STRAND ELECTRIC

THEATRICAL LIGHTING

INTERIM EDITION 1949

Owing to present supply difficulties, it is not yet possible to offer the same wide range of equipment as pre-war. Furthermore, fluctuating costs make it inadvisable to print prices, but these can always be obtained on application.

Much of our equipment is undergoing redesign, and further pages for insertion into this folder will be made available as soon as possible. In connection with this, please see overleaf.

THE STRAND ELECTRIC & ENGINEERING CO., LTD.

"Seecol" Registered Trade Mark

Head Office and Showrooms

29 KING ST., COVENT GARDEN, LONDON, W.C.2

Sales Counter and Goods Entrance

24 Floral St., Covent Garden, London, W.C.2

Telephone: TEMPLE BAR 4444 (16 lines) Telegraphic Address: SPOTLITE, RAND, LONDON

Branches at

399/405 OLDHAM ROAD, MANCHESTER, 10

Telephone: COLLYHURST 2736

62 DAWSON STREET, DUBLIN

Telephone: DUBLIN 74030

The apparatus listed in this catalogue, falls readily into sections as follows :

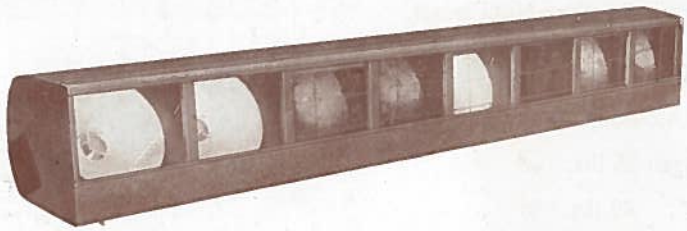
A. Footlights and Battens.
B. Stage Floods.
C. Spotlights and Accessories.
D. Arc Spotlights and Resistances.
E. Cyclorama Lighting.
F. Effects, Optical and Sound.
G. Plugs and Sockets (Dip Boxes, etc.).
H. Dimmers and Control.
I. Auditorium Lighting and Automatic Dimmers.
J. Outdoor Flood Lighting.
K. Shop Window and Photographic Lighting.
L. Accessories (Stands, Colour Mediums, Lenses, etc.).
M. Lamps and Carbons.
N. Signs.
O. Hire Charges.

Leaflets are correspondingly lettered in the top right-hand corners, and numbered to enable them to be inserted in the correct place in their section.

The numbering will not however be consecutive, so that leaflets issued at a future date can be inserted in correct sequence.

STRAND FOOTLIGHTS

PATTERN "S" FOR 60, 100 or 150 WATT LAMPS



This Footlight has compartments spaced at 9-inch centres and gives more light from fewer lamps than the old 6, 7 and 8-inch centre types which it supersedes. The "Sunray" silvered glass reflectors give wide-angle beams free of hot spots, and light well up the house tabs, even when placed as close as 3 feet.

SPECIFICATION

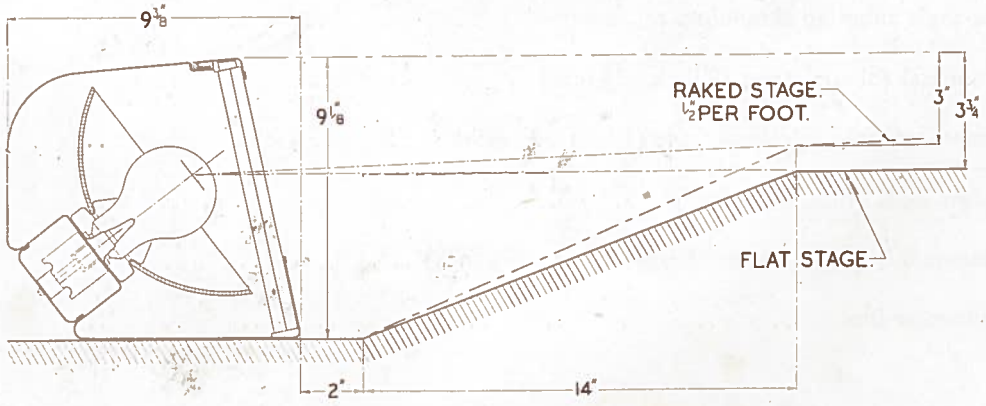
Housing is constructed in 20 gauge sheet steel, efficiently ventilated, with pressed steel compartment divisions welded in place at 9-inch centres, and the whole is finished in black crystalline outside and matt black inside. Each compartment is fitted with a metal frame with guard wires to take the colour medium and a type A235 "Sunray" glass reflector mounted in a spring-steel spider and Edison Screw lampholder. Footlight is manufactured in 3 foot and 6-foot lengths and multiples thereof.

Wiring, which is housed in a sheet-metal trough with removable lid, is carried out in fireproof cable for colours and circuits to suit requirements, and is terminated in tails, or in certain circumstances a connector box (extra) on actors' right or left as required.

Fixing.—Rests flat on the floor of the footlight trough, for dimensions of which see diagram. For preference electrical connections should be made through flexible metallic tubing to permit easy removal for cleaning, access to wiring, etc.

(continued overleaf)

DIMENSIONS



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DUBLIN
DUB. 74030

SPECIFICATION *(cont'd)*

Lamps.— 60-watt General Service type with E.S.Cap.

100- ,, ,, ,, ,, ,, ,,

150- ,, Theatre Batten ,, ,, ,,

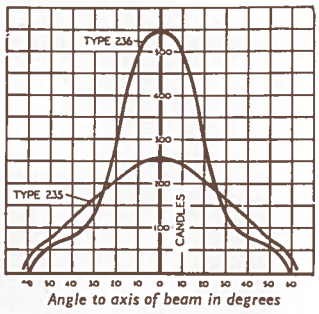
N.B.—Lamps should be clear NOT pearl.

Beam Angle.—Cut off 125°, Beam Angle 120°.

Weight.—Complete with colour frames and reflectors

per 3-foot length 25 lbs.

,, 6-foot ,, 49 lbs.



DISTRIBUTION CURVE

100 WATT LAMP WITH TYPE 235 & 236 REFLECTORS.

PRICES

(Exclusive of lamps and connector box, but including " Cinemoid " colour media in frames)

Length	Compartments	£ s. d.	Length	Compartments	£ s. d.	Length	Compartments	£ s. d.
3 ft.	4		18 ft.	24		33 ft.	44	
6 ft.	8		21 ft.	28		36 ft.	48	
9 ft.	12		24 ft.	32		39 ft.	52	
12 ft.	16		27 ft.	36		42 ft.	56	
15 ft.	20		30 ft.	40		45 ft.	60	

Curves, non-standard lengths and special lengths with inter-connecting plugs .. Prices on application

A.235—Extra wide-angle glass reflectors .. .. each

A.270—Wide-angle anodised aluminium reflectors .. .. ,,

A.240—Extra metal colour frames (8 inch × 9¼ inch) .. .. ,,

A.241—Gelatine, any colour, except frost (8 inch × 9¼ inch) .. .. per doz.

A.242—Gelatine frost (8 inch × 9¼ inch) .. .. ,,

A.243—" Cinemoid " in any colour or frost (8 inch × 9¼ inch) .. .. ,,

Footlight Connector Box .. .. each

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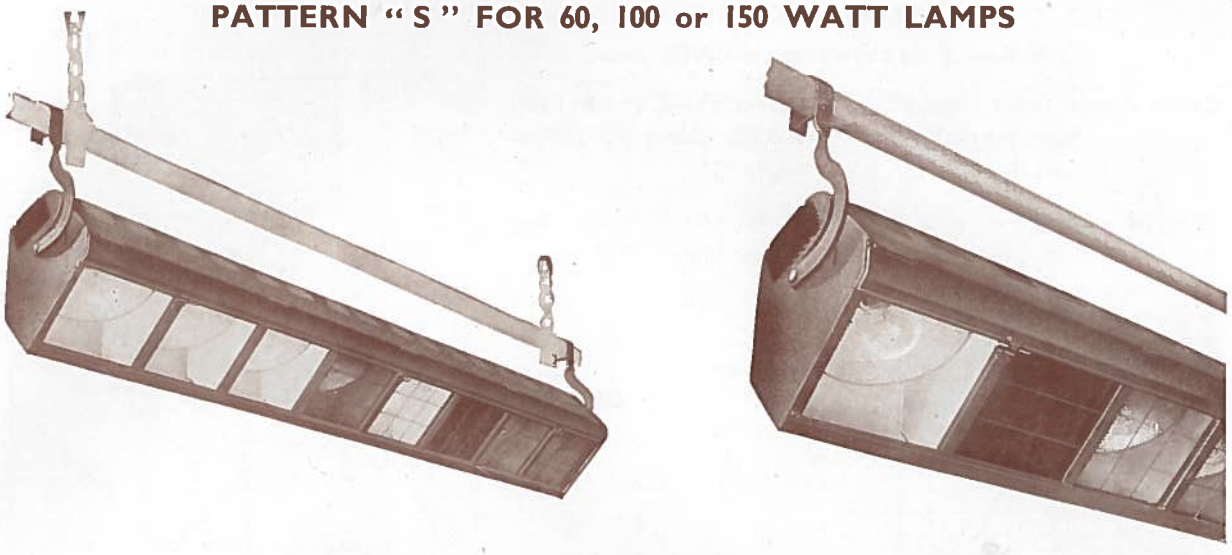
STRAND BATTENS

PATTERN "S" FOR 60, 100 or 150 WATT LAMPS



This Batten has compartments spaced at 9 inch centres and gives much more light from fewer lamps than the old 6, 7 and 8-inch centre types which it supersedes. The "Sunray" silvered glass reflectors give medium-angle beams free of hot spots, the main beams being directed down to the Acting Area while direct light from the lamps provides adequate illumination for adjacent borders.

