s	d
†Extra for 25-ft. flexible 40/·0076 fitted		1	1	0
‡Extra for 25-ft. flexible 110/·0076 fitted		1	19	0
590	8-ft. pole with bayonet cup for Polestar lanterns. Weight 2¼lb. nett	8	10	0
591	4-ft. interlocking extension for above. Weight 1lb. nett	3	10	0
592	1⅛-in. dia. hollow T.V. spigot for lanterns fitted with ⅜-in. Whit. bolt & wing nut. (500 watt and under). Weight 2 lb.		10	0
593	1⅛-in. dia. hollow T.V. spigot for lanterns fitted with ½-in. Whit. bolt & wing nut. (1000 watt and over). Weight 2 lb.		10	0
594	Clamp for 2-in. ext. dia. barrel for lanterns fitted with T.V. spigot. Weight 2½ lb. nett	3	5	0
483	Hook type clamp for 2-in. ext. dia. barrel for lanterns fitted with ⅜-in. or ½-in. bolt & wing nut. Weight ¾ lb.		3	8

OPTICAL PROJECTORS AND EFFECTS

Effects of this type consist of lantern (see Patt. 52 and 152), effect attachment, and objective lens (see figure on right). Stationary slides require a normal slide carrier and turntable front instead of an effect attachment. Slides for the Patt. 152 Scene Projector are to special order only and can be provided as black and white or colour photographs. These slides can be made in such a way that distortion through acute angular projection can be corrected. A special slide carrier (ref. 516) can be used to change five slides remotely from ref. 383 control box, page 8.

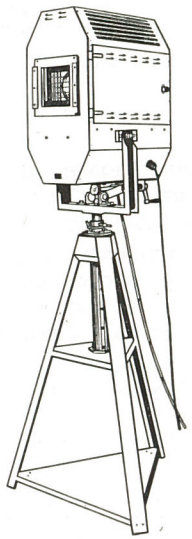
Please state voltage and frequency of supply if other than 200/250 volt 50 cycles when ordering equipment fitted with motors.

Patt. 52 with effects disc and objective lens in position. The effect has been rotated by means of turntable to give downward diagonal direction to the projected effect. (A) Disc housing. (B) Turntable casting. (C) Colour (or mask) and objective runners. (D) Objective lens. (E) Objective lens retainer spring. (F) Motor housing.

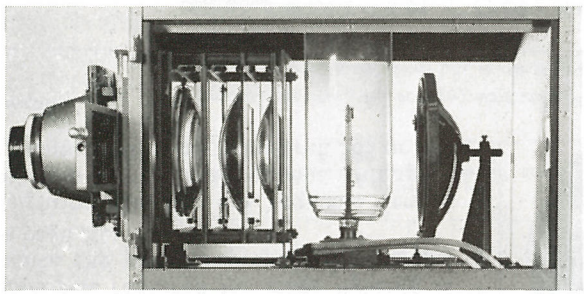


OPTICAL EFFECTS PROJECTORS

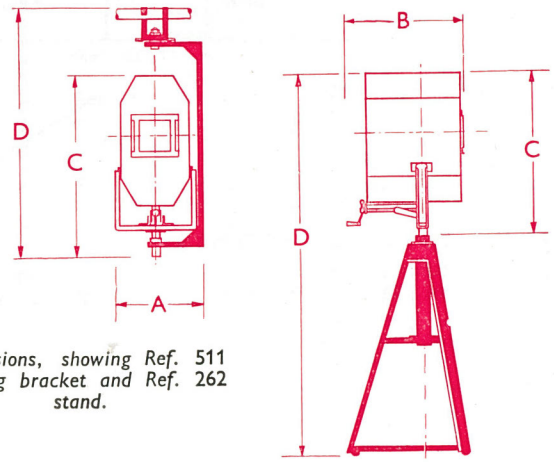
Catalogue Ref.	Description	Watts	Lamp Class	Lamp Cap	Width A ins.	Depth B ins.	Height C ins.	Height D ins.	Weight lbs.	£ s d
Patt. 52	**Optical Effects Projector** (stands and suspensions, see page 22)	**1000**	A.1	P.40	12	15¾	13½	20	26	**22 10 0**
Patt. 152	**High Intensity Effects and Scene Projectors with ref. 262 special stand, prefocus lampholder, and silent motor blower**	**2000**	see page 27	P.40	27	23½	31¾	74–89	128	
Patt. 152/H	**As above but with ref. 511 special hanging bracket**				16¾	23	31¾	48	105	**169 0 0**
Patt. 152BP	**As Patt. 152 above but with Bipost holder for 110v. 4kW, lamp**	**4000**	see page 27	Bi 38	27	23½	31¾	74–89	128	
Patt. 152BP/H	**As Patt. 152BP above but with ref. 511 hanging bracket**				16¾	23	31¾	48	105	
522 ...	220/250v. input, 4 kvA output at 110v. class H insulation transformer with anti-surge limiter	—	—	—	9	12	—	9	62	**65 0 0**
262 ...	Special stand (in addition to hanging bracket)	—	—	—	27	23½	—	42–57	44	**25 0 0**
511 ...	Special hanging bracket (in addition to stand)	—	—	—	16¾	6	—	48	21	**25 0 0**



Patt. 152 on stand



Patt. 152 opened to show condenser system and two heat absorbing glasses. Slide carrier and lamp are cooled by silent blower in lantern base.



Dimensions, showing Ref. 511 hanging bracket and Ref. 262 stand.

OPTICAL EFFECTS PROJECTORS ACCESSORIES

	£ s d
154—Turntable front only to take either slide carrier 155 or 156 below ...	5 10 0
155—Standard (metal) slide carrier (slide size 3¼-ins. square)	3 0 0
156—Universal (metal) slide carrier (slide sizes 3¼-ins. square to 4-ins. x 3¼-ins.)	5 0 0
516—Slide carrier for remote change of 5 slides	on application
343—Adjustable metal mask for limiting beam shape to proscenium, etc. ...	1 1 0
346—Beam diverter mirror for objective assemblies 151, 152, 153	1 5 0

MOVING EFFECTS ATTACHMENTS excl. lantern or lens

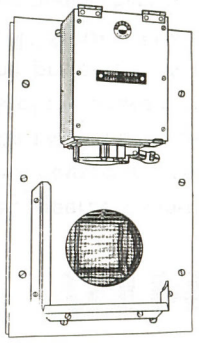
DISC TYPE Glass with effect photographed or otherwise reproduced, 18¾-in. diam. aluminium housing, with A.C. electric variable speed drive. Turntable to set angle of travel of effect and runners for colours or mask, and for objective lens assembly. Weight 11½ lb. approx. (Discs without cases are available).

	Complete £ s d	Disc only £ s d
134—Fleecy Clouds (A)	33 0 0	9 10 0
135—Storm Clouds (A)	33 0 0	9 10 0
136—Rain (C)	34 10 0	11 10 0
137—Snow (B)	33 0 0	9 10 0
138—Running Water (B)	49 0 0	24 0 0
140—Smoke (B)	41 10 0	17 0 0
141—Flames (C)	35 0 0	10 10 0
147—Dissolving Colours	33 0 0	9 10 0
148—Forked Lightning – Hand operated with 1 slide	14 0 0	

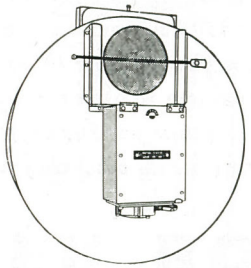
Discs are only interchangeable with effects of the same letter reference.

BOX TYPE Reciprocating action in wooden case 10½-in. wide x 17½-in. high. Weight 9½ lb. Otherwise as above.

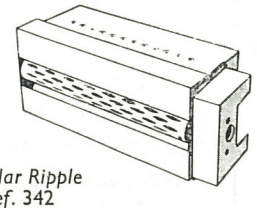
	£ s d
143—Sea Wave	29 10 0
144—Water Ripple	32 10 0
145—Under Sea	32 10 0
342—Tubular Ripple Effect (Self contained)	27 10 0



Box Type Effect



Disc Type Effect



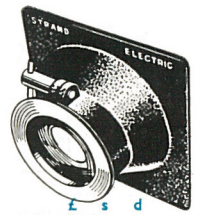
Tubular Ripple Ref. 342

Self-contained in sheet-metal case with A.C. electric motor drive and requiring no projection lantern or lens. For close range work behind groundrows only. Weight 28 lbs. To use 1000W Class FL/2 Tubular lamp.

OBJECTIVE LENS ASSEMBLIES

STANDARD SHORT FOCUS

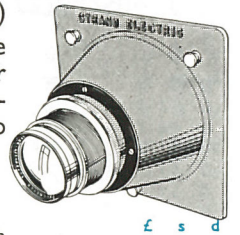
Aluminium cast housing with sliding brass lens jacket, secured by thumbscrew, complete with best-quality 3½-in. diam. British lenses, and backplate to fit effect attachment runner. Weight 3¼ lb.



	£ s d
151—2½-in. focus, extra wide angle, 21 ft. sq. (3¼-in. x 3¼-in. slide) at 15-ft.	8 8 0
152—3-in. focus, wide angle, 15-ft. sq. (3¼-in. x 3¼-in. slide at 15 ft.)	8 8 0
153—4-in. focus, narrow angle, 9-ft. 9-in. sq. (3¼-in. x 3¼-in. slide) at 15-ft.	8 8 0

HIGH DEFINITION FOR PATT. 152 (all models)

These high quality lenses **must** be used for scene projection and many effects are also improved by their use as the black areas are not spoilt and strong contrast results. A backplate is required to fit the lens to effect or turntable front.



	£ s d
391—4-in. Dallmeyer Super Six Anastigmat Objective lens with micrometer focusing, 9-ft. 9-in. sq. at 15-ft.	nett 55 0 0
392—Lens backplate for above	2 13 6
393—6-in. Dallmeyer Super Six Anastigmat Objective lens with micrometer focusing, 6-ft. 6-in. sq. at 15-ft.	nett 87 0 0
394—Lens backplate for above	2 13 6

(The Ref. 393 6-in. lens is highly recommended and is to be preferred when the throw permits).

ULTRA VIOLET LANTERNS AND FILTERS FOR FLUORESCENT EFFECTS

	£ s d
Patt. 230C U.V. Display Flood	4 7 6
The following are required for the above:	
125W Black Lamp	3 3 0
Ref. 405 Choke	4 10 0
Ref. 379 Self-contained fitting complete with switch start control gear and choke for 4-ft. U.V. tube lamp	5 10 0
4-ft. 40-watt U.V. tube lamp for 379 above ... subject to purchase tax	3 10 0
For full details including fluorescent paint and other materials see booklet BLACK LIGHT	
Ref. 380 Black glass filter in frame for Patt. 501	5 6 0
Ref. 381 Black glass filter only	3 15 0

DIRECT OPERATED

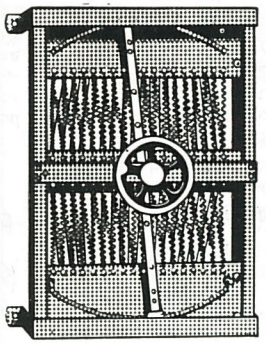
DIMMER BOARDS

Direct operated dimmers take two main forms, the slider in which the resistance is housed in a sheet metal casing and which is used mounted on the front of the switchboard and the Sunset slate or element types, which are mounted back of the board and operated by a handle and control link. These latter are to be preferred, as they allow dimmer handles to be grouped to a master wheel. Sunset slate or element type resistance dimmers cannot be supplied other than as part of a dimmer board assembly. Where, however, an inexpensive dimmer is required which does not have to be mounted as an integral part of the dimmer board or even be mounted as part of a dimmer board at all, the slider dimmer can be used.

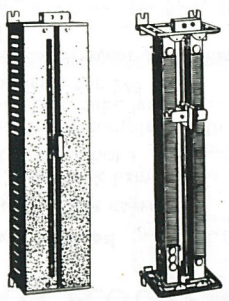
To ensure that every stage, however restricted the funds available, should have a switchboard capable of carrying out basic lighting cues, Strand Electric introduced in 1950 the Junior Stage Switchboard. An essential feature of the Strand Junior System is the provision of two switches to each circuit. One allows the circuit to be put on the master blackout or independent of it and the other allows the circuit to be switched on full, thus releasing the dimmer for other duties. It is usual to supply 50% dimmers as a maximum and experience has shown this number to be adequate for the kind of work likely to be encountered. To reduce initial outlay the Junior Slider boards can be purchased if necessary without any dimmers at all. Subsequently, dimmers can be acquired and fitted as and when funds permit. To keep the cost down, Junior Slider Boards are made up of standard units and permit a number of standard variants. Special requirements should be avoided. Where a single 8 or 12 circuit board is required to be extended later on site, a second unit can easily be linked electrically and mechanically by a local wiring contractor.

For those who prefer a back-of-board dimmer with mechanical interlocking, the Junior Sunset Flexible circuit is available. In this case, the dimmers are grouped on two shafts each with their master wheel and they can be locked down by a simple twist of their handles. The circuits can be arranged on their dimmers by plugging up. Where a complete set of dimmers is preferred, a range of standard sizes is listed in two forms—Junior Sunset or heavy duty Senior Sunset.

FUSES. Rewireable fuses are standard for these boards but other forms can be supplied as an extra, see page 32.



Type G Sunset



Slider dimmer

CONSTANT RATING—For special applications when the normal theatre rating may be unsuitable, i.e. for indefinitely prolonged use at intermediate positions, the wattages shown in the column headed "Constant" should not be exceeded.