The external surfaces of the Batten are designed to permit hanging scenery to slide off without causing any damage to either.

For use on small stages and for close range work with cycloramas, skycloths, etc., wide-angle reflectors can be fitted in place of the medium-angle type referred to above.

SPECIFICATION

Housing is constructed in 20-gauge sheet steel efficiently ventilated with pressed steel compartment divisions welded in place at 9-inch centres, and the whole is finished in black crystalline outside and stove white enamel inside. Each compartment is fitted with a metal frame with guard wires to take colour medium, E.S. lampholder, and spring steel spider carrying type A236 circular medium-angle Sunray silvered glass reflector. (For close range work the latter is replaced by wide angle type A235 reflector.) Batten is manufactured in 3-foot or 6-foot lengths or multiples thereof.

Wiring, which is housed in a sheet-metal trough with removable lid, is carried out in fireproof cable for colours and circuits to suit requirements, and is terminated in short tails (or in certain circumstances a connector box) on actors' right or left as required.

Suspension.—Arms pivoted to the batten at the centre of gravity are fitted every 6 feet. The standard termination is a clamp to fit 1½-inch gas barrel (see dimension C on sketch overleaf). A bolt positively locates and locks the batten at any desired angle. An alternative arrangement (D) carries a shackle (shown dotted) for use when hanging direct from hooks in the ceiling. Extension arms (B) are available where lanterns are interposed between sections of batten, to bring the lower edges in one line.

(continued overleaf)

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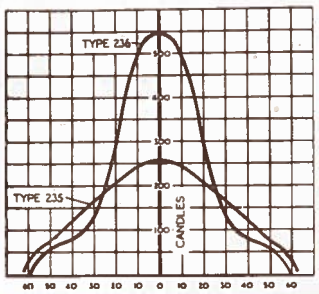
SPECIFICATION (*cont'd*)

Lamps.— 60-watt General Service with E.S. Cap.
100- ,, ,, ,, ,, ,,
150- ,, Theatre Batten type ,,
N.B.—Lamps should be clear NOT pearl.

Beam Angle (with standard A236 reflector).—Cut off 120°, Beam Angle 95° ; or with A235 wide-angle reflector—Cut off 125°, Beam Angle 120°.

Weight.—Complete with colour frames and reflectors per 3-foot length 30 lbs., per 6-foot length 58 lbs.

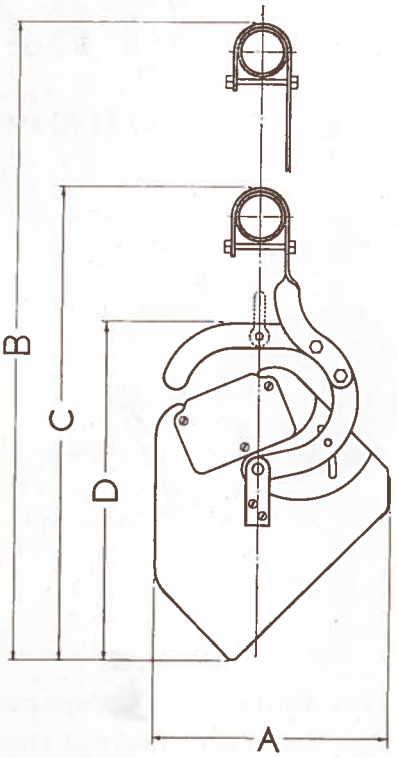


DISTRIBUTION CURVE

100 WATT LAMP WITH TYPE 235 & 236 REFLECTORS.

DIMENSIONS

	Ft.	In.
A	0	9
B	2	9
C	1	6
D	1	1



PRICES

(Exclusive of lamps and connector box, but including " Cinemoid " colour media)

Length	Compartments	£ s. d.	Length	Compartments	£ s. d.	Length	Compartments	£ s. d.
3 ft.	4		18 ft.	24		33 ft.	44	
6 ft.	8		21 ft.	28		36 ft.	48	
9 ft.	12		24 ft.	32		39 ft.	52	
12 ft.	16		27 ft.	36		42 ft.	56	
15 ft.	20		30 ft.	40		45 ft.	60	

Broken and special lengths with interconnecting plugs .. .. Prices on application
Batten Pilots.—Fitted to existing compartments on white circuit .. .. each
Fitted as additional compartments .. .. ,,
A.236.—Extra medium-angle glass reflectors .. .. ,,
A.271.—Medium-angle anodised aluminium reflector .. .. ,,
A.235.—Wide-angle glass reflectors .. .. ,,
A.270.—Wide-angle anodised aluminium reflector .. .. ,,
A.240.—Extra metal colour frames (8 inch × 9¼ inch) .. .. ,,
A.241.—Gelatine any colour except frost (8 inch × 9¼ inch) .. .. per doz.
A.242.—Gelatine frost (8 inch × 9¼ inch) .. .. ,,
A.243.—Cinemoid colours or frost (8 inch × 9¼ inch) .. .. ,,
Batten connector box .. .. each

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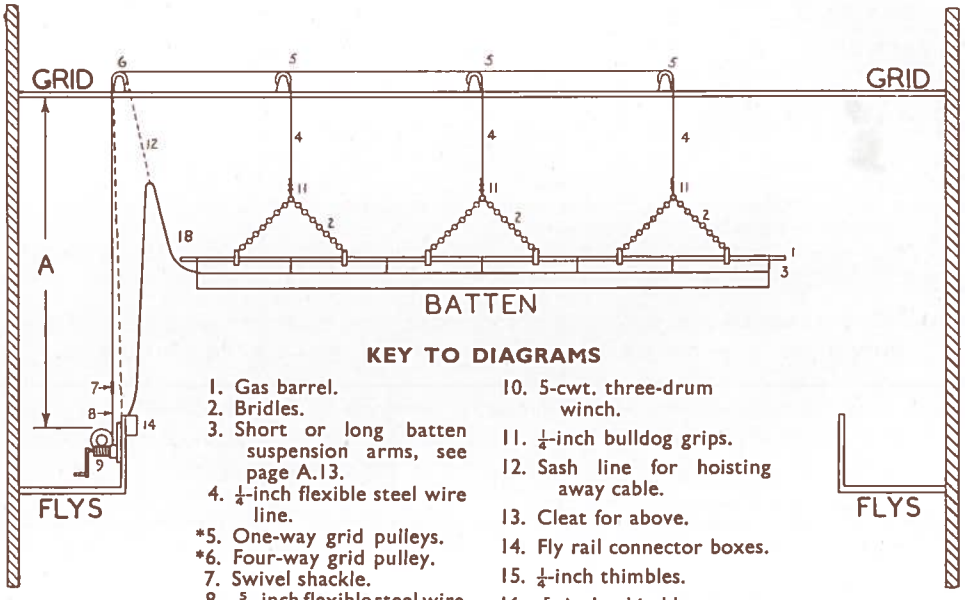
STRAND BATTEN SUSPENSIONS

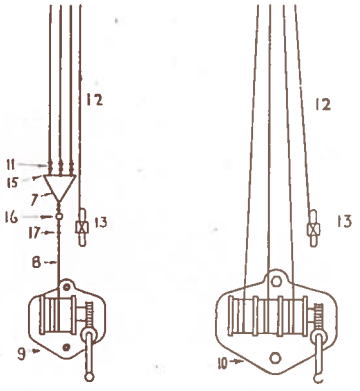
While 3-line suspension is adequate for compartment battens up to 36 feet long, greater lengths should be hung from 4 lines. Either single-drum or multi-drum winches may be used, but the former are only suitable where the dimension from grid to winch ("A" on sketch below) is greater than the distance through which the batten must be raised and lowered.

The table overleaf gives the materials and quantities required according to length of batten and type of winch to be used. The tables also apply for spot and flood battens, but see Note 2 overleaf. Where circumstances preclude raising and lowering battens, these may be fixed to wall or ceiling by means of a special saddle, for details of which see overleaf at foot.