SLIDER TYPE DIMMERS (A.C. ONLY)

This range has been rationalised so that all requirements are covered by the variable types scheduled below. Each dimmer is fitted with a scale and will effectively control to dim-out any load between and including the wattages stated, and an off position is provided.

Watts.	200-250v. Ref.	100-120v. Ref.	Approx. Dimensions inches			Weight lbs.	£ s d
			Height	Depth	Width		
60/120	530	560	14	4	5	7	3 12 6
100/200	531	561					
250/500	532	562	17	5	5	13	4 15 0
300/600	533	563					
500/1000	534	564	23	5	5	15	5 2 0
600/1200	535	565					
1000/2000	536	566	23	5	10	30	9 10 0
1200/2400	537	567					
2600/3000	538	—	23	5	10	30	9 10 0

WALL MOUNTING "SUNSET" DIMMERS (220-250v AC)

These are intended for use as single control units for auditorium, lecture theatre, dance hall and other such tungsten lighting installations. Where control from more than one position, i.e. stage, projection room, etc., is required, the Automatic Dimmers, page 15 are recommended. *On 110/120 volts there are two types only:—P/L and Y/L for fixed loads up to 2·5 and 5 kW respectively.

Type	Maximum watts per phase			Phases	Approx. inches			Weight lbs.	£ s d
	Theatre	Type	Constant		Height	Depth	Width		
O	2500	OC	2000	1	13	7	20	20	17 15 0
*P	3500	PC	3000	1	13	7	20	24	18 15 0
G	5000	GC	4000	1	25	9	24	43	28 15 0
O2	2500	O2C	2000	2	13	12	20	40	32 0 0
*Y	7000	YC	6000	1	13	12	20	48	36 0 0
Y2	3500	Y2C	3000	2	13	12	20	48	37 0 0
J	10000	JC	8000	1	25	12	24	67	44 10 0
J2	5000	J2C	4000	2	25	12	24	67	52 0 0
K	15000	KC	12000	1	25	15½	24	89	71 10 0
K3	5000	K3C	4000	3	25	15½	24	89	75 10 0

PORTABLE DIMMERBOARDS

Interlocking with wheel master. Slate "Sunset" dimmers fitted to each way, except for loads over 1 kW when Element type are used. Single 2-way-and-off switch (B.O. Indep.) to each way. Master blackout switch. Mains terminals and 15 amp. 3-pin BS circuit sockets at rear—A.C. single-phase 2-wire 220-250 volt. Also available 110-120v. A.C.

(There are Slider portables in "Junior" range below).

Type	Description	Width ins.	Depth ins.	Height ins.	Weight lbs.	£	s	d
PS.8	8-ways 500/1000 watt variable load	45	25½	45	308	130	0	0
2PS.8	8-ways 1000/2000 watt	45	25½	45	336	175	0	0

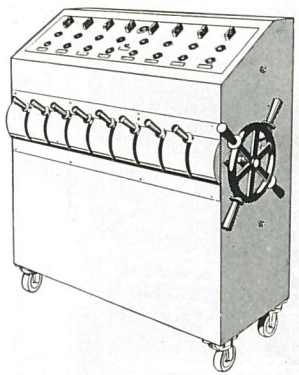
"JUNIOR SLIDER" STAGE DIMMERBOARDS

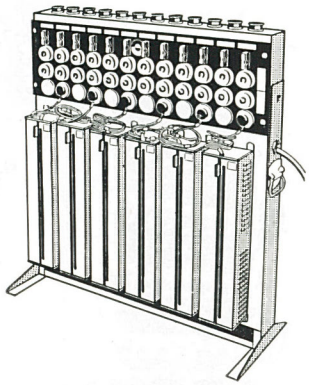
Plugging system for slider type dimmers to allow them to be shared among a greater number of circuits. *Space for full set of dimmers but normal recommendation is 50% dimmers as set out below. When 100% dimmers are used an extra front plate has to be added, see (4) and (5) under Extras below. Locking type fuse. On-off switch and 2-way switch (B.O. Indep.) to each circuit. Silent Master blackout switch and terminals for wall mounting master dimmer. A.C. single-phase 2-wire 220-250 volt, circuits not to exceed 1 kW each.

Type	Description	Width ins.	Depth ins.	Heigth ins.	Weight lbs.	£	s	d
HA.8	8 circuits and space* for 4 dimmers Frame JA	25	8¾	64	56	31	0	0
HA.12	12 ,, ,, ,, ,, 6 ,, ,, JB	36			84	37	5	0
HA.16	16 ,, ,, ,, ,, 8 ,, ,, JA+JA	50			112	64	0	0
HA.20	20 ,, ,, ,, ,, 10 ,, ,, JA+JB	61			140	70	5	0
HA.24	24 ,, ,, ,, ,, 12 ,, ,, JB+JB	72			168	76	15	0

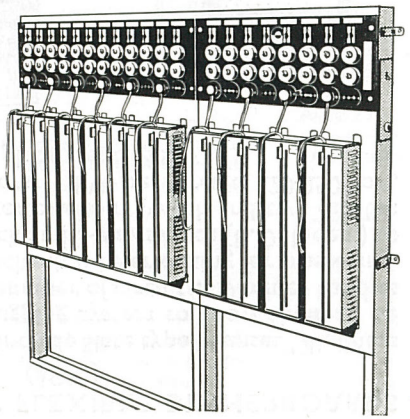
Extras

(1) Circuit name engraved instead of circuit number as standard	per label		2	9
(2) Sheet metal back to switch panel where board does not stand against suitable wall:				
(a) To fit JA frame		1	6	0
(b) To fit JB frame		1	13	0
(3) Joining two frames at right angles instead of end to end to save space		2	10	0
(4) Supplying and fitting at works, extra front plate to take second row of dimmers	JA	3	0	0
	JB	3	10	0
(5) Supplying extra front plate for customer to fit	JA	1	12	0
	JB	2	0	0
(6) Board light for striplite lamp (fitted at Works)	per frame	3	0	0





(Above left) Portable interlocking dimmer board P.S. type



(Above right) Portable slider board CAR type

(Right) Junior Slider board type HA20.

JUNIOR SLIDER BOARDS WITH SOCKET OUTLETS

With 3-pin plugs and socket outlets instead of terminals for outgoing circuits.

Type	Description	Width ins.	Depth ins.	Height ins.	Weight lbs.	£	s	d
HA.8/Plug	8 circuits and space* for 4 dimmers Frame JA	25	8¾	64½	58	36	0	0
HA.12/Plug	12 ,, ,, ,, ,, 6 ,, ,, JB	36	8¾	64½	87	44	10	0

PORTABLE JUNIOR BOARDS

with circuits, plugs and sockets. Full sized Easel type or cut down CAR version.

HA.8/Easel	8 circuits and space* for 4 dimmers Frame JA	25	8¾	64½	76	39	15	0
HA.12/Easel	12 ,, ,, ,, ,, 6 ,, ,, JB	36	8¾	64½	104	48	5	0
HA.8/Car	8 circuits and space for 4 dimmers only ,, JA	25	8¾	40	56	39	15	0
HA.12/Car	12 ,, ,, ,, ,, 6 ,, ,, ,, JB	36	8¾	40	84	48	5	0

DIMMERS FOR JUNIOR SLIDER BOARDS

Ref. 544	Slider 500/1000 watt ... Board Mounting	5⅛	5	23	15	5	4	6
Ref. 542	,, 250/500 ,, ... with 2-ft. lead	5⅛	5	17	13	4	17	6

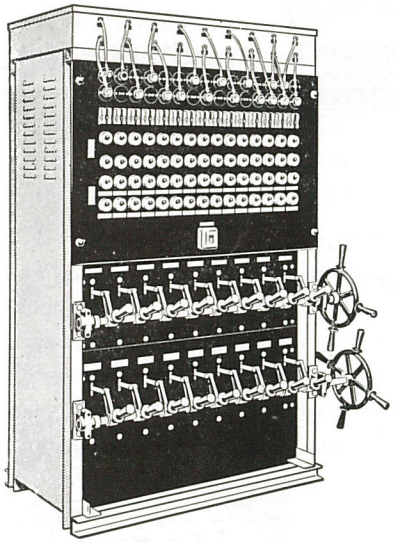
MASTER DIMMERS FOR JUNIOR SLIDER BOARDS (Wall Mounting)

Type JG	"Sunset" 2000/4000 watt ... Width 6-ft.	24½	9	25	43	32	2	0
Type JJ	,, 4000/8000 ,, ... 3-cord lead in metallic hose	24½	12	25	67	48	0	0

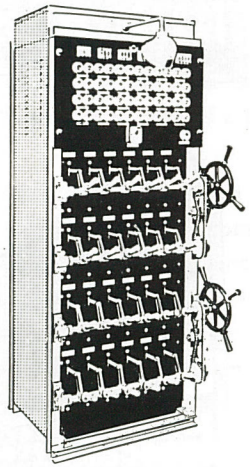
*Where full set of dimmers is required see EXTRAS (4) and (5) above.

"JUNIOR SUNSET" FLEXIBLE DIMMERBOARDS (JS/F)

Standard Type. These include Slate type "Sunset" dimmers (500/1000 watt) with plugging system to allow them to be shared among a greater number of circuits. Dimmer handles fitted with scales and mechanical interlocking for mastering. Locking fuse, on-off switch and 2-way switch (B.O. Indep.) to each circuit. Silent master blackout switch and two capstan master wheels for dimmers. 1 kW per circuit, 220-250 volt, A.C. only. Board is completely enclosed.



Junior Sunset Flexible Board type JS/F30



Junior Sunset JSN/24

Type	Description	Width ft. ins.	Depth ft. ins.	Height ft. ins.	Weight cwt.	£ s d
Standard						
JS/F.18	18 circuits and 10 dimmers ...	3 0	3 2	6 1	5½	233 0 0
JS/F.24	24 ,, ,, 12 ,, ...	3 5	3 2	6 1	7½	272 0 0
JS/F.30	30 ,, ,, 18 ,, ...	4 3	3 2	6 1	9½	352 0 0

VARIATIONS (limited by space and a 60 amp. triple pole master blackout switch)

Each dimmer and handle omitted	deduct	6 14 0
Each switch circuit omitted	deduct	1 9 6
Each switch circuit increased to 10 amps	add	15 6
Each dimmer over 1kW and up to 2kW	add	5 15 6
Each accessory circuit (2-way and off) i.e. one 5-amp. switch (JS/F only=1 pair)	add	1 9 6
Each accessory circuit (1-way and off) i.e. one 5-amp. switch	add	1 5 3

Extra switches with fuses possible:

JS/F 18 ... 2 singles or 1 pair

JS/F 24 ... 10 singles or 5 pairs

JS/F 30 ... 12 singles or 6 pairs

All JS/N ... 8 singles

All JS/W ... 12 singles

"JUNIOR SUNSET" DIMMERBOARDS (JS/N and JS/W)

As "Junior Sunset" Flexible types except that each circuit has its own Slate type "Sunset" dimmer and the plugging system is therefore omitted. Interlocking is to a pair of capstan master wheels except in models with suffix A where there is a separate master to each shaft.
Single 2-way-and-off switch (B.O. Indep.) to each way.

Type	Description	Width ft. ins.	Depth ft. ins.	Height ft. ins.	Weight cwt.	£ s d
JS/N.12	12 dimmers in 2 rows	3 2	3 2	5 6	6	231 0 0
JS/N.12/A	12 ,, ,, 2 ,, ...	3 4	3 2	5 6	6	227 0 0
JS/N.18	18 ,, ,, 3 ,, ...	3 1	3 4	6 6	7½	298 0 0
JS/N.18A	18 ,, ,, 3 ,, ...	3 4	3 4	6 6	7½	294 0 0
JS/N.24	24 ,, ,, 4 ,, ...	3 1	3 2	7 3	9	365 0 0
JS/N.24A	24 ,, ,, 4 ,, ...	3 4	3 2	7 3	9	357 0 0
JS/W.16	16 ,, ,, 2 ,, ...	3 10	3 4	5 6	6½	269 0 0
JS/W.16A	16 ,, ,, 2 ,, ...	4 1	3 4	5 6	6½	265 0 0
JS/W.24	24 ,, ,, 3 ,, ...	3 10	3 4	6 6	8½	357 0 0
JS/W.24/A	24 ,, ,, 3 ,, ...	4 1	3 4	6 6	8½	353 0 0
JS/W.32	32 ,, ,, 4 ,, ...	3 10	3 4	7 3	10	448 0 0
JS/W.32/A	32 ,, ,, 4 ,, ...	4 1	3 4	7 3	10	440 0 0

"SENIOR SUNSET" DIMMERBOARDS (S S Type)

Heavy duty boards with Type A Element "Sunset" Dimmers to each circuit. Can be wound for loads up to 2500 watt fixed or 1000/2000 watt variable. Dimmer handles interlock to master capstans at the end of each row. Shafts can be chained together to operate together at will of operators. 15 amp. locking fuse and 15 amp. 2-way-and-off-switch (B.O. Indep.) to each way. Master blackout switch (A.C. only. 220-250 volt)

Type	Description	Width ft. ins.	Depth ft. ins.	Height ft. ins.	Weight cwt.	£ s d
SS/21	21 dimmers in 3 rows	4 0	3 4	6 7	9	523 0 0
SS/27	27 ,, ,, 3 ,, ...	5 1	3 4	6 9	12	650 0 0
SS/28	28 ,, ,, 4 ,, ...	4 0	3 4	7 8	11	658 0 0
SS/36	36 ,, ,, 4 ,, ...	5 1	3 4	8 0	14	848 0 0

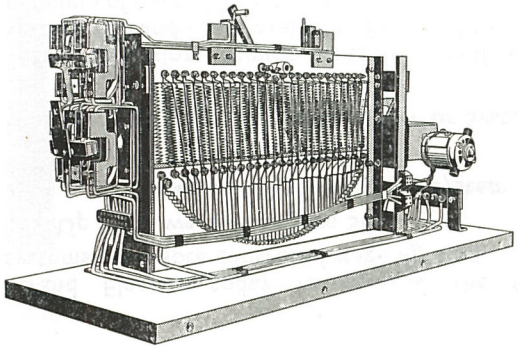
VARIATIONS: For omitting "Sunset" element type dimmer and handle 11 16 0

ACCESSORY SWITCHING: For each extra switch (2-way and off) and fuse 3 3 0

EXTRA SWITCHES AND FUSES POSSIBLE SS/21 ... 2 SS/27 ... 9 SS/28 ... 3 SS/36 ... 3

AUTOMATIC DIMMERS

Motorised dimmers for A.C. tungsten lighting loads are designed to be connected in series with the phase supply to a distribution board, and therefore the only fuse fitted is to protect the control circuit. Supplied internally wired and with louvred sheet metal covers. State type ref., circuit wattage and voltage when ordering.