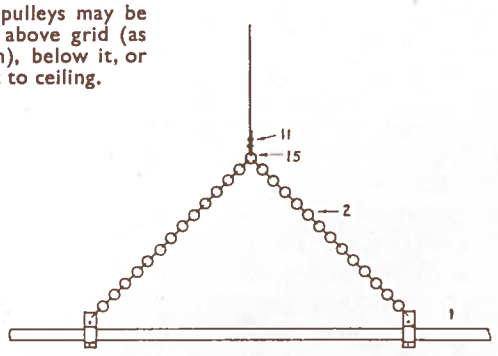


KEY TO DIAGRAMS

1. Gas barrel.
2. Bridles.
3. Short or long batten suspension arms, see page A.13.
4. $\frac{1}{4}$-inch flexible steel wire line.
*5. One-way grid pulleys.
*6. Four-way grid pulley.
7. Swivel shackle.
8. $\frac{5}{16}$-inch flexible steel wire line.
9. 5-cwt. single-drum winch.
10. 5-cwt. three-drum winch.
11. $\frac{1}{4}$-inch bulldog grips.
12. Sash line for hoisting away cable.
13. Cleat for above.
14. Fly rail connector boxes.
15. $\frac{1}{4}$-inch thimbles.
16. $\frac{5}{16}$-inch thimbles.
17. $\frac{5}{16}$-inch bulldog grips.
18. Batten connecting cables.



* Grid pulleys may be fixed above grid (as shown), below it, or direct to ceiling.



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PARTS	Battens up to 36 feet		Battens over 36 feet		Spot/Flood Battens (see note 2)	PRICES
	5-cwt. winch		10-cwt. winch		10-cwt. winch	
	1 drum	3 drums	1 drum	4 drums	3 drums	
A. 25. 1½-inch Gas barrel (see Note 1)	1	1	1	1	1	per foot
A. 26. Bridles	3	3	4	4	3	each
A. 27. One-way Grid pulleys ...	3	3	4	4	3	,,
A. 28. Three-way Grid pulleys ...	1	1	–	–	1	,,
A. 38. Four-way Grid pulleys ...	–	–	1	1	–	,,
A. 29. 5-cwt. single-drum winch ...	1	–	–	–	–	,,
A. 30. 5-cwt. three-drum winch ...	–	1	–	–	–	,,
A. 39. 10-cwt. single-drum winch ...	–	–	1	–	–	,,
A.244. 10-cwt. three-drum winch (see Note 2)	–	–	–	–	1	,,
A. 40. 10-cwt. four-drum winch ...	–	–	–	1	–	,,
A. 31. ¼-inch flexible steel wire lines	3	3	4	4	–	per 100 feet
A. 32. $\frac{5}{16}$-inch flexible steel wire lines	1	–	1	–	1	,,
A. 33. ¼-inch bulldog grips ...	12	6	16	8	–	each
A. 34. $\frac{5}{16}$-inch bulldog grips	2	–	2	–	6	,,
A. 35. ¼-inch thimbles	6	3	8	4	–	,,
A. 36. $\frac{5}{16}$-inch thimbles	1	–	1	–	3	,,
A. 37. Swivel shackles	1	–	1	–	–	,,
Optional						
A.320.—Sash line for hoisting away cables (see Note 3) ...	1	1	1	1	1	per 100 feet
A.321.—Cleat for above (see Note 3)	1	1	1	1	1	each

NOTES

1.—*Barrel should be 2 feet longer than battens.*

2.—*The 10-cwt. 3-drum winch should be used on spot and flood battens where the weight exceeds 5-cwt. but the length does not justify 4-line suspension.*

3.—*If electric cables are hoisted away, for battens up to 36 feet long, substitute one 4-way grid pulley* **in place of** *one 3-way shown in table; for battens over 36 feet,* **add** *one 1-way grid pulley.*

A. 20.—**Fly Rail Connector boxes,** consisting of sheet-steel box, with terminals for up to 12 double pole ways and earth, complete with cable gland for batten tails .. each

Batten connecting cables.—Tinned copper wires 70/.0076 insulated with a double jacket of vulcanized india-rubber, taped with numbered tapes, cores twisted together, taped, asbestos braided, asbestos painted overall:—

	No. of Cores	Amps.	
A.51.	9	8	.. .. per foot
A.53.	15	6	.. .. ,,
A.55.	25	5	.. .. ,,

Asbestos safety borders (with tapes for tying to barrels behind spotlights), to comply with L.C.C. regulations.

A. 42.—12-feet long × 2-feet deep .. .. each

A. 43.— 6-feet long × 2-feet deep .. .. ,,

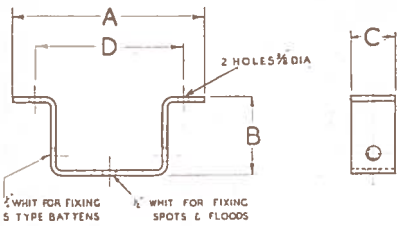
A.259.—**Wall or Ceiling fixing saddles,** for use when battens are not to be raised and lowered (illustrated on page L.31.)

Quantity required : 1 per length of batten (6-feet or 3-feet) plus one. Thus a 33-feet batten consisting of five 6-ft. lengths and one 3-ft length will require 6 (number of lengths) +1=7.

Price .. .. each

DIMENSIONS

A = $6\frac{5}{8}$
B = $2\frac{3}{4}$
C = $1\frac{1}{2}$
D = $5\frac{1}{8}$



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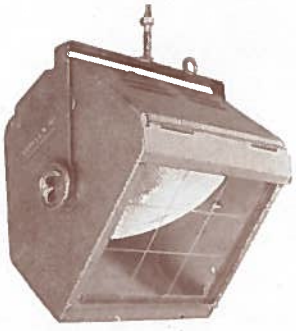
STRAND STAGE FLOODS

PATTERN 237 MEDIUM OR WIDE-ANGLE FLOOD, 60, 100 OR 150 WATT

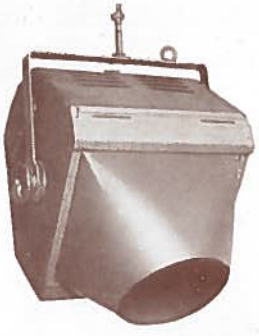
Although this flood finds many uses in the professional theatre it has been designed particularly with the very small stage in view. It is normally fitted with a medium-angle " Sunray " glass reflector, which is very suitable for lighting over a distance, for example, from No. 1 Batten position to the Acting Area, while sufficient direct light is available for lighting the adjacent border. If, however, a controlled beam is required, a cut-off attachment can be fitted to the front colour runners, when the lantern becomes in effect a miniature Acting Area Flood.

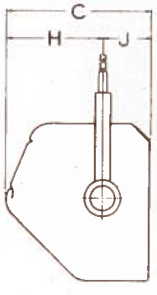


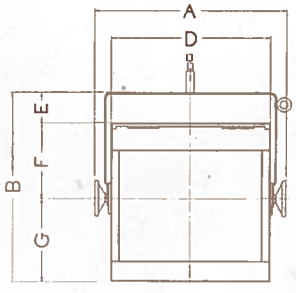
A wide-angle reflector can be fitted as an alternative, where the lantern is required to provide an even spread of light, free of hot spot, for lighting backcloths, or for use as a footlight.

SPECIFICATION

The housing is constructed in 20-gauge sheet steel, efficiently ventilated, fitted with runners with a light-tight hinged flap at top to take metal colour frames, and a Type B.236 (medium angle) or B.235 (wide angle) circular " Sunray " glass reflector. The Tilting Fork has a $\frac{3}{8}$-inch Whitworth stem (for suspension or insertion in stand) and eyelet for safety chain (not included). The lantern is locked in position by two hand wheels. Wired with 3-foot heat-resisting tails. Finish : black crystalline enamel outside, matt black inside. Supplied complete with one 8-inch × $9\frac{1}{4}$-inch metal colour frame.







DIMENSIONS

		Ft.	In.			Ft.	In.
A	...	0	12	F	...	0	$4\frac{3}{4}$
B	...	0	$11\frac{1}{2}$	G	...	0	5
C	...	0	9	H	...	0	6
D	...	0	$9\frac{3}{4}$	J	...	0	3
E	...	0	$1\frac{3}{4}$				

Weight.—Nett weight $10\frac{1}{4}$ lbs.

(continued overleaf)

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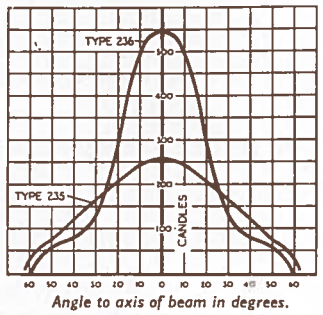
DUB. 74030

SPECIFICATION—(*cont'd*)

Lamps.—60-watt General Service type with E.S. Cap.
100-watt General Service type with E.S. Cap.
150-watt Theatre Batten type with E.S. Cap.