Auto 6 with cover removed

UP DOWN-STOP (TABLE 1)

To raise, lower, or stop at intermediate positions the house lighting of theatres, cinemas, lecture halls, etc. from one or more remote sets of push buttons. Dimmers open circuit at lower limit of travel.

COLOUR CYCLE (TABLE 2)

Automatic dimmer controlling the three or four colours of multi-colour lighting equipment so as to give a cycle of change and then repeat until switched off. Suitable principally for shop window, ballroom, exhibition display and fountain work.

RECIPROCATING (TABLE 3)

There are two main types: one UD/R to raise, dim, raise, dim the same circuit automatically until stopped: the other CO/R to cross fade two circuits to and fro until stopped. Both are suitable for small displays in shop windows, exhibitions, etc.

TABLE 1

Theatre Rating Type	Phases	KW per phase 220–250v	KW per phase 110–*120v	Constant Rating Type	Phases	KW. per phase 220–250v	KW. per phase 110–*120v	Length ft. ins.	Depth ft. ins.	Height ft. ins.	Weight	£ s d
Auto 3	1	1	—	—	—	—	—	1 9	1 1	1 6	70 lbs	75 0 0
Auto 4	1	2·5	—	Auto 4C	1	2	—	1 9	1 1	1 6	70 lbs	80 0 0
Auto 5	1	3·5	2·5	Auto 5C	1	3	2	1 9	1 1	1 6	70 lbs	82 0 0
Auto 6	1	5	—	Auto 6C	1	4	2·5	2 9	1 2	1 9	¾ cwt	92 0 0
Auto 6A	1	7	5	Auto 6AC	1	6	4	1 9	1 5½	1 6	¾ cwt	97 0 0
Auto 6A2 ...	2	3·5	2·5	Auto 6A2C	2	3	2	1 9	1 5½	1 6	¾ cwt	97 0 0
Auto 71	1	10	—	Auto 71C	1	8	5	2 9	1 6	1 9	1 cwt	120 0 0
Auto 72	2	5	—	Auto 72C	2	4	2·5	2 9	1 6	1 9	1 cwt	120 0 0
Auto 73	3	3·5	2·5	Auto 73C	3	3	2	2 9	1 9	1 6	1 cwt	120 0 0
Auto 81	1	15	—	Auto 81C	1	12	7·5	2 9	1 6	1 9	1¼ cwt	152 0 0
Auto 83	3	5	—	Auto 83C	3	4	2·5	2 9	1 6	1 9	1¼ cwt	152 0 0

**Add suffix —/L to type ref. for 110/120v. models.*

CONSTANT RATING—For special applications when the normal theatre rating may be unsuitable, i.e. for indefinitely prolonged use at intermediate positions, the wattages shown in the column headed "constant" should not be exceeded.

Variable load plus or minus ⅓ windings can be supplied provided top wattage does not exceed 80 per cent of those shown in schedule above.
Larger loads subject to special enquiry.
Standard equipment includes one set of push-switches. Extra sets of push-switches can be supplied £2 0 0 each.

TABLE 2

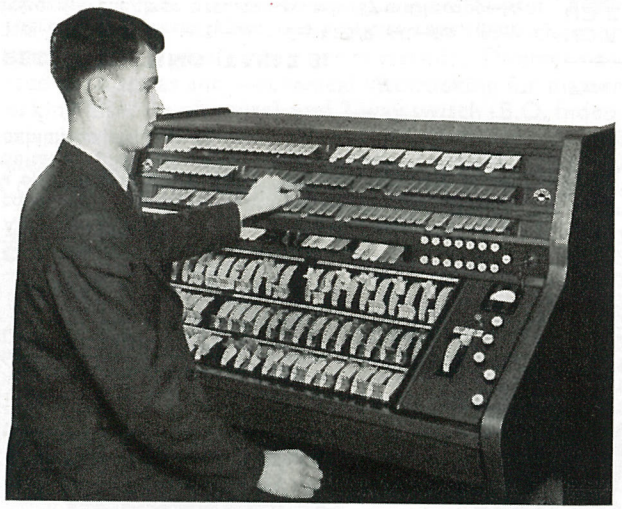
Type	Phases	Colour	KW per colour per phase 220–250v	KW per colour per phase 110–*120v	Max. Demand KW 220–250v	Max. Demand KW 110–*120v	Length ft. ins.	Depth ft. ins.	Height ft. ins.	Weight (approx.)	£ s d
Auto 12	1	3	2·5	2	5	4	2 1	2 3	1 7		106 0 0
Auto 12A	1	3	3·5	2·5	7	5	2 1	2 3	1 7	1¼ cwt	108 0 0
Auto 13	1	4	2·5	2	5	4	2 3	2 3	1 7		110 0 0
Auto 13A	1	4	3·5	2·5	7	5	2 3	2 3	1 7		112 0 0
Auto 14	1	3	5	—	10	—	2 9	2 6	1 7	1¾ cwt	140 0 0
Auto 15	1	4	5	—	10	—	3 0	2 6	1 7		147 0 0
Auto 22	3	3	2·5	2	15	12	3 11	2 6	1 7		300 0 0
Auto 22A	3	3	3·5	2·5	21	15	3 11	2 6	1 7	2 cwt	306 0 0
Auto 23	3	4	2·5	2	15	12	4 4	2 6	1 7		312 0 0
Auto 23A	3	4	3·5	2·5	21	15	4 4	2 6	1 7		318 0 0
Auto 24	3	3	5	—	30	—	6 3	2 6	1 7	3 cwt	400 0 0
Auto 25	3	4	5	—	30	—	7 0	2 6	1 7		432 0 0

**Add suffix –/L to type ref. for 110/120v. models.*

TABLE 3

Type	Circuits	Watts per circuit	Length ft. ins.	Depth ft. ins.	Height ft. ins.	Weight (approx.)	£ s d
UD/R	1	Up to 3000, 220-250v	2 0	1 1	1 4	½ cwt	57 0 0
UD/R/L	1	Up to 2000, 110-220v					
CO/R	2	Each up to 300 only ... 220-250v only	2 0	1 1	1 4	½ cwt	48 0 0

STRAND REMOTE CONTROL



Savoy Theatre, London. Strand 120-way system CD remote control.

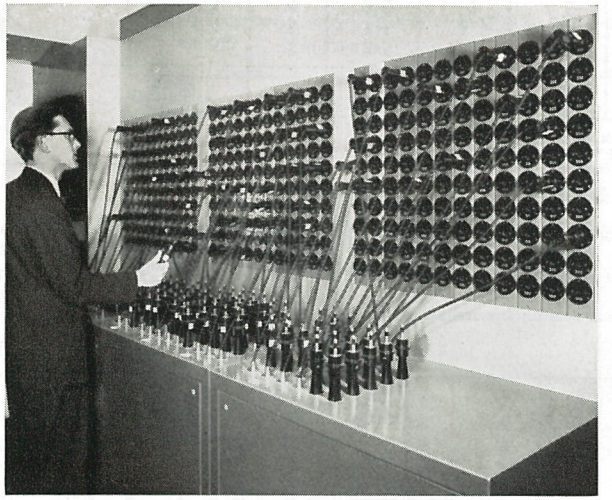
Strand Electric today recommend the following systems of remote control of stage lighting.

Up to 54 ways — System SR.
,, ,, 96 ways — System LC. or System PR.
,, ,, 120 ways — System CD
,, ,, 250 ways — System CD/W or System C.

For television studios suitable modifications of systems CD and C are available. By use of patching, the problem of over 250 control channels can be avoided in television studios and this solution may be applicable to the very large theatre and opera house stage installation to keep the control size within bounds.

Dimmers. Strand Electric can supply various forms of *all-electric* dimmers and as an alternative *servo-operated* transformer and resistance dimmers. The Strand all-electric dimmers use the saturable reactor (SR.) as the basic unit modified as necessary and financial outlay permits by transistorised auxiliary circuits (LC.) to give better performance in respect of variable load, presetting, etc. Other all-electric dimmers are thyratron type (of which over 2,500 have been supplied) but which on account of its inefficiency in respect of heat loss may be regarded as of the past, and the SCR which functions in the same way as thyratrons by chopping the waveform but after extensive long term tests and experiments may well become the dimmer of the future. Neither of these are recommended for adoption at the moment or in the near future.

For the larger installations, any form of all-electric dimmer is unsuitable until the principle of inertia can be incorporated but for small installations or for situations where freedom from maintenance is the most important requirement they are ideal. An all-electric system has no moving parts to go out of adjustment. Where, as in the transistorised forms, the circuitry is complicated and specialised, in the unlikely event of a fault, repair is effected by simply unplugging the defective unit and plugging in a spare. As with all transistorised equipment these units are small and light-weight and easily transmitted to our Works or local branch for overhaul.



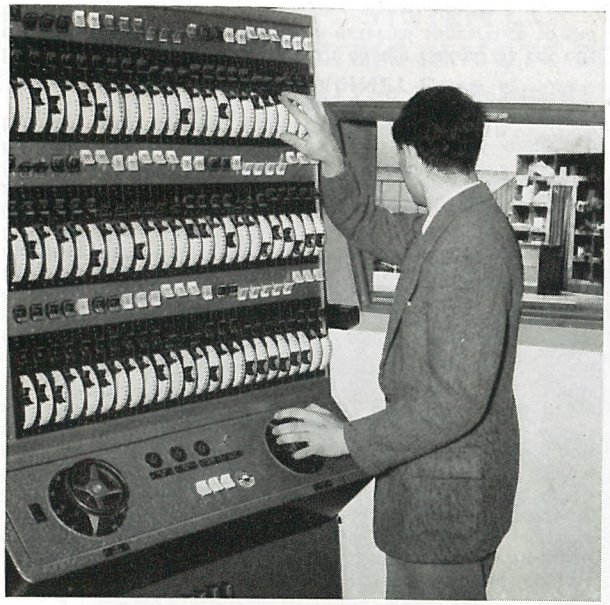
Associated-Rediffusion Studio, Wembley. One of the 400-circuit Strand Patching Fields.

Owing to the relatively low price of all Strand dimmers a Strand control uses a large number of smaller wattage dimmers instead of the small number of large wattage dimmers with the inevitable "Patching" to extend their use which high dimmer prices compel and which has become the practice in the United States. Obviously a separate dimmer to each important circuit is the best principle, as this gives flexibility in the use of lighting.

All Strand control panels and desks are provided with switching to form variable groupings to two or more masters. Three dimming groups and two switching groups can usually be formed in all-electric systems.

In the electro-mechanical systems CD and C, use is made of the inertia principle to provide 14 or 20 groups by means of an instantly adjustable memory preset action. The inertia in the electro-mechanical system derives from the fact that once the dimmer has been driven to its position through clutch and motor from a remote lever through a servo-system, the servo can be disconnected to leave the dimmer and the light stationary at the level it was last called. With an all-electric system the dimmer, whatever its form, has to be constantly activated from the control to hold its level. This ability in the inertia systems to be concerned only with the dimmers which have to change,

Drury Lane Theatre. Earlier form of remote control—Strand Light Console, 216 dimmers. (Photo by courtesy. "Radio Times")



Adelaide University, Australia.
Strand all-electric Saturable Reactor remote control.

has led Strand to a radically different approach to the large theatre or television installation. These Strand systems unlike those of other makers do not breed multitudes of preset dimmer levers. Strand Electric are confident that their controls not only offer facilities in advance of those of others but that their systems are infinitely more compact and require much less space.

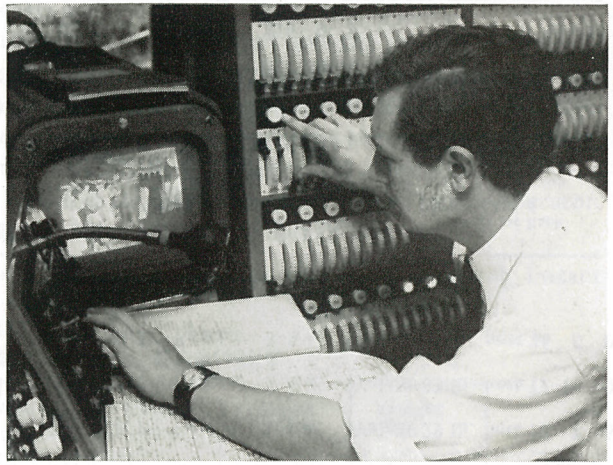
There remains the question of complete memory or automatic plotting. In April, 1959, Strand Electric demonstrated publically the first fully automatic lighting control in the World—Strand System KTV. In this instance, punched card is used to record all changes. On play-back not only is the lighting repeated exactly as when recorded but the switchboard controls *automatically and instantly repeat their exact set-up at the time of punching the card.* Thus immediate modification to lighting is always possible, a facility which is invaluable during rehearsal and run throughs. The provision of dimmer controls which instantly repeat what has been recorded has allowed another facility to be incorporated which represents great advance—Shift. This permits the operation of a large number of dimmers from a small number of controls. The controls are made to scan by shift buttons the particular group or series at that precise moment. These groups may be permanently associated with families of lighting (cyclorama, front of house spots, bridge spots, etc.) as in an opera house or theatre, or with particular scenes in a television studio. In this way dimmer controls are so to speak brought to the operator rather than the operator move around a large desk.

Experiments with our full sized system K.T.V. console have nevertheless shown us that punched card is fundamentally unsuited to rehearsal and this even when, as in our case, the card sets up the control panel

Strand system KTV. (patent applied for). The first dimmer system with fully automatic plotting of lighting and switch-board controls in the world (April, 1959).

as well as the lighting. It is the rehearsal facilities which are important, not those for subsequent reproduction. In the theatre once the first night is over the operator is over the principal hurdle. In television every night is a first night in any case and no subsequent reproduction is required. Meantime experiment goes on and when the perfect switchboard memory appears Strand Electric will let you know.

Strand Electric have unique facilities for development of lighting controls due to their close contact with actual production in the theatre and in television, It is a strict rule that their engineer designers must



BBC Television Studios. Lighting Supervisor using Strand system C control. (Photo by courtesy BBC).

approach these controls from the operators end. Too often with others, the electric form and cost of the latest gimmick is allowed to distort the ultimate purpose of all lighting controls which is to allow the operator immediate expression—painting with light.

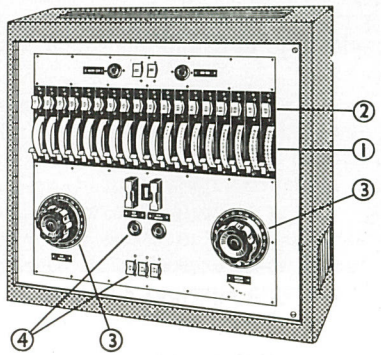
This achievement and facility of Strand Control is well summarised by the photograph above which shows a B.B.C. lighting supervisor modifying his lighting during the brief instant the particular shot is on his monitor.

FLUORESCENT LIGHTING AND DIMMING

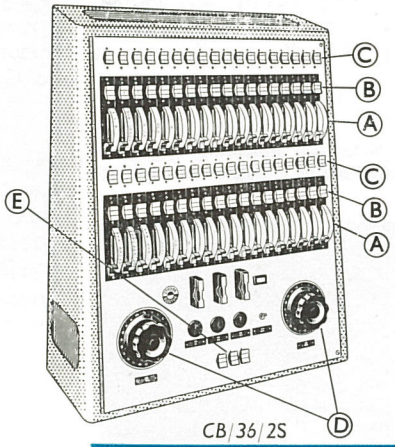
Except in the case of the light blue circuits of very large cycloramas fluorescent lamps have no place in stage lighting. In the auditorium the sparkle and lower levels of tungsten lamps are more likely to create the atmosphere for theatrical performance. Where however fluorescent lighting (as at the Royal Festival Hall or the Portsmouth Guildhall) is required to make its particular contribution to the decorative lighting scheme Strand Electric can control dimmers made by others as part of their fluorescent circuit or manufacture dimmers in co-operation with the supplier of the fluorescent lighting. It cannot be too strongly stated that every installation, whether hot or cold cathode, is quite individual and must be planned as a whole. The whole process bears no resemblance whatever to the simple methods required for normal incandescent lighting where all that is necessary is to insert a dimmer in series with the feed.

SYSTEM SR
ALL-ELECTRIC REMOTE CONTROL

This system comprises a control cabinet, remote racks and saturable reactor dimmers. There are three control cabinets—A and B are for wall mounting as standard but a table mounting variant can be supplied. Type C is floor standing only. All models now have two master dimmers. A second switch to each circuit is fitted as standard on cabinet C. This permits separate grouping-up for master dimming and for master switching. Cabinets A and B with the suffix—2S to the cat. type also have these extra switches and the consequent additional flexibility in operation.



CA/18



CB/36/2S

CONTROL CABINET A (CA/18)

(1) Moulded individual dimmer units with stud contact potentiometers and scales clearly marked 0–10 with half divisions.
(2) Three position switches with engraved knobs grouping circuits to Master Dimmer A and Blackout A, or off, or to Master Dimmer B and Blackout B.
(3) Master Dimmer A and Master Dimmer B with 330° knob rotation for slow motion.
(4) Switches for rapid dimming and Blackouts A and B.

CONTROL CABINET B (CB/36/2S)

(A) Moulded individual dimmer units with stud contact potentiometers and scales clearly marked 0–10 with half divisions.
(B) Three position switches with engraved knobs grouping individual dimmer levers to Master Dimmer A, or independent live, or to Master Dimmer B.
(C) Three position switches grouping to Blackout A, or off, or to Blackout B.
(D) Master Dimmer A and Master Dimmer B with 330° knob rotation for slow motion.
(E) Switches for rapid dimming, Blackouts A and B.

CONTROL CABINET C

Floor mounting and complete with *all the controls* as set out under cabinet B above. Similar in external appearance to the Preset system below.

SCHEDULE OF CONTROL CABINETS

Catalogue Type	Cabinet	No. of Ways	Width ins.	Dimensions Depth ins.	Dimensions Height ins.	Weight lbs.	£ s d
CA/18	A	18	29	12	28	120	235 0 0
*CA/18/2S						125	260 0 0
CB/24	B	24	29	13	38	145	320 0 0
CB/24/2S						150	355 0 0
CB/36	B	36	29	13	38	155	390 0 0
*CB/36/2S						160	445 0 0
CC/54	C	54	36	16	72	366	765 0 0

These cabinets have no space available for accessory controls.

Junior Control Box (Type JC8) to house a maximum of 8 ways. No mastering fitted as this number of levers can be operated together by the fingers. **£95**

Extras available at the time of manufacture

		£ s d
Four leg base for Cabinet A or B	... ...	add £12
Four leg base for Cabinet A or B with castors	... ...	add £15
Switchboard Light for Cabinet C	... ...	add £ 3

DIMMER RACKS

All racks are wired complete with all internal connections, external circuits being brought to a row of terminals. Each circuit includes an English Electric H.R.C. cartridge fuse and a contactor (to ensure stage circuit is really dead in the "off" position of switch). A neutral bar with terminals is provided. Each rack is a self-contained unit and may be placed against the wall, rear access being unnecessary. Covers are fitted as standard to relay panels but when required for complete rack are an extra.

REACTOR DIMMERS

A.C. only. State voltage and frequency.
Tapped to terminals to allow load adjustment.

			£ s d
Type SR/05	Reactor 0·5 kw.	Weight 17 lb.	nett 8 8 0
Type SR/1	Reactor 1 kw.	Weight 29 lb.	nett 11 7 6
Type SR/2	Reactor 2 kw.	Weight 63 lb.	nett 17 15 0
Type SR/3	Reactor 3 kw.	Weight 78 lb.	nett 26 5 0

Type	Max. Ways	Max. Load	Dimensions Width ins.	Dimensions Depth ft. ins.	Dimensions Height ft. ins.	Weight cwt.	Rack only £ s d	Covers for Rack £ s d
CR/8	8	3kW	3 9	1 9¼	2 3	1	120 0 0	10 0 0 extra
CR/18	18	2kW	3 9	1 9¼	5 6½	3½	192 0 0	17 0 0 extra
CR/24	24	2kW	4 8	1 9¼	5 6½	4	257 0 0	20 0 0 extra
3CR/18	18	3kW	4 6	1 9¼	5 6½	3¾	210 0 0	20 0 0 extra

SYSTEM L C
ALL-ELECTRIC REMOTE CONTROL WITH ONE PRESET

Control Cabinet type CLC/72

Dimmer Rack LCR/24
with reactor dimmers and
transistor amplifiers

System L.C. employs saturable reactor dimmers with a small transistorised amplifier to each to provide better regulation (50% load without tap change) and the low control currents essential to presetting. An installation comprises a number of standard racks. The racks will take 24 dimmers of which three may be 3kw. For 5 kw. a separate 5 kw. floor standing reactor unit is required. Each rack is self-contained with its power pack.

Control Cabinet. The standard unit is floor standing in three sizes to take 48, 72 and 96 dimmer control channels. A special desk for seated operator can be supplied as an extra. Two finger tip moulded dimmer levers with large scales (0-10 with half divisions marked) are provided per channel which as this system L.C. is all-electric enables *one complete change to be preset ahead* of the lighting in use. The presets are banked in alternate rows one above each other so that lighting levels can easily be matched, yet the operator when "playing" a change is not impeded by having to pick out alternate levers.

Above each pair of preset levers are two three-position engraved tablet switches. The top one controls the circuit blackout contactor and the lower one (amber) allows dimmers to be formed at will into three groups each with their master faders, thus avoiding waste of a complete preset for changes covering part of the stage. There are three pairs of master faders corresponding to the three switch positions. The whole control however, can instantly be switched to the centre pair to allow a complete cross-fade from one preset to another to be accomplished by one operator. Switches which correspond to each fader allow rapid cuts to be made.

Two Blackout master tablet switches control the circuit relays giving instant cut.

CONTROL CABINET

Catalogue Type	No. of Ways	Width ins.	Depth ins.	Height ins.	Weight lbs.	
CLC/48	48	36 (44)	16 (30)	72 (50)	270	£ 770
CLC/72	72	42 (56)	16 (30)	72 (50)	336	£1010
CLC/96	96	54 (68)	16 (30)	72 (50)	400	£1150

Extra for Cabinet in desk form (size in brackets above) ... ... Add £100

DIMMER RACKS

Each dimmer rack is provided with a power pack for the low voltage control circuits and is complete with all internal connections, and rows of terminals for the external wiring to the load circuits, and for the control wiring to the control cabinet. Each of the 24 channels is provided with an English Electric H.R.C. cartridge fuse, a contactor for switching and space for a saturable reactor dimmer and a type LCA plug-in transistorised amplifier. A maximum of three of the reactor dimmers on each rack can be SR/803 3 kw. Covers are fitted over the terminals and the relay panels, but totally enclosing covers are an optional extra. Each rack is a self-contained unit and may be placed against the wall, rear access being unnecessary.

Type LCR/24 Dimmer Rack £385
Width 64-ins. Depth 19¼-ins. Height 66½-ins. Weight 4 cwt.

Extra for totally enclosing covers ... ... £ 20

Type LCR/5 5 kw. free standing unit with contactor and space for reactor to substitute for standard channel on LCR/24 Rack. Weight 10 lb. ... ... £ 25

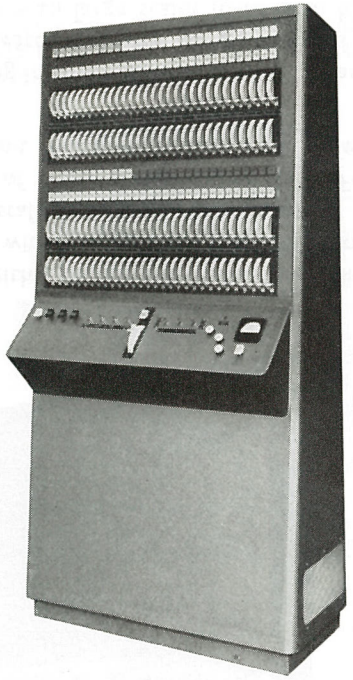
REACTOR DIMMERS

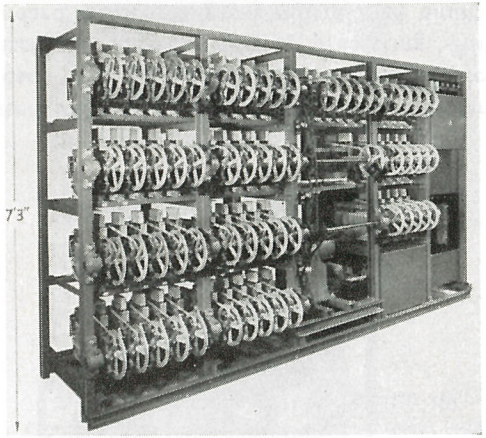
A.C. only. State voltage and frequency.
Each reactor must be used with a type LCA transistor amplifier.

			£ s d
Type SR/800	Reactor 0·5 kw. Weight 17 lb.	nett	8 8 0
Type SR/801	Reactor 1 kw. Weight 29 lb.	nett	11 7 6
Type SR/802	Reactor 2 kw. Weight 63 lb.	nett	17 15 0
Type SR/803	Reactor 3 kw. Weight 78 lb.	nett	26 5 0
Type SR/805	Reactor 5 kw. Weight 135 lb.	nett	42 18 0
Type LCA	Transistor Amplifier. Weight 1 lb.		15 18 6
Type LCP	Spare Power Pack		100 0 0

SYSTEM P R
ELECTRO-MECHANICAL REMOTE CONTROL WITH TWO PRESETS

Control Cabinet type CPR/72





Dimmer Bank type DB/60

System P.R. employs resistance or transformer dimmers electro-mechanically driven through a servo system. Each installation consists of a dimmer bank of four or five tiers to suit the space available. The dimmers have individual electro-magnetic clutch drive and there is only one motor (variable speed) to the bank.