N.B.—Lamps should be clear NOT pearl.

Beam Angles.—With B.236 medium-angle reflector. Beam Angle 95°, cut-off angle 120°. With medium-angle reflector and cut-off attachment. Beam angle 50°, cut-off angle 80°. With B.235 wide-angle reflector. Beam angle 120°, cut-off angle 125°.



DISTRIBUTION CURVE
100 WATT LAMP WITH TYPE 235 & 236 REFLECTORS.

PRICE (excluding lamp)	each
B.235.—Extra wide-angle glass reflectors	,,
B.270.—Wide-angle anodised aluminium reflector..	,,
B.236.—Extra medium-angle glass reflectors	,,
B.271.—Medium-angle anodised aluminium reflector	,,
B.239.—Hood attachment	,,
B.240.—Extra metal colour frames (8-inch × 9¼-inch)	,,
B.241.—Assorted gelatine colours (8-inch × 9¼-inch)	per doz.
B.243.—" Cinemoid " colours (8-inch × 9¼-inch)	,,
B.185.—15-amp. 3-pin moulded connectors	per pair
B. 64.—Safety chain with snap hook (for use when lantern is suspended)	each
B. 65.—" L " clamp for suspension from 1½-inch barrel	,,
B. 84.—Adjustable barrel clamp (from 1½ inches to 2½ inches diam.)	,,
B.247.—Swivel arm wall bracket (reach 10 inches)	,,
B.248.—Ditto with swivelling extension arm (max. reach 19 inches)	,,
B.251.—Adjustable boomerang bracket for 2-inch diam. barrel (reach 10 inches)	,,
B.252.—Ditto with extension arm (max. reach 19 inches)	,,
B.253.—Adjustable boomerang arm bracket for 1-inch diam. barrel (reach 10 inches) ..	,,
B.254.—Ditto with extension arm (max. reach 19 inches)	,,
B.255.—Fixed boomerang bracket for 2-inch diam. barrel (reach 11 inches)	,,
B.257.—Miniature telescopic stand with cable hook and swivelling collar. Min. height 3 ft. 7 ins. Max. height 5 ft. 9 ins.	,,

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THE STRAND ELECTRIC & ENGINEERING CO., LTD.
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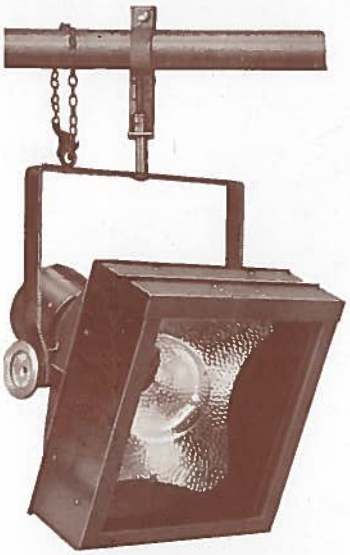
29, KING STREET, COVENT GARDEN, LONDON, W.C.2
SALES COUNTER AND GOODS ENTRANCE: 24, FLORAL STREET, W.C.2
TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND, LONDON

BRANCH
62, DAWSON ST.
DUBLIN
DUB. 74030

STRAND STAGE FLOODS

PATTERN 30 MEDIUM-ANGLE BATTEN FLOOD 500 WATT



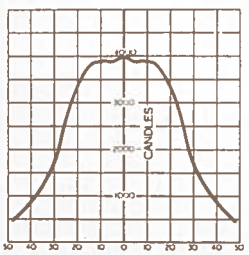
This lantern is suitable for use as a Batten Flood or for any purpose which necessitates the illuminating of objects situated some distance from it.

SPECIFICATION

The housing is constructed in 20-gauge sheet steel, efficiently ventilated fitted with runners to take two metal colour frames with a light tight hinged flap at top and a one-piece B.272 silvered glass "Sunray" reflector. The tilting fork has a ½-inch Whitworth stem (for suspension by barrel clamp or insertion in stand) and eyelet for safety chain (not included). The lantern is locked in position by two hand wheels, and is wired to a 15-amp. 3-pin moulded slip connector. Finish : black crystalline enamel outside, matt black inside. Complete with one metal colour frame.

DISTRIBUTION CURVE

500 WATT GENERAL SERVICE LAMP WITH B.272 SUNRAY REFLECTOR.



Angle to axis of beam in degrees.

Lamp.

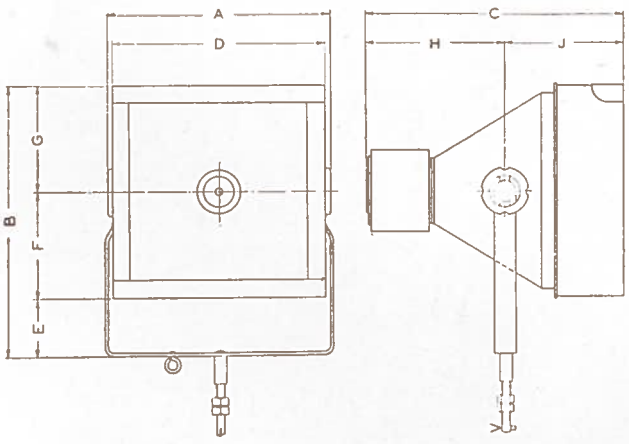
500-watt. General Service Type with G.E.S. Cap.

Beam Angles.

Cut-off 90°, Beam Angle 56°.

Weight

Nett weight 14 lbs.



DIMENSIONS

		Ft.	In.			Ft.	In
A	...	1	2½	F	...	0	6¼
B	...	1	4	G	...	0	6¼
C	...	1	2¾	H	...	0	8½
D	...	1	0½	J	...	0	6¼
E	...	0	3½				

(continued overleaf)

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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

BRANCH
62, DAWSON ST.
DUBLIN
DUB. 74030

PRICE (exclusive of lamp)	each
B.272.—Extra glass " Sunray " reflectors	"
B.273.—Anodised aluminium reflectors	"
B. 61.—Extra metal colour frames with guard wires ($11\frac{3}{4}$-inch × $11\frac{3}{4}$-inch)	per doz.
B. 62.—Ditto with assorted gelatine colours	"
B. 63.—Ditto with " Cinemoid " colours	"
B. 64.—Safety chain with snap hook (for use when lantern is suspended)	each
B. 65.—" L " clamp for suspension from $1\frac{1}{2}$-inch barrel	"
B. 84.—Adjustable barrel clamp (from $1\frac{1}{2}$-inch to $2\frac{1}{2}$-inch diam.)	"
B. 66.—Telescopic stand with cable hook and swivelling collar (min. height 4 feet 3 inches, max. height 7 feet)	"
B.247.—Swivel arm wall bracket (reach 10 inches)	"
B.248.—Ditto with swivelling extension arm (max. reach 19 inches)	"
B.251.—Adjustable boomerang bracket for 2-inch diam. barrel (reach 10 inches)	"
B.252.—Ditto with extension arm (max. reach 19 inches)	"
B.253.—Adjustable boomerang arm bracket for 1-inch diam. barrel (reach 10 inches) ..	"
B.254.—Ditto with extension arm (max. reach 19 inches)	"
B.255.—Fixed boomerang bracket for 2-inch diam. barrel (reach 11 inches)	"

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SALES COUNTER AND GOODS ENTRANCE: 24, FLORAL STREET, W.C.2
TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND, LONDON

BRANCH
62, DAWSON ST.
DUBLIN
DU3. 74030

STRAND STAGE FLOODS

PATTERN 60 WIDE-ANGLE WING FLOOD 500 WATT

This lantern is particularly suitable for use as a wing flood or for any close range work such as illuminating small back cloths and cycloramas. The beam is free from "hot spot".

SPECIFICATION

The housing is constructed in 20-gauge sheet steel efficiently ventilated, fitted with runners with a light-tight hinged flap at top to take two metal colour frames, and a one-piece type B.274 silvered glass "Sunray" reflector. The tilting fork has a ½-inch Whitworth stem (for suspension by barrel clamp or insertion in stand) and eyelet for safety chain (not included). The lantern is locked in position by two hand wheels, and is wired to a 15-amp. 3-pin moulded slip connector. Finish: black crystalline enamel outside, matt black inside. Complete with one metal colour frame.

Lamp.

500-watt. General service type with G.E.S. cap.

Beam Angle.

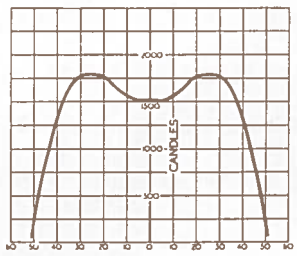
Cut off angle 105°, Beam Angle 100°.

Weight.

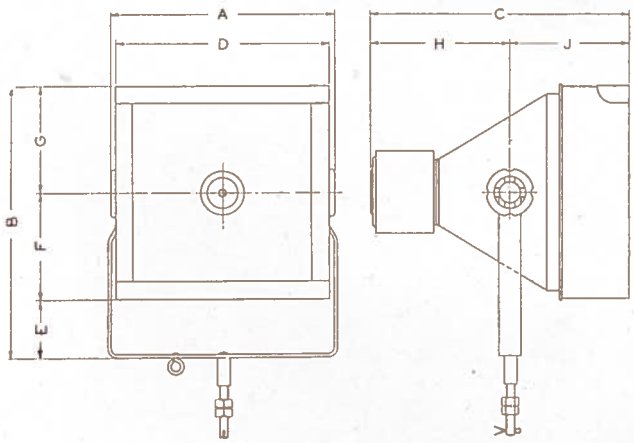
Nett weight 14 lbs.

DISTRIBUTION CURVE

500 WATT GENERAL SERVICE LAMP WITH B.274 SUNRAY REFLECTOR



Angle to axis of beam in degrees.



DIMENSIONS

	Ft.	In.		Ft.	In.		Ft.	In.
A ...	1	2½	D ...	1	0½	G ...	0	6¼
B ...	1	4	E ...	0	3½	H ...	0	8½
C ...	1	2¾	F ...	0	6¼	J ...	0	6¼

(continued overleaf)

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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

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PRICE (exclusive of lamp)	each
B.274.—Extra glass " Sunray " reflectors	"
B.275.—Anodised aluminium reflectors	"
B. 61.—Extra metal colour frames with guard wires (11¾-inch × 11¾-inch)	per doz.
B. 62.—Ditto with assorted gelatine colours	"
B. 63.—Ditto with " Cinemoid " colours	"
B. 64.—Safety chain with snap hook (for use when lantern is suspended)	each
B. 65.—" L " clamp for suspension from 1½-inch barrel	"
B. 84.—Adjustable barrel clamp (from 1½-inch to 2½-inch diam.)	"
B. 66.—Telescopic stand with cable hook and swivelling collar (min. height 4 feet 3 inches, max. height 7 feet)	"
B.247.—Swivel arm wall bracket (reach 10 inches)	"
B.248.—Ditto with swivelling extension arm (max. reach 19 inches)	"
B.251.—Adjustable boomerang bracket for 2-inch diam. barrel (reach 10 inches)	"
B.252.—Ditto with extension arm (max. reach 19 inches)	"
B.253.—Adjustable boomerang arm bracket for 1-inch diam. barrel (reach 10 inches) ..	"
B.254.—Ditto with extension arm (max. reach 19 inches)	"
B.255.—Fixed boomerang bracket for 2-inch diam. barrel (reach 11 inches)	"

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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

BRANCH
62, DAWSON ST.
DUBLIN
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STRAND STAGE FLOODS

PATTERN 49A WING FLOOD 1,000 WATT

This lantern gives a wide angle beam of light, free from "hot spot." Suitable for illuminating back-cloths, large cycloramas, etc., at close range, and for use in the wings.

SPECIFICATION

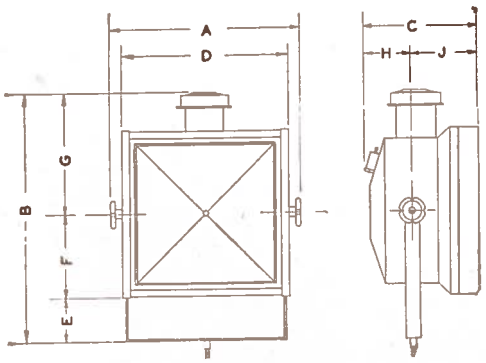
Lantern constructed in sheet steel, efficiently ventilated. Fitted with runners to take two metal colour frames, hinged sprung light-tight flaps each side. Four-piece Type B.276 silvered glass "SUNRAY" reflector. The tilting fork has a ½-inch Whitworth stem (for suspension by barrel clamp or insertion in stand) and eyelet for safety chain (not included). The lantern is locked in position by two hand wheels, and is wired to a 15-amp. 3-pin moulded slip connector. Finish: black crystalline enamel outside, matt black inside. Complete with one metal colour frame.

PRICE (exclusive of lamp) .. ..

B.276.—Extra 4-piece silvered glass reflectors	each
B.275.—Extra anodised aluminium reflectors	,,
B. 67.—Extra metal colour frames (16¾-inches × 16¾-inches) ..	per doz.
B. 68.—Ditto, with assorted gelatine colours	,,
B. 69.—Ditto, with assorted "Cinemoid" colours	,,
B. 66.—Telescopic stand (min. height 4 feet 3 inches, max. height 7 feet). (As illustrated)	each
B. 64.—Safety chain with snap hook (for use when lantern is suspended)	,,
B. 65.—"L" clamp for 1½-inch barrel	,,
B. 84.—Adjustable barrel clamp (from 1½-inches to 2½-inches diam.)	,,
B.251.—Adjustable boomerang bracket for 2-inch diam. barrel (reach 10 inches)	,,
B.252.—Ditto, with extension arm (max. reach 19 inches) ..	,,
B.255.—Fixed boomerang bracket for 2-inch diam. barrel (reach 11 inches)	,,

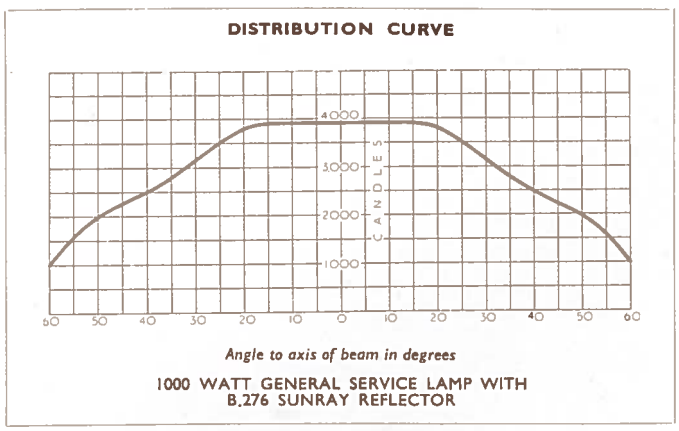
Lamp.—1,000-watt General Service type with G.E.S. Cap. **Beam Angle** 100°. **Cut Off Angle** 105°.

Weight.—Nett weight of Lantern 27 lbs.



DIMENSIONS

	Ft.	In.		Ft.	In.		Ft.	In.
A ...	1	6	D ...	1	5	G ...	1	1
B ...	2	2½	E ...		5	H ...		6
C ...	1	1	F ...		8½	J ...		7



1000 WATT GENERAL SERVICE LAMP WITH B.276 SUNRAY REFLECTOR

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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

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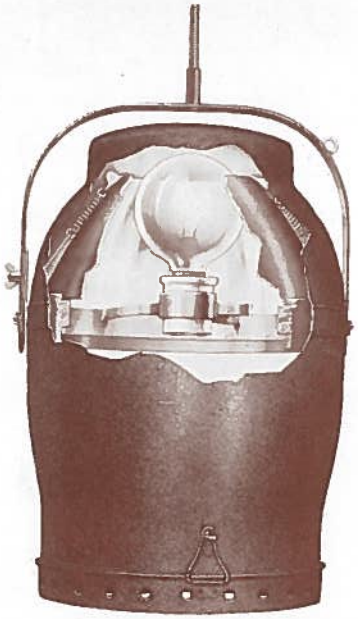
FOR MEDIUM-ANGLE VERSION OF THIS LANTERN SEE OVERLEAF

STRAND STAGE FLOODS

PATTERN 76 ACTING AREA FLOOD, 1,000 WATT (NARROW ANGLE)



This lantern, of completely new design, gives a controlled narrow-angle vertical beam, and is therefore suitable for lighting Acting Areas, particularly in close proximity to Cycloramas, Sky Cloths, etc., where spill light is not permissible. The design of the lantern is such that spill rings and their consequent loss of light are unnecessary.

SPECIFICATION

The housing consists of aluminium spinnings attached to a central aluminium casting which carries the G.E.S. lampholder and new type one-piece glass reflector with heat resisting silvering.

Affixed to the central casting are the swivel pins and locking plate for the tilting fork, which is fitted with a ½-inch Whitworth stem (for suspension) and eyelet for safety chain (not included). At the bottom of the lantern is a hinged door which carries the colour frame. Wired with 3-foot heat-resisting tails. Finished black crystalline enamel outside, matt black inside. Supplied complete with one 11½-inch diameter metal colour frame.

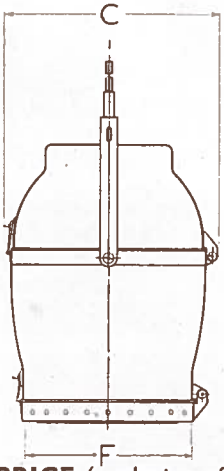
Lamp.— 500-watt Class B.1 Round Bulb Projector Lamp with G.E.S. Cap, or
1,000-watt Class B.1 Round Bulb Projector Lamp with G.E.S. Cap.