Control Cabinet. The standard unit is floor standing in three sizes to take 60, 72 and 96 ways respectively. A special desk for seated operator can be supplied as an extra.

Two finger tip moulded dimmer levers with large scales (0 - 10 with half divisions marked) are provided per channel which as this system P.R. is electro-mechanical, enables *two complete changes to be preset ahead* of the lighting in use. The presets are banked in alternate rows one above each other so that lighting levels can easily be matched, yet the operator when "playing" a change is not impeded by having to pick out alternate levers.

Above each pair of preset levers are two three-position engraved tablet switches. The top one controls the circuit blackout contactor and the lower one (amber) allows dimmers to be formed at will into three groups, thus avoiding waste of a complete preset for changes covering part of the stage. These groups are each controlled from a master switch giving a choice of "Move" "Inert" or "Dim". There are in addition Preset Masters and a Speed Regulator giving dimmer travel speeds from 3 secs. to 45 secs. An advantage of the dimmer grouping switches on this control is that they can be moved and set-up with complete freedom from lighting flicker, due to the inertia of the P.R. electro-mechanical bank. As the dimmers are not required to hold through the control levers, greater operative freedom is provided by the amber switches and much dimmer lever movement particularly in respect of the dim position is avoided.

Three Blackout master tablet switches give instant cut and restoration of the three groups which can be set up.

CONTROL CABINET

Catalogue Type	No. of Ways	Width ins.	Depth ins.	Height ins.	Weights lbs.	
CPR/60	60	36 (50)	16 (30)	72 (50)	240	£840
CPR/72	72	42 (56)	16 (30)	72 (50)	270	£935
CPR/96	96	54 (68)	16 (30)	72 (50)	336	£1,010

Extra for Cabinet in desk form (size in brackets above) ... ... Add £100

DIMMER BANK

The dimmer bank is fitted with a power pack for the low voltage control circuits and is complete with all internal connections and terminals for external connections to the lighting loads. A preformed control cable in metallic hose (up to 100 ft. in length) is supplied to link the dimmer bank and control cabinet. Each of the channels is provided with an English Electric H.R.C. cartridge fuse, a contactor for switching and a dimmer which is operated by a pair of magnetic clutches from a common uni-directional shaft powered by a variable speed motor. A dimmer bank cannot be totally enclosed and requires 2-ft. access on each side.

Type DB/60 Fitted with a total of 60 0·5/1 kw. or 1/2 kw. variable load or 2·5 kw. fixed load resistance dimmers ... £3,600
Width 13-ft. Depth 3-ft. 8-ins. Height 7-ft. 3-ins.
Weight 22 cwt.

Type DB/72 As above with a total of 72 dimmers £4,320
Width 14-ft. 9-in. Depth 3-ft. 8-in. Height 7-ft. 3-ins.
Weight 30 cwt.

Type DB/96 As above with a total of 96 dimmers £5,760
Width 19-ft. Depth 3-ft. 8-ins. Height 7-ft. 3-ins.
Weight 45 cwt.

DIMMER VARIATIONS

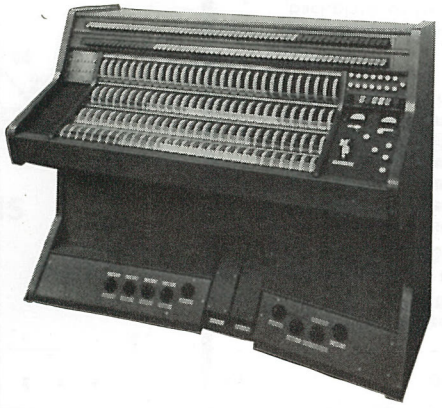
Substitution of 1·5/3 kw. or 3 kw. resistance dimmer Add £2
Substitution of 3/5 kw. or 5 kw. resistance dimmer ... Add £35
Substitution of 2 kw. max. transformer dimmer (available in pairs only) ... ... Add £21
Substitution of 5 kw. max. transformer dimmer ... Add £77

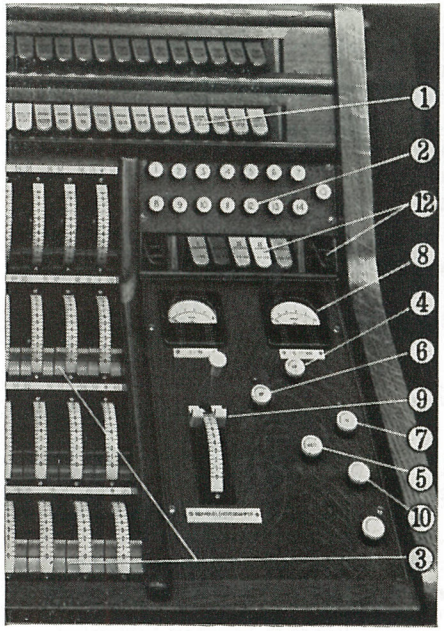
Dimmer Bank dimensions above cater for a maximum of four 5 kw. dimmers.

SYSTEM CD
ELECTRO-MECHANICAL REMOTE CONTROL

System CD employs resistance or transformer dimmers electro-mechanically driven through a clutch servo as described for System PR on the previous page. The control console is provided with a memory device which stores and instantly recalls groups required for collective operation. This memory device and other exclusive facilities combine to provide the operator with an instrument capable of executing complex lighting changes in rapid succession in addition to precise presetting of dimmer levels.

The system CD models shown on this page are installed in all up-to-date Theatres and Television Studios in Britain and are also exported. For larger installations Systems CD/W and C are appropriate and are subject to special specification and quotation.





Certain controls have a temporary second function against a heavy spring known as 'second touch.'

1. **Channel Selectors**
   One to each channel. When put down the channel is *selected to change* but will not do so without one of the Master Controls.

2. **Memory Preset Pushes**
   Any of these 14 pushes pressed while the 'Presetter' toe push is pressed will store the combination of Channel Selectors *selected* at that moment. Subsequent use of that push without 'Presetter' will always cause the Channel Selectors to move instantly to the combination previously stored. A permanent 'Cancel' push, which causes all Channel Selectors to spring off, aids selection by hand.

3. **Dimmer Levers**
   Two for each channel arranged in separate white and green rows. These Dimmer Levers can be preset for dimming changes involving intermediate intensity levels.

4. **"Raise" Master Push**
   Raises *selected* dimmers to full irrespective of the levels preset on the Dimmer Levers.

5. **"Dim" Master Push**
   Lowers *selected* dimmers to out irrespective of the levels preset on the Dimmer Levers. At 'second touch' *all* dimmers fade to zero selected or not.

6. **"White Preset" Master Push**
   Moves *selected* dimmers to the levels preset on the white Dimmer Levers. At 'second touch' *all* dimmers move to the preset levels.

7. **"Green Preset" Master Push**
   Moves *selected* dimmers to the levels preset on the green Dimmer Levers. At 'second touch' *all* dimmers move to the preset levels.

● **"Remainder Dim" (cross-fade)**
   This toe push is interlocked with the 'Raise' and 'Preset' masters and causes *selected* dimmers to change as described above but at the same time the *remainder* will fade out although their Dimmer Levers may be preset for future changes.

● **"Speed Pedal"**
   The Speed Pedal, which is balanced to stay at any position when the foot is removed, determines the speed of all dimming changes. Speed range 2 seconds to 45 seconds shown on indicator lamps. Slower speeds down to 30 minutes by means of Impulse Unit.

8. **Indicator Dial**
   When a dimming change is initiated the progress and rate of change is shown on the Indicator Dial. If any Channel Selector is pressed to 'second touch' the Indicator Dial shows the actual level of that dimmer.

● **"Individual" Toe Push**
   If a Channel Selector is pressed to 'second touch' at the same time as the 'Individual' toe push then that dimmer only will come under immediate control.

9. **Master Dimmer**
   When added to a 'Preset' master this applies a proportional reduction to the levels of *selected* dimmers.

10. **"Blackout" Master Push**
    All channels are automatically held 'switched on' as the changes normally concern the dimmers. This push will blackout any *selected* channels. To restore to 'on' the adjacent 'All Trip' push is used.

● **"Go" Master Push**
   For Television requirements the channels are normally held 'switched off' and *selected* channels are 'switched on' in the same manner.

12. **"Dead Blackout"**
    All channels, selected or not, are switched off when the switch is down.

12. **Group Couplers**
    Normally these are kept down but they can be put up to limit a change to a particular group (such as F.O.H. spots).

CONTROL CONSOLE

Constructed in hardwood mahogany or oak finish with 14 store memory device and supplied with nominal 100-ft. preformed control cable in metallic hose.

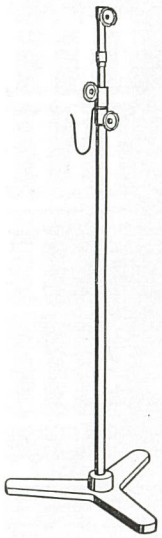
Type CD/96	96 control channels. Width 60-in. Depth 32½-in. Height 50¼-in. Weight 5½ cwt.	nett **£2130**
Type CD/120	120 control channels. Width 66-in. Depth 32½-in. Height 50¼-in. Weight 6 cwt.	nett **£2290**

DIMMER BANK

Generally as described for System PR above. The same Dimmer Variations apply.

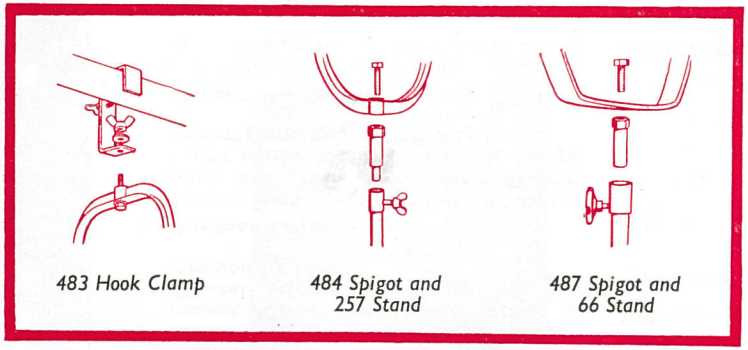
Type CD/DB/96	Fitted with a total of 96 0·5/1 kW. or 1/2 kW. variable load or 2·5 kW. fixed load resistance dimmers. Width 19-ft. Depth 3-ft. 8-in. Height 7-ft. 10-in. Weight 45 cwt.	**£6250**
Type CD/DB/120	As above with a total of 120 dimmers. Width 20-ft 6-in. Depth 3-ft. 8-in. Height 7-ft. 10-in. Weight 55 cwt.	**£7800**

SUSPENSIONS AND STANDS



Ref. 483. *Hook Clamp*

Ref. 66. *Standard Telescopic Stand*



483 Hook Clamp

484 Spigot and 257 Stand

487 Spigot and 66 Stand

Strand stage lighting lantern trunnions are now fitted with bolts and wing nuts to permit rapid suspension by the ref. 483 hook clamp to 1½-in. Gas Barrel (1⅞-in. external diameter). The wing bolt permits all adjustments of location, swivel and tilt to be made without the use of tools. Always use a ref. 64 safety chain in addition to normal suspensions.

The smaller lanterns under 500 watts (Patt. 23, 45, 123, 60 and 137) are fitted with a ⅜-in.Whitworth bolt and wing nut. When a telescopic stand has to be used with these lanterns a ref. 484 spigot adaptor is required to screw over the bolt.

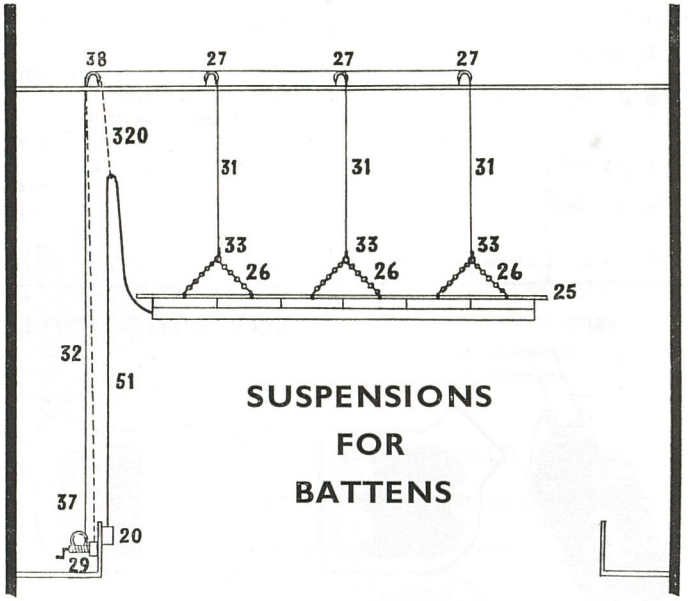
The larger lanterns over 500 watts (Patt. 53, 243, 52, 35 and 49) are fitted with a ½-in. Whitworth bolt and wing nut. These all require a ref. 487 spigot adaptor to screw over the bolt when used on a telescopic stand. Only items marked * below are suitable for these larger and heavier lanterns.