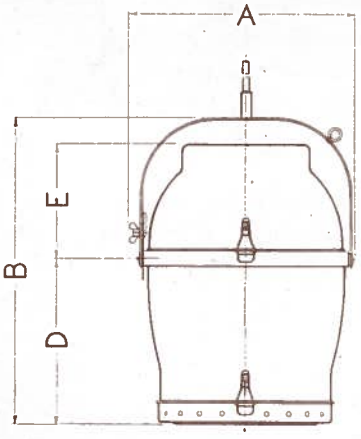
Beam Angles.—Cut off 24°, Beam Angle 24°.

Weight.—Nett weight 16 lbs.

DIMENSIONS

	Ft.	In.
A	1	3½
B	1	9¼
C	1	2¾
D	0	11½
E	0	8
F	0	11½ dia. (Colour Frame)

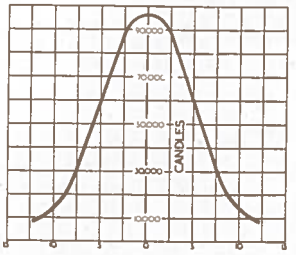




DISTRIBUTION CURVE

1,000] WATT, CLASS B1 ROUND BULB PROJECTOR LAMP WITH B.286 SUNRAY REFLECTOR.

(NARROW ANGLE)



PRICE (exclusive of lamp) .. .. each

B.286.—Extra silvered glass reflectors (Narrow Angle) .. .. ,,
B.287.—Extra anodised aluminium reflectors (Narrow Angle) .. .. ,,
B.226.—Extra 11½-inch diameter metal colour frames .. .. ,,
B.227.—Ditto with gelatine colour .. .. ,,
B.228.—Ditto with Cinemoid colour .. .. ,,
B. 64.—Safety chain with snap hook .. .. ,,
B. 65.—" L " clamp for suspension from 1½-inch barrel .. .. ,,
B. 84.—Adjustable barrel clamp (from 1½ ins. to 2½ ins. diam.) .. .. ,,

Remotely controlled colour-change mechanism—see overleaf

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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND, LONDON

BRANCH
62, DAWSON ST.
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DUB. 74030

SEE OVERLEAF, PARTICULARLY NOTE AT FOOT

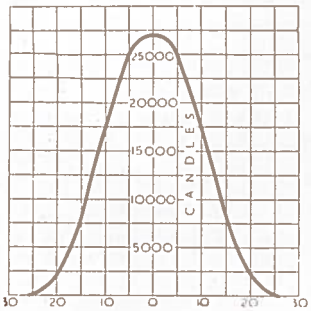
STRAND STAGE FLOODS

PATTERN 76 ACTING AREA FLOOD, 1,000 WATT
(MEDIUM ANGLE)

The Pattern 76 lantern described overleaf for narrow-angle work may alternatively be fitted with a medium-angle reflector. Using the latter, the lantern will cover a larger area of the stage when hung at the same height, and when placed between 6-foot lengths of batten (*e.g.*, for music halls) the beams from adjacent lanterns will overlap well above actor's head height.

Equally, with the medium-angle reflector, this lantern will light the confined areas normally required on the stage when hung from restricted heights, e.g., in schools, small halls, cabarets, etc.

DISTRIBUTION CURVE
1,000 WATT, CLASS B1
ROUND BULB
PROJECTOR LAMP
WITH B.288
SUNRAY REFLECTOR.
(MEDIUM ANGLE)



Angle to axis of beam in degrees.

SPECIFICATION

Exactly as given overleaf but using a medium-angle type reflector.

Lamp.—(as overleaf.)

Beam Angles.—Cut-off 50°, Beam Angle 40°.

Nett Weight.—(As overleaf.)

Dimensions.—(As overleaf.)

PRICES

B.288.—Extra medium-angle silvered glass reflectors .. .. each
B.289.—Extra medium-angle anodised aluminium reflectors .. .. ,,

Lantern and other accessories, as overleaf.

Colour Change.—Both narrow and medium-angle types can be fitted with a remotely operated colour-change mechanism. See Leaflet C.85.

NOTE.—Medium-angle and Narrow-angle reflectors can be interchanged in a few seconds and with no modifications to the lantern. IT IS IMPORTANT TO SPECIFY WHETHER NARROW OR MEDIUM ANGLE TYPES ARE REQUIRED WHEN ORDERING.

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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND, LONDON

BRANCH
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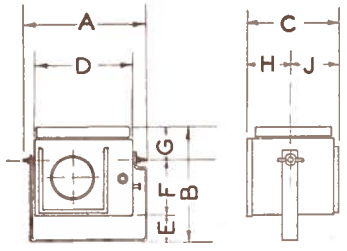
STRAND SPOTLIGHTS

PATTERN 27 FLOAT SPOTLIGHT 100 or 250 WATT

This is a small compact spotlight which may, owing to its size, be concealed in footlights, stage furniture, property fires, etc.

SPECIFICATION

The housing is constructed in sheet steel, efficiently ventilated. Access to lamp by hinged door at rear. 3-inch diameter, 6-inch focus plano-convex lens. Type 27 tray giving variation in size of spot, axial adjustment for filament. Fitted with runners to take millboard colour frame on front. Wired with 3-foot heat-resisting tails without plugs. Finish black crystalline enamel outside, matt black inside.



DIMENSIONS

		Ft.	In.
A	...		9¼
B	...		7
C	...		6½
D	...		7
E	...		1
F	...		4
G	...		2
H	...		3
J	...		3½

Lamps.—100-watt Class B.1 Round Bulb Projector with E.S. Cap, or
250-watt Class B.1 Round Bulb Projector with E.S. Cap.

Beam Angles.—Maximum 49°. Minimum 22°.

Maximum Throw.—Normally used up to 15 feet.

Weight.—Nett weight 5 lbs.

PRICE (exclusive of lamp) .. ..

C. 73.—Linen-bound millboard colour frames (4⅜ inches × 4⅜ inches)	per doz.
C. 74.—Ditto, with gelatine colours	,,
C. 97.—Ditto, with "Cinemoid" colours	,,
C.300.—Extra 3-inch diam. 6-inch focus plano-convex lenses	each
C.185.—15-amp. 3-pin moulded connectors	per pair

If required, this Spotlight can be adapted for hanging or for use with a telescopic stand.

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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

BRANCH
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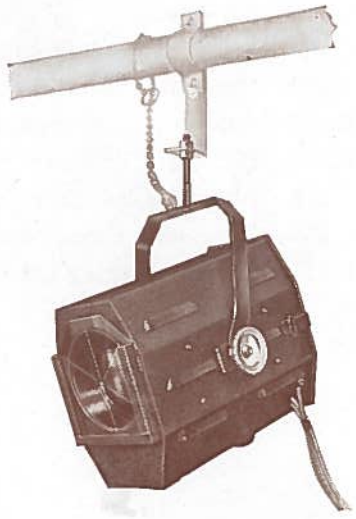
STRAND SPOTLIGHTS

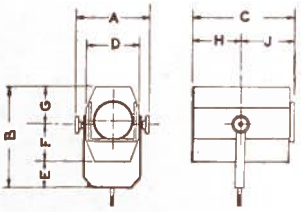
PATTERN 45 MINIATURE SPOTLIGHT 250 WATT

This is a small spotlight which, being larger than the Pattern 27, gives a more efficient light, and greater range of focussing. Suitable for small stages, exhibitions and shop windows.



SPECIFICATION

The housing is constructed in sheet steel, efficiently ventilated. Access to lamp by hinged door at rear. 4½-inch diameter 6½-inch focus plano-convex lens. Type 45 tray, giving axial adjustment for lamp, complete with spherical chromium-plated reflector. Focussing by knob under lantern. Fitted with runner to take millboard colour frame on front. The Tilting Fork has a ⅜-inch Whitworth stem (for suspension or insertion in stand) and eyelet for safety chain (not included). The lantern is locked in position by two hand wheels. Wired with 3-foot heat-resisting tails without plugs. Finish: black crystalline enamel outside, matt black inside.



DIMENSIONS

	Ft.	In.		Ft.	In.
A ...		8½	F ...		4¼
B ...	1	0	G ...		4¼
C ...		11¾	H ...		5¾
D ...		6	J ...		6
E ...		3½			

Lamps.
250-watt Class B.1 Round Bulb Projector with E.S. Cap.

Beam Angles.
Maximum 39°, minimum 11°.

Maximum Throw.
Normally used up to 25 feet.

Weight.
Nett weight 9½ lbs.

PRICE (exclusive of lamp) .. ..

C. 76.—Linen-bound millboard colour frames (5⅝-inches × 5¼-inches)	per doz.
C. 77.—Ditto, with gelatine colours	,,
C. 78.—Ditto, with "Cinemoid" colours	,,
C.301.—Extra 4½-inch diam. 6½-inch focus plano-convex lenses	each
C.233.—Extra 3½-inch spherical chromium reflectors	,,
C.185.—15-amp. 3-pin moulded connectors	per pair

(continued overleaf)

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SALES COUNTER AND GOODS ENTRANCE: 24, FLORAL STREET, W.C.2
TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

BRANCH
62, DAWSON ST.
DUBLIN
DUB. 74030

PRICES *(cont'd)*

C.113.—Flange plate stand with locking handle (height 6 inches, weight 2½ lbs.) .. .. each
C.257.—Miniature telescopic stand with cable hook and swivelling collar (min. height 3 feet 7 inches, max. height 5 feet 9 inches) .. .. ,,
C. 64.—Safety chain with snap hook .. .. ,,
C. 65.—" L " clamp for 1½-inch diam. barrel (as illustrated) .. .. ,,
C.247.—Swivel arm wall bracket (reach 10 inches) .. .. ,,
C.248.—Ditto, with swivelling extension arm (max. reach 19 inches) .. .. ,,
C.251.—Adjustable boomerang bracket for 2-inch diam. barrel (reach 10 inches) .. .. ,,
C.252.—Ditto, with extension arm (max. reach 19 inches) .. .. ,,
C.253.—Adjustable boomerang bracket for 1-inch diam. barrel (reach 10 inches) .. .. ,,
C.254.—Ditto, with extension arm (max. reach 19 inches) .. .. ,,
C.255.—Fixed boomerang bracket for 2-inch diam. barrel (reach 11 inches) .. .. .. ,,

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SALES COUNTER AND GOODS ENTRANCE: 24, FLORAL STREET, W.C.2
TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

BRANCH
62, DAWSON ST.
DUBLIN
DUB. 74030

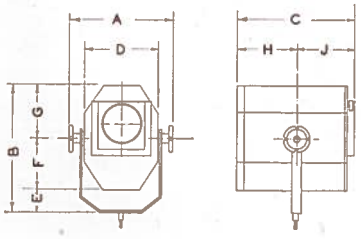
STRAND SPOTLIGHTS

PATTERN 44 BABY SPOTLIGHT 500 WATT

This Spotlight is suitable for a number of uses on the stage proper, while for small amateur stages it may be used for lighting the forestage from Front of House.

SPECIFICATION

The housing is constructed in sheet steel efficiently ventilated Access to lamp by hinged door at rear, 4½-inch diameter 6½-inch focus plano-convex lens. Type 43 tray, giving vertical and axial adjustment for lamp, complete with spherical chromium-plated reflector. Focussing by knob under lantern. Fitted with Runner, hinged flap and clip-on top, to take millboard colour frame. The Tilting Fork has a ½-inch Whitworth stem (for suspension or insertion in stand) and eyelet for safety chain (not included). The Lantern is locked in position by two hand wheels. Wired with 3-foot heat-resisting tails without plugs. Finished black crystalline enamel outside, matt black inside.



DIMENSIONS

	Ft.	In.
A		11½
B	1	2½
C	1	1
D		8
E		2½
F		5½
G		6½
H		6½
J		6½

Lamp.

500-watt Class B.1 Round Bulb Projector with G.E.S. Cap.

Beam Angles.

Maximum 39°, Minimum 12°.

Maximum Throw.

Normally used up to 35 feet.

Weight.

Nett weight 18 lbs.

PRICE (exclusive of lamp)	each
C. 80.—Linen-bound millboard colour frames (6-inches × 6-inches)	per doz.
C. 81.—Ditto, with gelatine colours	,,
C. 82.—Ditto, with " Cinemoid " colours	,,
C.301.—Extra 4½-inch diameter 6½-inch focus plano-convex lenses	each
C.232.—Extra 4-inch diameter spherical chromium reflectors	,,
C. 83.—Spotting attachment with three masks (3½ lbs.)	,,
C.185.—15-amp. 3-pin moulded connectors	per pair

(*continued overleaf*)

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PRICES *(cont'd)*

C. 64.—Safety chain with snap hook	each
C. 84.—Adjustable barrel clamp	,,
C. 65. —" L " clamp for 1½-inch barrel (as illustrated)	,,
C. 66.—Telescopic stand with cable hook and swivelling collar (min. height 4 feet 3 inches, max. height 7 feet)	,,
C.113.—Flange plate stand with locking handle (height 6 inches, weight 2½ lbs.)	,,
C.247.—Swivel arm wall bracket (reach 10 inches)	,,
C.248.—Ditto, with swivelling extension arm (max. reach 19 inches)	,,
C.251.—Adjustable boomerang bracket for 2-inch diam. barrel (reach 10 inches)	,,
C.252.—Ditto, with extension arm (max. reach 19 inches)	,,
C.253.—Adjustable boomerang bracket for 1-inch diam. barrel (reach 10 inches)	,,
C.254.—Ditto, with extension arm (max. reach 19 inches)	,,
C.255.—Fixed boomerang bracket for 2-inch diam. barrel (reach 11 inches)	,,

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BRANCH
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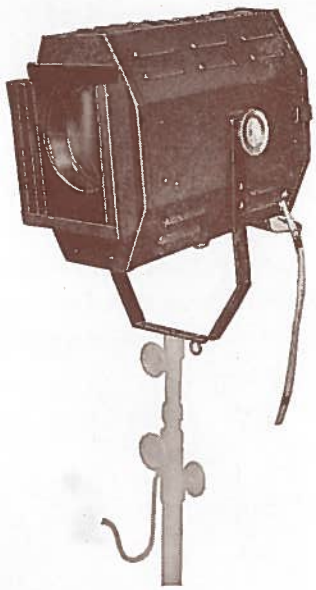
STRAND SPOTLIGHTS

PATTERN 43 STAGE SPOTLIGHT 1,000 WATT

This Spotlight is suitable for all general stage purposes, including lighting the forestage from Front of House in small theatres. Also suitable for Cabaret work, etc.



SPECIFICATION

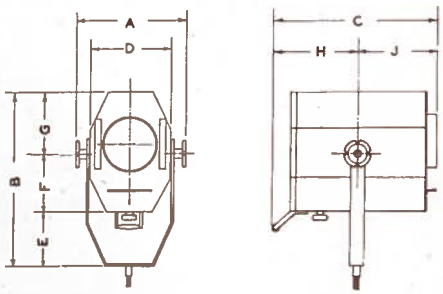
Lantern constructed in sheet steel, efficiently ventilated. Access to lamp by hinged door at rear. 6-inch diameter, 10-inch focus plano-convex lens. Type 43 tray, giving vertical and axial adjustment for lamp, complete with spherical chromium-plated reflector. Focussing by knob under lantern. Fitted with runners to take two millboard colour frames on front. The Tilting Fork has a ½-inch Whitworth Stem (for suspension or insertion in stand) and eyelet for safety chain (not included). The lantern is locked in position by two hand wheels, and a handle is provided at the rear. Wired with 3-foot heat-resisting tails without plugs. Finish : black crystalline enamel outside, matt black inside.

Lamps.—1,000-watt Class B.1 Round Bulb Projector with G.E.S. Cap, or 1,000-watt Class A.1 Tubular with G.E.S. Cap (max. permissible angle of tilt 22½°).

Beam Angles.—Maximum 42°, minimum 13°.

Maximum Throw.—Normally used up to 45 feet.

Weight.—Nett weight 25 lbs.



DIMENSIONS

		Ft.	In.			Ft.	In.
A	...	1	0½	F	...		6¾
B	...	1	8	G	...		6¾
C	...	1	5½	H	...		8¾
D	...		9	J	...		8¾
E	...		6½				

PRICE (exclusive of lamp) .. ..