Internally wired barrels (1½-in. Gas, 1⅞-in. ext. dia.) and fly rail plug boxes permit maximum flexibility in the location of lanterns in respect of the electrical connections to the lighting control. In a theatre with full grid facilities the barrels should be suspended from the grid by means of winch-operated steel-wire lines for ease of lamp maintenance. Where however the proscenium height and the height above the proscenium is limited 'dead-line' suspension is recommended as (with the exception of Strand "Polestar" lanterns) it is always necessary to set the lanterns for each production from a pair of steps and maintenance can be executed in the same manner. The 'dead-line' suspension avoids expenditure on flexible multi-core tails etc.

Ref.	Description	£	s	d
CLAMP AND SAFETY CHAIN				
*483	Hook clamp (as illustrated) for 1½-in. gas barrel (1⅞-in. ext. dia.). Weight ¾ lb.		3	8
*64	Safety chain, 22-in. long (for lanterns when suspended), with clip hook. Weight ¼ lb.		2	6
STANDS				
*66	Standard telescopic stand (as illustrated), consisting of wrought iron barrel screwed into cast iron base, with extending liner, cable hook, swivelling collar and locking handles. Adjustable height: 4 ft. 3 in. to 7 ft.; radius of feet at base 12 in. Weight 37 lb.	5	10	0
484	Spigot adaptor for ⅜-in. bolt. Weight ½ lb.		2	9
*487	Spigot adaptor for ½-in. bolt. Weight ½ lb.		2	9

Ref.	Description	£	s	d
*260	As 66 but fitted with rubber-tyred castors. Weight 38½ lb.	6	5	0
*261	As 66 but 8 ft. 6 in. height to 10 ft. 6 in. Weight 48 lb.	6	5	0
257	Junior telescopic stand, generally as 66 but of lighter construction, complete with swivelling collar and cable hook. For use with lanterns, Patt. 23, 45, 123 and 137 only. Adjustable height: 3 ft. 7 in. to 5 ft. 9 in.; radius of feet at base 8 in. Weight 15 lb. ...	3	5	0
BRACKETS				
247	Swivel arm wall bracket, reach 10-in. Backplate drilled for two ⅜-in. bolts or coach screws (not included). Weight 2½ lb.	1	11	6
195	Spare adaptor for ⅜in. bolt		2	6
485	Adaptor for 247 and 251 brackets to, take two small lanterns (one up, one down). Weight ½ lb.		2	6
486	As above but longer to take lanterns side by side. Weight 2 lb.		3	0

Ref.	Description	£	s	d
248	As 247 but with double arm, reach 19-in. for small lanterns only. Weight 3 lb.	2	15	0
251	Swivel arm boomerang bracket, reach 10-in. with clamp for 2-in. ext. dia. barrel. Weight 3 lb.	2	11	0
252	As 251 but with double arm, reach 19-in. for small lanterns only. Weight 3½ lb.	3	10	0
*255	Fixed boomerang bracket for 2-in. ext. dia. barrel, 11-in. reach. Weight 2¾ lb.		14	6
238	"T" shaped bracket non-swivelling for two small lanterns. Weight 2 lb.		6	6
BASES AND CEILING FIXINGS				
367	Cast aluminium ceiling plate or base, 6-in. diam. for Patt. 23, 123, 45 and 137 Weight 1 lb.		9	0
*259	Ceiling fixing saddle. Drilled for two ⅜-in. diameter bolts, or coach screws (not supplied), for suspending lanterns or "S" type battens. Weight ¾ lb. ...		4	0



Cat. Ref.	PARTS		£ s d
25	1½-in. Gas barrel (1⅞-in. ext. dia.) ...	per foot	4 4
26	Bridles	each	1 10 0
27	One-way (6-in. dia.) Grid pulley ...	,,	1 7 6
28	Three-way (6-in. dia.) Grid pulley ...	,,	3 0 0
38	Four-way (6-in. dia.) Grid pulley ...	,,	3 17 6
29	5-cwt single-drum winch	,,	15 18 0
30	5-cwt three-drum winch	,,	16 13 0
39	10-cwt single-drum winch	,,	On application
40	10-cwt four-drum winch	,,	On application
31	¾-in. circ. ¼-in. dia. flexible steel cable	per 100 feet	1 17 0
32	1-in. circ. 5/16-in. dia. flexible steel cable	per 100 feet	3 2 0
33	¼-in. bulldog grips	each	1 0
34	5/16-in. bulldog grips	,,	1 3
35	¼-in. thimbles	,,	7
36	5/16-in. thimbles	,,	9
37	Swivel shackles	,,	1 5 6
56	One-way (4-in. dia.) Grid pulley ...	,,	19 6
57	Three-way (4-in. dia.) Grid pulley ...	,,	2 1 0
58	Four-way (4-in. dia.) Grid pulley ...	,,	2 12 0
59	Sashline (2-in. dia.) pulley	,,	7 6
244	10-cwt three-drum winch	,,	On application
320	Sash line for hoisting away cables ...	per 100 feet	17 6
321	Cleat for above	each	9 0

41 Counterweight clips to suspend internally wired barrels from counterweight bars (one per 6 ft. length of barrel+1) each **27/6d**

259 Wall or ceiling fixing saddle, for use when battens not to be raised or lowered (see page 22 above) ... ... each **4/0d**

20 Wall or Fly Rail Connector Box, up to 12 D.P. ways and earth. with cable gland for Batten Multicore cable ... each **65/0d**

INTERNALLY WIRED BARRELS

These consist of 1½-in. Gas Barrel (1⅞-in. outside diameter) painted grey with P.V.C. insulated internal wiring brought to short tails at each equidistant lantern position and terminated in a pair of 5 amp. or 15 amp. connectors. The other end of the wiring terminates in a numbered terminal box where circuits can be readily looped by the Electrical Contractor. Constructed in two lengths joined by a clamping plate to facilitate transport. For ref 483 Hook clamps see page 22 above.

JUNIOR TYPE (5 amp.)

Intended mainly for dead-line suspensions. Fitted with ref. 183 5 amp. 3-pin connectors. Terminal box has removable plate for direct conduit entry.

Cat. Ref.	Description	Length	Weight lbs.	£ s d	Extra barrel per ft. s d
430	6-way 6 circuits ...	18 ft.	56	16 10 0	6 0
431	8-way 8 circuits ...	18 ft.	57	18 10 0	7 0
432	10-way 10 circuits ...	20 ft.	63	21 5 0	8 0
433	12-way 12 circuits ...	24 ft.	73	24 10 0	9 0
434	14-way 14 circuits ...	24 ft.	74	28 0 0	10 0
436	16-way 16 circuits ...	24 ft.	75	31 10 0	11 0

Longer barrel (max. 26 ft.) or shorter lengths ... Add or subtract per ft. as right hand column above

Note: Length of barrel must allow outlets at 15-in. centres minimum.

SENIOR TYPE (15 amp.)

Fitted with ref. 184 and 414 15 amp. 3-pin B.S. connectors. Terminal box has cable gland for Batten Multicore Cable.

Cat. Ref.	Description	Length	Weight lbs.	£ s d	Extra barrel per ft. s d
440	6-way 6 circuits ...	24 ft.	91	30 3 0	9 0
441	8-way 8 circuits ...	24 ft.	93	34 8 0	10 6
442	10-way 10 circuits ...	24 ft.	96	38 15 0	12 0
443	12-way 12 circuits ...	28 ft.	109	45 6 0	13 6
444	14-way 14 circuits ...	30 ft.	120	51 17 0	15 0
446	16-way 16 circuits ...	30 ft.	122	58 11 0	16 6

Longer barrel (max. 30 ft.) or shorter lengths ... ... Add or subtract per ft. as right hand column above

Note: Length of barrel must allow outlets at 18-in. centres minimum.

Add suffix —/185 to cat. ref. to substitute ref. 185 15 amp. 3 pin-in-line moulded flat connectors instead of ref. 184 type above. Deduct 6/6 per way

FLY RAIL PLUG AND SOCKET BOXES

Constructed in sheet steel with recessed socket panel carrying flush B.S. 546 15 amp. 3-pin plugs and fitted with hinged door. Top entry cable gland provided for clamping batten multicore cable.

Cat. Ref.	Description	Width ins.	Depth ins.	Height ins.	Weight lbs.	£ s d
420	3-way 15 amp. ...	6 5/8	7¼	12	11½	9 10 0
421	4-way 15 amp. ...	6 5/8		12	12	11 0 0
422	6-way 15 amp. ...	6 5/8		15	14	14 0 0
423	8-way 15 amp. ...	6 5/8		18	17	17 0 0
424	12-way 15 amp. ...	9¼		18	22½	22 0 0
425	14-way 15 amp.* ...	11 7/8		18	28	24 0 0
426	16-way 15 amp.* ...	11 7/8		18	30	27 0 0

* with two cable glands

Extra for fitting 5-amp. 3-pin way for effects motors **17 6**

Extra for signwritten labelling on lid add 5% to prices above

CABLES AND CONNECTORS

Batten Multicore Cable—Tinned copper wire 70/·0076 with double jacket of vulcanised rubber insulation, taped with numbered tapes, cores twisted together, taped, asbestos braided and asbestos painted overall.

Catalogue Ref.	No. of Cores	Amp.	1–25 yds.	25–50 yds.	over 50 yds.
51	9	8	13/6d per yd.	12/0d per yd.	11/0d per yd.
53	15	6	19/0d per yd.	17/6d per yd.	16/0d per yd.
55	25	5	31/0d per yd.	28/0d per yd.	26/0d per yd.

Control Cable—Tinned copper wire 14/·0076 P.V.C. insulated, colour-coded, and P.V.C. sheathed (for colour change mechanisms and saturable reactor remote controls).

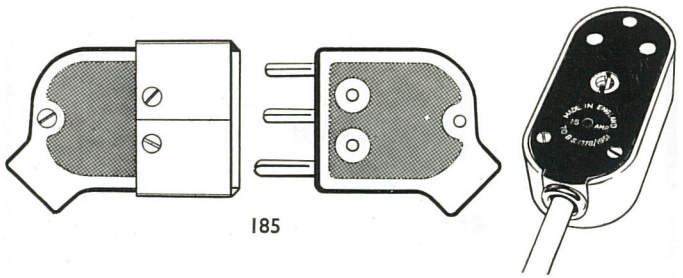
Catalogue Ref.	No. of Cores	Amp.	1–25 yds.	25–50 yds.	over 50 yds.
600	7	1	1/2d per yd.	1/2d per yd.	1/2d per yd.
601	12	1	1/11d per yd.	1/11d per yd.	1/11d per yd.

P.V.C. Flexible Cord—Tinned copper wire P.V.C. insulated, 3 core colour-coded red, black and green, made circular with wormings and P.V.C. sheathed.

Catalogue Ref.	No. and size of wires	Amp.	1–25 yds.	25–50 yds.	over 50 yds.
602	23/·0076	5	1/6d per yd.	1/4d per yd.	1/2d per yd.
603	40/·0076	10	1/11d per yd.	1/8d per yd.	1/6d per yd.
604	70/·0076	15	2/7d per yd.	2/5d per yd.	2/1d per yd.

T.R.S. Flexible Cord—Tinned copper wire vulcanised rubber insulated 3 core colour-coded red black and green, made circular with wormings and tough rubber sheathed.

Catalogue Ref.	No. and size of wires	Amp.	1–25 yds.	25–50 yds.	over 50 yds.
605	23/·0076	5	1/3d per yd.	1/1d per yd.	1/0d per yd.
606	40/·0076	10	1/7d per yd.	1/4d per yd.	1/3d per yd.
607	70/·0076	15	2/5d per yd.	2/1d per yd.	1/11d per yd.



185

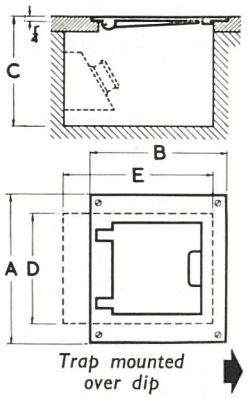
184

PLUG CONNECTORS

Cat. Ref.	Description	Weight oz.	s	d
183	Junior 5 amp. 3-pin slip connector (pair)	3	pair 3	6
184	15 amp. 3-pin Stage connector socket (B.S.1778) to take plug 414 below ...	10	each 13	9
414	15 amp. standard (B.S.546) 3-pin plug (used with 184 above to make connector for extension leads, etc.)	4	each 4	0
185	15 amp. 3-pin moulded flat connector (pair)	16	pair 11	0

PLUG AND SOCKET BOXES

These are for use under Stage Dip Traps etc., and consist of an angled sheet steel box painted grey with removable lid carrying flush B.S. 546 3-pin plugs and sockets as below:



Trap mounted over dip

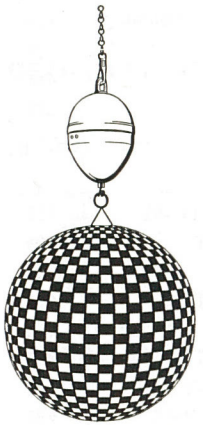
Catalogue Ref.	Description	Trap Ref.	Width ins.	Depth ins.	Height ins.	Weight lbs.	£	s	d
175	1-way 5 amp.	190	3½	3	3	1	1	5	0
176	2-way 5 amp.	190	6¼	3	3	1½	1	19	6
177	3-way 5 amp.	192	9	3	3	2¼	2	13	6
178	4-way 5 amp.	192	11¾	3	3	2¾	3	8	0
179	1-way 15 amp.	190	4	3½	4	2	1	7	6
180	2-way 15 amp.	190	7	3½	4	2¾	2	4	0
181	3-way 15 amp.	192	10	3½	4	3¾	3	0	0
182	4-way 15 amp.	192	13	3½	4	5¼	3	17	0

STAGE DIP TRAPS consisting of casting with hinged lid and cable inlet.

Ref.		A	B	C	D	E	£	s	d
190	1/2-way Stage Dip trap only	10⅜"	9½"	7" min	7¾"	10½"	2	7	6
192	3/4-way Stage Dip trap only	15¼"	10"	7" min	13½"	10½"	3	5	0

SPECIAL EFFECT BOX

Wall mounting sheet metal box with pilot lamp, fitted with a pair of totally enclosed 60 amp. quick release terminals.
Ref. No. 508 ... ... £15 0 0



Ref. 108 with 110

ROTATORS AND MIRROR BALLS

Electric Rotator. To carry and rotate 20 lb. maximum. Speed 2½ revs. per minute. Complete with both halves of electric connector for driving motor. Height 10-in. Diameter 5¾-in. Weight 3 lb.

Ref.	Description	£	s	d
110	Rotator for 200/250 volt A.C. supply	10	6	0
111	Rotator for 110 volts A.C. supply	11	0	0

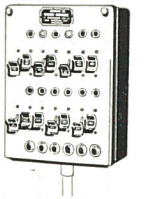
Mirror Ball. Complete ball with alternate blue and white mirror glass mosaic surface, exclusive of rotator, chain or other suspension.

Ref.	Description	£	s	d
107	Mirror Ball. Diameter 12-in. Weight 9 lb. ...	11	11	0
108	Mirror Ball. Diameter 16-in. Weight 13 lb. ...	17	0	0

STRAND LAMPHOLDERS

Porcelain type, specially designed and manufactured for lanterns.

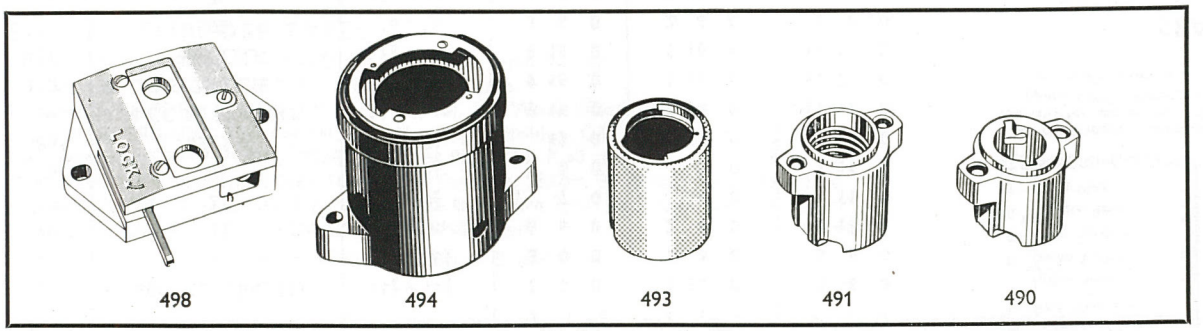
SIGNAL AND CUE BOARDS



Sheet metal box with two engraved tablet switches "Warning" and "Go" with pilots over and a buzzer push to each way. For six ways and over, master switches are fitted to the "Warning" and "Go". Supplied with a suitable enclosed transformer for separate mounting.

Ref.	Description	Width ins.	Depth ins.	Height ins.	Weight lbs.	£	s	d
451	3-way Cue Board	6	5	12	5½	21	0	0
452	6-way Cue Board	9	5	12	8	37	0	0
453	9-way Cue Board	12	5	12	11	43	0	0
456	12-way Cue Board	16	5	12	14	54	0	0
457	Two-light outstation ...	2¼	3¼	3¼	¾	2	12	6
458	Outstation with reply switch	3½	4½	3¾	1¼	3	18	6

LAMPS. (For use as pairs in series.) M.E.S. 12 volt *See page 27.*



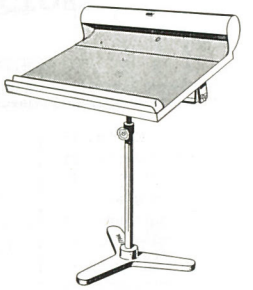
498 494 493 491 490

Ref.	Description	s	d
490	Bayonet Cap (B.22) Recessed type ...	2	7
491	Edison Screw (E.27) Recessed type ...	3	6
492	Goliath Edison Screw (E.40) standard shell	8	9
493	Medium Prefocus (P.28)	6	6

Ref.	Description	s	d
494	Large Prefocus (P.40)	13	6
498	Bi-post (Bi 38) with lever locking ...	13	6
513	GES as 492 but American Shell	9	0
523	ES as 49 but American Shell	3	8

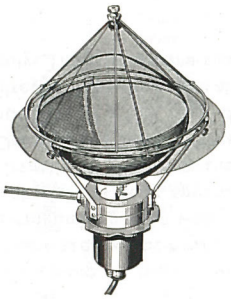
ORCHESTRA LIGHTS

The conductor's stand, designed for a full score, is adjustable in height and tilt with two B.C. lampholders for illumination. The orchestra stand is adjustable in height and has a lighting fitting with a B.C. lampholder and an adjustable shade which allows the light to be restricted to the music. Finished hard hammer-grey and supplied unwired and without lamp.



Ref 116

Ref. 116	Conductor's Stand	£32	0	0
Ref. 117	Orchestra Stand	£ 5	10	0
Ref. 118	Lighting fitting only	£ 1	16	6



Ref. 479 with 476 and 474

UNDERWATER LAMPHOLDER

G.E.S. watertight holder designed to allow use of completely submerged lamps (such as Philips Altrilux) for floodlighting fountains, etc. Consists of a brass supporting ring with 6½-in. long ⅝-in. diam. spigot and rubber casing housing G.E.S. porcelain lampholder. The device forms a watertight seal with both lamp and cable. Holder can carry Ref. 476 frame to secure Ref. 474 'Cinemoid' colour filter.

Ref.		£	s	d
479	Holder as above	2	10	0
476	Frame for colour		17	6
474	'Cinemoid' colour filter for above		4	0

EXIT BOXES

Standard EXIT box with 5-in. high characters (to B.S. 2560). Complete with one B.C. and one E.S. porcelain lampholder for primary and secondary lighting services, and provision for 'Cinemoid' colour filter.

Ref. 500	Surface mounting	£3	10	0
Ref. 514	As above with glazed base	£4	10	0
Ref. 515	Flush mounting	£4	10	0

COLOUR FILTERS

"Cinemoid" is the colour filter for all "theatrical" lighting purposes—indoor or outdoor. The sheets are exceptionally durable being mechanically strong, impervious to moisture, and self extinguishing even when deliberately set alight by prolonged contact with a naked flame. The material has been approved by all the principal authorities and is regularly supplied by us to virtually all the great theatres of the Continent such as the Vienna State Opera and the Paris Opera and a host of others, large and small in this country and all over the world. For productions of a few days' duration only (indoors in non-damp or non-humid conditions) where filters will be discarded afterwards, good quality dyed gelatine filters are available in small sheets only. The colours are the same as, and a near (but not exact) match to the "Cinemoid" range.

COLOUR FRAMES AND CINEMOID CUT TO SIZE

Add suffix —/**C** to frame ref. for 'Cinemoid' cut to size, or —/**CF** for 'Cinemoid' in frame

Frame Ref.	Lantern Pattern Nos.	Frame Size in inches	Frames only per doz £ s d	Cinemoid only —/C per doz £ s d	Cinemoid and Frames —/CF per doz £ s d
61	60, 60M, 58, 93N, 243	11¾ × 11¾	2 3 0	1 13 0	3 16 0
67	49	16¼ × 16¼	3 0 0	2 6 0	5 6 0
70	35	16 diam.	6 6 0	2 6 0	8 12 0
73*	27	4¼ × 4¼	7 0	4 0	11 0
76	45	5⅝ × 5¼	1 6 0	5 0	1 11 0
85*	43, 501	10¾ × 7½	12 0	12 0	1 4 0
99	93N CC/U, 58 CC/U	11½ diam.	9 15 0	1 16 0	11 11 0
100	58 CC/E, 76 CC/E	11½ diam.	9 15 0	1 16 0	11 11 0
101	93 CC/U	11½ diam.	9 15 0	1 16 0	11 11 0
214	502	16 × 16	3 0 0	2 6 0	5 6 0
226	76	11½ diam.	6 0 0	1 16 0	7 16 0
234	Junior Float with frames	4 × 18	5 12 6	12 0	6 4 6
250	Junior Float (clips only)		2 6	1 4 0	—
240	"S" Equip. and 137	9¼ × 8	1 10 0	12 0	2 2 0
284	23N, 53, 53W	7¾ × 7¾	1 10 0	11 0	2 1 0
325	53 CC/U, 53 CC/E	9¼ diam.	8 8 0	14 0	9 2 0
348	537	10 × 9½	2 0 0	18 0	2 18 0
351	543, 560, 560M, 558	11¾ × 11¾	2 10 0	1 13 0	4 3 0
359	23, 23F, 23W	4 × 4	1 6 0	4 0	1 10 0
370	93	9⅞ × 9⅞	1 11 0	18 0	2 9 0
401	123	6½ × 6½	2 15 0	7 0	3 2 0
495	501 Magazine	9¼ diam.	8 8 0	14 0	9 2 0

All the above colour frames are metal except those marked * which are in linen bound millboard.

388 Set of five cut filters for Patt. 23 Motor colour wheel (382) **3/6** per set

390 ,, ,, ,, ,, ,, ,, Patt. 23N and 123 Motor colour wheels (400, 410) **4/6** per set

377 ,, ,, ,, ,, ,, ,, Patt. 23 Hand operated colour wheel (376) **3/6** per set

474 Cinemoid for 479 and 476 **4/-** each

COLOUR FILTERS—SHEETS

Ref.	Sheet size (ins.)	Price	Postage and packing
GELATINE			
265—Colours ...	Small 22 × 17½	**2/-** per sheet	Under 12 sheets **2/-**
266—Frost ...	Small 22 × 17½	**2/9** per sheet	12 sheets and over Free
CINEMOID			
267—Colours or Frost	Small 24 × 20	**5/-** per sheet	12 small sheets, or under 6 large **2/-**
268—Colours or Frost	Large 48 × 20	**10/-** per sheet	Above these quantities Free

LIST OF COLOURS

1	Yellow	13	Magenta	26	Mauve	42	Pale Violet
2	Light Amber	14	Ruby	29	Heavy Frost	43	Pale Navy Blue
3	Straw	15	Peacock Blue	30	Clear	†44	Blue-Grey
4	Medium Amber	16	Blue-green	31	Light Frost	†45	Daylight
5	Orange	17	Steel Blue	32	Medium Blue	48	Bright Rose
5A	Deep Orange	18	Light Blue	33	Deep Amber	49	Canary
6	Red (Primary)	19	Dark Blue	34	Golden Amber	50	Pale Yellow
7	Light Rose	20	Deep Blue (Primary)	35	Deep Golden Amber	51	Gold Tint
8	Deep Salmon	21	Pea Green	36	Pale Lavender	52	Pale Gold
9	Light Salmon	22	Moss Green	38	Pale Green	53	Pale Salmon
10	Middle Rose	23	Light Green	39	Primary Green	54	Pale Rose
11	Dark Pink	24	Dark Green	40	Pale Blue	55	Chocolate Tint
12	Deep Rose	25	Purple	41	Bright Blue	56	Pale Chocolate
						60	Pale Grey

"The trade mark 'Cinemoid' denotes a particular brand of self-extinguishing acetate sheeting which is made in England specially for use as colour filters and which is distributed throughout the world by The Strand Electric & Engineering Company Ltd." Additions are made to the above range from time to time.

†*Not available in Gelatine*

SPARE LENSES AND GLASS REFLECTORS

Ref.	Description	Dia. in ins.	Focus in ins.	Lantern Patt. No.	£ s d
294	HR.PC lens	6	16	501	2 2 0
300	PC lens	3	6	27	16 0
409	Fresnel lens	4½	—	45	1 5 0
302	HR.PC lens	5	9	51, 52, 152	1 15 0
304	HR.PC lens	6	9	23N, 152	2 7 6
306	HR.PC lens	6	8	53	2 15 0
310	HR.PC lens	3½	5	23, 23W, 52	1 0 0
317	Fresnel lens	10	—	243, 543, 143	3 15 0
335	HR.PC lens	6	10	152, 43	2 4 0
369	HR.PC lens	8	13	93	5 10 0
404	Fresnel lens	6	—	123	2 4 0
411	Fresnel lens	3½	—	23F	1 0 0
461	Fresnel lens	10	—	243TV	3 15 0
482	PC lens	10	20	93N	13 5 0
503	Fresnel lens	6	—	123W	2 4 0
293	Reflector	12	—	501	9 15 0
299	Reflector	7	—	152	9 15 0

LAMPS

GENERAL LIGHTING SERVICE (GLS) TYPE

Watts.	Cap	Type	Voltages	£ s d
60	ES	Clear	110, 120 / 200, 210, 220 / 230, 240, 250	1 2½*
100	ES	Clear		1 5 *
150	ES	Clear		1 11 *
200	ES	Clear		2 11½*
300	GES	Clear		6 9
500	GES	Clear		8 6
1000	GES	Clear		16 0

INTERNALLY SILICA COATED TYPE

Watts	Cap	Type	Voltages	£ s d
40	BC	Opal	200, 210, 220 / 230, 240, 250	1 5½*
60	BC	Opal		1 5½*
1000	GES	Opal	115, 230, 240, 250	18 6

SPECIAL PURPOSE TYPES

125-watt BLACK BULB U.V. LAMP for Patt. 230C, 3-pin BC cap.		3 3 0
40-watt 4-ft. U.V. TUBE LAMP for ref. 379, Bi-pin caps.		3 10 0*
1000-watt CLASS FL/2 TUBULAR LAMP for ref. 342 Wave Effect, GES cap.		3 10 0
500-watt ALTRILUX LAMP for ref. 479 Watertight Holder, GES cap.		2 12 6
2000-watt CLASS H.1 PROJECTOR LAMP for Patt. 152, P.40 cap.		5 15 0
4000-watt, 110 volt only PROJECTOR LAMP for Patt, 152BP, Bi 38 cap.	nett	17 10 0
100-watt PROJECTOR LAMP for Patt. 12 A.D.B. Picture Spot, SBC cap.	nett	1 2 0*
12-volt SIGNAL AND CUE BOARD LAMPS, MES caps.		1 1*

*Subject to Purchase Tax in British Isles

CLASS T (THEATRE SPOTLIGHT TYPE)

This class of lamp allows a tilt of 90° either side of cap down and is the recommended lamp for all Strand lanterns fitted with prefocus lampholders except Patt. 52, 152 and 93.

Watts.	Cap	B.S. Ref.	International Philip's Ref.	Other Canadian Equivalent	£ s d
250	P.28	T/3	558C	250T20/47	1 4 6*
500	P.28	T/1	559C	500T20/64	1 13 9
1000	P.40	T/2	457C	See A.1. below	2 2 9

CLASS A.I. PROJECTOR

Limited tilt but lamp is essential for the highly efficient optical systems of the Patt. 93 and 52.

Watts.	Cap	B.S. Ref.	International Philip's Ref.	Other Canadian Equivalent	£ s d
1000	P.40	AI/11	†293C	IM/T20/P	2 10 0

†*Lamp 297C can be used but packing piece under Lampholder must be removed.*

CLASS B.I PROJECTOR

For use where length of life and ability to tilt to sharp angles are of greater importance than maximum light ouput.

Watts.	Cap	B.S. Ref.	International Philip's Ref.	Other Canadian Equivalent	£ s d
250	P.28	B.1/7	—	—	1 5 0*
1000	G.E.S.	B.1/4	‡504G	1M/G40/FL	2 6 6

‡*Specify also 115 mm light centre length.*

CLASS S PROJECTOR

Watts.	Cap	B.S. Ref.	International Philip's Ref.	Other Canadian Equivalent	£ s d
1000	Bi 38	S/4	6045P	1M/G48/11	6 10 0
2000	Bi 38	S/1	13177P	2M/G48/17	7 10 0

SPARE ANODISED ALUMINIUM REFLECTORS

Ref.	Beam Angle	Finish	Diameter in inches	Lantern Patt. No.	£ s d
273	Medium	Polished	10⅜	60M, 560M	2 1 0
275	Wide	Matt	10⅜	35, 60, 560	2 1 0
277	Wide	Matt	15¼	49	2 19 6
279	Medium	Polished	15	502	3 3 0
281	Narrow	Polished	10	58, 558	2 15 0
283	Spotlight	Polished	8	All 53's	2 5 0
287	Narrow	Polished	12½	76	2 17 6
290	Spotlight	Polished	5	43, 51	1 0 0
319	Spotlight	Polished	6	143, 543	1 4 0
357	Spotlight	Polished	7¾	All 23's (rear)	1 6 0
358	Spotlight	Polished	7¾	All 23's (front)	1 4 0
368	Spotlight	Polished	7½	All 243's	1 4 0
435	Spotlight	Polished	4¾	All 123's	18 0
475	Wide	Matt	8½	137, 537 "S" equip.	12 6
496	Spotlight	Polished	10	All 93's (front)	2 17 6
497	Spotlight	Polished	10	All 93's (rear)	2 17 6

SPARE TOUGHENED FRONT GLASSES (without frame)

212	16″×16″ for Patt. 502	1 11 6
347	10″×9½″ ,, ,, 537	7 9
350	11¾″×11¾″ ,, ,, 560, 543, 558	8 3

SPARE ON 20 HEAT-ABSORBING GLASS

288	Set of 8 slats to form square for Patt. 152	10 10 0
291	Set of 9 slats to form square for Patt. 501	11 15 0
292	Single slats only as 288 and 291 above	1 10 0
311	Disc for Patt. 52 (3½-in. diam.)	4 5 0

CATALOGUE INDEX REFERENCES

INDEX TO PATTERN NUMBERS

INDEX OF TYPES

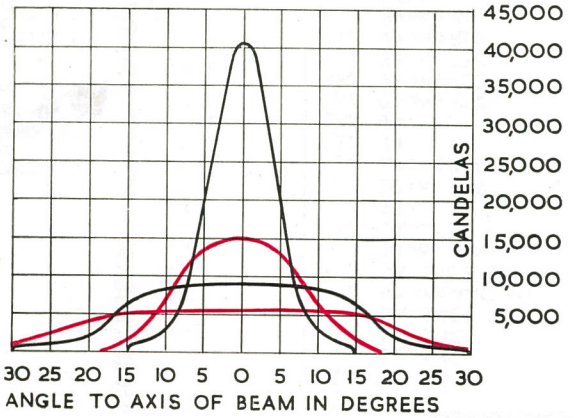
PHOTOMETRIC DATA

To determine the illumination at a point on a surface, measure its distance from the lantern to be used and the angle to the axis of the beam. Divide the figure obtained from the curve for the luminous intensity at this angle, by the square of the distance. The answer will be in Lumens per sq. ft. or foot candles to taste, if the distance is measured in feet; or in lumens per sq. metre or lux respectively, if the distance is in metres.

Figures are for 230v. lamps. For 115v. lamps add approx. 10%.

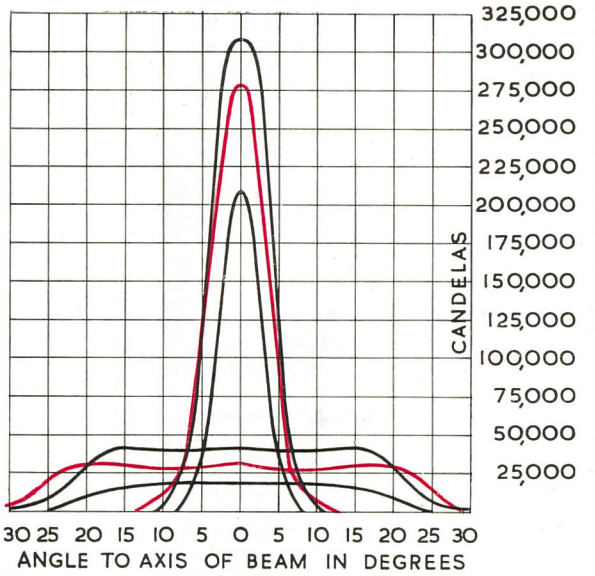
Luminous Intensity of Profile (Hard Edge) Spots

Lamp	Lantern	Beam Angle	Candelas approx
500w. T/1	Patt. 23	22°	16,650
500w. T/1	Patt. 23F	30°	8,900
500w. T/1	Patt. 23W	37°	6,530
500w. T/1	Patt. 23N	11°	34,000
1000w. T/2	Patt. 53	19°	29,000
1000w. A1/11	Patt. 93	15°	175,000
1000w. A1/11	Patt. 93N	8°	305,000



Shown in black, max. and min. curves for Patt. 123 500w. T/1.

Shown in red, max. and min. curves for { Patt. 123W } 500w. / { Patt. 123TV } T/1.



Shown in black, max. and min. curves for { Patt. 243 1000w. T/2. / Patt. 243BP 2000w. S/1.

Shown in red, max. and min. curves for Patt. 243TV 2000w. S/1.

WORLD DISTRIBUTION

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Strand Electric (Australia) Pty. Ltd., 212 Graham Street, Port Melbourne, Victoria. Tel. 64-1267.

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The Bermuda Electric Light Co. Ltd., Reid Street, Hamilton.

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Wilson & Johnstone, 3 Broadway, Port-of-Spain. Tel. 5645/6.

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United Electricals Ltd., P.O. Box 681, Yahala Building, Staples Street, Colombo. Tel. 5496.

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Carlos Casagrande, Degero, Helsingfors. Tel. 68, 02, 69.

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The General Electric Co. of Pakistan Ltd.,
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EXPORT INFORMATION AND METRIC EQUIVALENTS

All direct-operated Switchboards and Dimmerboards are fitted with locking type rewireable fuses as standard. English Electric H.R.C. cartridge fuses, which are now fitted as standard on all remote lighting controls, or Siemens Zed type fuses can be fitted providing they are specified at the time of tender. Equipment is supplied to comply with special regulations (such as C.S.A. in Canada, or Finland, etc.) providing these are specified at the time of tender.

Full details of supply voltage, frequency, and distribution network are required for all equipment having a Type reference.

As both packing and shipping costs vary considerably with the size of the complete consignment, F.O.B. or C.I.F. costs are only given against specific enquiries.

There is a difference of 3mm between certain English and Continental projection lamps. Lanterns with P.40 prefocus lampholders have a removable packing piece to compensate for this difference. For optimum results check that the projector lamp filament is centred with the optical system. Remove packing piece where necessary.

Dimensions and weights in catalogue are of standard equipment and are quoted as a guide. Where they may be critical they should be confirmed in case local regulations may have altered them.

WEIGHT CONVERSION TABLE

Ounces or lbs.		*Kg.*	*Lbs.*	*Kg.*	*Lbs.*	*Kg.*	*Lbs.*	*Kg.*
1	–	·028	1	0·45	17	7·71	33	15·0
2	–	·057	2	0·91	18	8·16	34	15·4
3	–	·085	3	1·36	19	8·62	35	15·9
4	¼	·113	4	1·81	20	9·07	36	16·3
5	–	·142	5	2·27	21	9·52	37	16·8
6	–	·170	6	2·72	22	9·98	38	17·2
7	–	·198	7	3·17	23	10·4	39	17·7
8	½	·227	8	3·63	24	10·9	40	18·1
9	–	·255	9	4·08	25	11·3	41	18·6
10	–	·283	10	4·53	26	11·8	42	19·0
11	–	·312	11	4·99	27	12·2	43	19·5
12	¾	·340	12	5·44	28	12·7	44	19·9
13	–	·369	13	5·90	29	13·1	45	20·4
14	–	·397	14	6·35	30	13·6	46	20·9
15	–	·426	15	6·80	31	14·1	47	21·3
16	1	·454	16	7·26	32	14·5	48	21·8

LENGTH CONVERSION TABLE
(Approximate)

To use this table – take horizontal line of figures opposite *inches* or *feet and inches* and the vertical column of figures under fractions (at the top) and the *millimetre* equivalent will be found at the intersection of the vertical and horizontal columns.

Ft.Ins. or Ins.		0	¼	½	¾
–	–	0	—	6	13	19
0	1	1	25	32	38	44
0	2	2	51	57	64	70
0	3	3	76	83	89	95
0	4	4	102	108	114	121
0	5	5	127	133	140	146
0	6	6	152	159	165	171
0	7	7	178	184	191	197
0	8	8	203	210	216	222
0	9	9	229	235	241	248
0	10	10	254	260	267	273
0	11	11	279	286	292	298
1	0	12	305	311	318	324
1	1	13	330	337	343	349
1	2	14	357	362	368	375
1	3	15	381	387	394	400
1	4	16	406	413	419	425
1	5	17	432	438	444	451
1	6	18	457	464	470	476
1	7	19	483	489	495	502
1	8	20	508	514	521	527
1	9	21	533	540	546	552
1	10	22	559	565	571	578
1	11	23	584	591	597	603
2	0	24	610	616	622	629
2	1	25	635	641	648	654
2	2	26	660	667	673	679
2	3	27	686	692	698	705
2	4	28	711	717	724	730
2	5	29	737	743	749	756
2	6	30	762	768	775	781
2	7	31	787	794	800	806
2	8	32	813	819	825	832
2	9	33	838	844	851	857
2	10	34	864	870	876	883
2	11	35	889	895	902	908
3	0	36	914	921	927	933
3	1	37	940	946	952	959
3	2	38	965	971	978	984
3	3	39	991	997	1003	1009
3	4	40	1016	1022	1029	1035

Ft.Ins. or Ins.		0	
3	5	41	1041
3	6	42	1067
3	7	43	1092
3	8	44	1117
3	9	45	1143
3	10	46	1168
3	11	47	1194
4	0	48	1219
4	1	49	1244
4	2	50	1270
4	3	51	1295
4	4	52	1321
4	5	53	1346
4	6	54	1371
4	7	55	1397
4	8	56	1422
4	9	57	1448
4	10	58	1473
4	11	59	1498
5	0	60	1524
5	1	61	1549
5	2	62	1575
5	3	63	1600
5	4	64	1625
5	5	65	1651
5	6	66	1676
5	7	67	1702
5	8	68	1727
5	9	69	1752
5	10	70	1778
5	11	71	1083
6	0	72	1829
6	1	73	1854
6	2	74	1879
6	3	75	1905
6	4	76	1930
6	5	77	1956
6	6	78	1981
6	7	79	2007
6	8	80	2032
6	9	81	2057
6	10	82	2083
6	11	83	2108
7	0	84	2134

1 Yard = 3 Feet = 914 mm
1 Cwt = 112 lbs = 50·8 kg

Printed in England 40M W51846

STRAND ELECTRIC