C. 85.—Linen-bound millboard colour frames (10¾-inches × 7½-inches)	per doz.
C. 86.—Ditto, with gelatine colours	,,
C. 87.—Ditto, with " Cinemoid " colours	,,
C.305.—Extra 6-inch diameter 10-inch focus plano-convex lenses	each
C.231.—Extra 5-inch diameter spherical chromium reflectors	,,
C. 88.—Spotting attachment with three masks, giving four sizes of spots (weight 5½ lbs.) ..	,,
C.185.—15-amp. 3-pin moulded connectors	per pair

(continued overleaf)

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BRANCH
62, DAWSON ST.
DUBLIN
DUB. 74030

PRICES *(cont'd)*

C. 64.—Safety chain with snap hook	each
C. 65.—" L " clamp for 1½ inch diam. barrel	"
C. 84.—Adjustable barrel clamp	"
C. 66.—Telescopic stand with cable hook and swivelling collar (min. height 4 feet 3 inches, max. height 7 feet)	"
C.113.—Flange plate stand with locking wheel (height 6 inches, weight 2½ lbs.)	"
C.247.—Swivel arm wall bracket (reach 10 inches)	"
C.248.—Ditto, with swivelling extension arm (max. reach 19 inches)	"
C.251.—Adjustable boomerang bracket for 2-inch diam. barrel (reach 10 inches)	"
C.252.—Ditto, with extension arm (max. reach 19 inches)	"
C.253.—Adjustable boomerang bracket for 1-inch diam. barrel (reach 10 inches)	"
C.254.—Ditto, with extension arm (max. reach 19 inches)	"
C.255.—Fixed boomerang bracket for 2-inch diam. barrel (reach 11 inches)	"

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BRANCH
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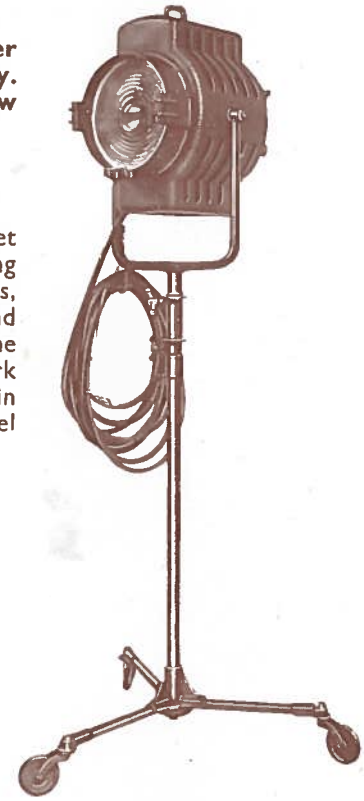
DUBLIN
DUB. 74030

STRAND SPOTLIGHTS

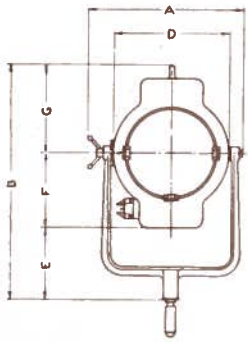
PATTERN 102 SOFT EDGE SPOTLIGHT, 1,000/2,000 WATTS

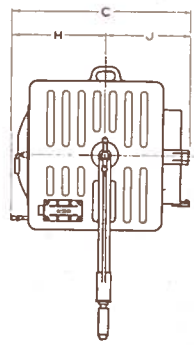
This lantern is designed for use on the stage where a spotlight of lesser wattage would not produce a soft edged beam of the required intensity. As the edges of the beam are not sharp, it is not intended for long throw work from the back of the Auditorium.

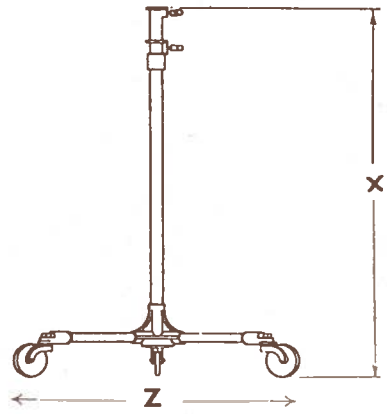


SPECIFICATION

The housing consists of a well ventilated one-piece aluminium casting with sheet steel light baffles, access to lamp being by a hinged door at rear, and focussing being by means of a worm drive from the rear. Fitted with 10-inch diameter, 8-inch focus, prismatic heat resisting lens, lamp tray with bi-post pre-set lamp holder and pre-set 7-inch diameter reflector of polished rhodium on copper. The front of the housing carries a runner to take metal colour frame. The gunmetal tilting fork has a $1\frac{1}{8}$-inch stem (for suspension or insertion in stand). The lantern is locked in position by a handle on the right hand side. Finished black crystalline enamel outside, matt black inside, with bright nickel handles.

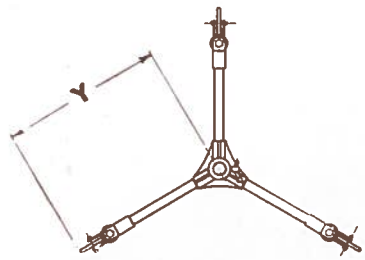






DIMENSIONS

	Ft.	In.		Ft.	In.	
A ...	1	5	G ...		10	
B ...	2	2	H ...		$10\frac{1}{2}$	
C ...	1	8	J ...		$9\frac{1}{2}$	
D ...	1	1	X ...	3	10	(Min.)
E ...		$7\frac{1}{2}$		6	7	(Max.)
F ...		$8\frac{1}{2}$	Y ...	1	8	
			Z ...	2	9	



LAMPS

1,000-watt Studio type bi-post lamp or 2,000-watt Studio type bi-post lamp.

BEAM ANGLES

Maximum 45°.
Minimum 8°.

WEIGHT

Nett weight of Lantern 42 lbs.

MAXIMUM THROW

Normally used up to 45 feet.

PRICE (exclusive of lamp) .. .. each
C. 95.—Metal colour frames ($10\frac{1}{4}$ inches × $10\frac{1}{4}$ inches) .. .. ,,
C. 96.—Cinemoid colours for above .. .. ,,
C.258.—Heavy tubular steel telescopic stand on 4-inch rubber tyred castors, with 3 removable legs. Nett weight 21 lbs. .. .. ,,
C.256.—Barrel clamp for suspension from 2-inch to $2\frac{1}{2}$-inch barrel (illustrated on Page L.31) ,,
C.307.—Extra 10-inch diameter, 8-inch focus, heat resisting prismatic condenser lens .. ,,
C.308.—Extra 7-inch rhodium plated reflectors .. .. ,,

NOTE. *Remote colour changing mechanism can be fitted to this lantern. For details see page C.85. A double-pole switch can be fitted to the side of the lantern. Price on application.*

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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

BRANCH
62, DAWSON ST.
DUBLIN
DUB. 74030

STRAND SPOTLIGHTS

PATTERN 73 MIRROR SPOTLIGHT, 1,000 WATT

This lantern employs a precision optical system which not only gives a greater control of the beam shape and spread than is obtainable from the Standard Spotlights described in the preceding pages but gives more than twice the light output (depending on beam spread) for the same wattage. The light is collected by an 8-inch dia. reflector and directed on to a gate framed by four independently adjustable shutters. The gate is hard or soft focussed by an objective lens.

Masking to pick out irregularly shaped objects, or to give a hard cut-off clear of backcloth upstage and orchestra pit downstage is easily accomplished.

The lantern is therefore particularly suitable for Front-of-House work (see also Patt. 83) but can be used anywhere on the stage.

SPECIFICATION

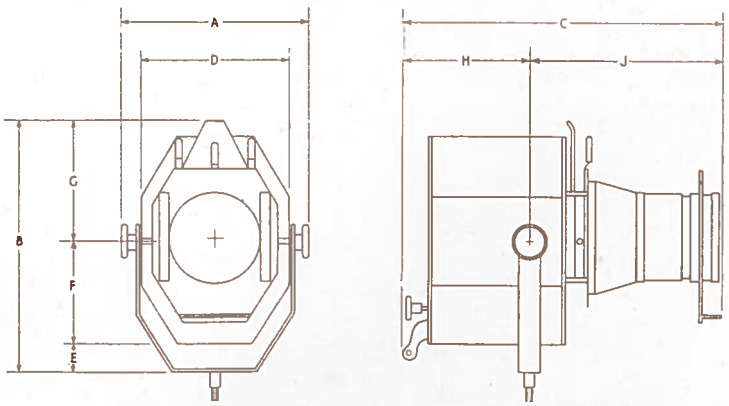
The body is constructed in sheet steel, efficiently ventilated, with a cast aluminium front and back, the latter containing an access door. The lamp tray which is worm driven by a handle at the rear is fitted with an 8-in. diameter silvered glass reflector. Complete with 6-in. diameter, 9-in. focus heat-resisting step lens, four independently operated horizontal and vertical shutters with heat insulated handles, provision for additional internal mask or Iris diaphragm if required, and fitted with a front runner to take a colour frame. The tilting fork has a $\frac{1}{2}$-in. Whitworth stem (for suspension or insertion in stand) and eyelet for a safety chain (not included). The lantern is wired with 3 ft. heat-resisting tails without plugs, and is finished black Crystalline enamel outside, matt black inside.

Lamps.—1,000-watt Class A.1 Tubular Projector type with G.E.S. cap (max. angle of tilt 22½°) or 1,000-watt Class B.1 Round Bulb Projector type with G.E.S. cap.

Beam Angles.—Maximum 19°, Minimum 3°.
Maximum Throw.—Normally used up to 60 ft.
Weight.—Nett Weight 30 lbs.

DIMENSIONS

	Ft.	Ins.
A	1	1½
B	1	8½
C	1	10 (min.)
	1	11 (max.)
D	0	10
E	0	5½
F	0	7
G	0	8
H	0	9
J	1	1 (min.)
	1	2 (max.)



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TELEPHONE: TEMPLE BAR 4444 *TELEGRAMS:* SPOTLITE, RAND LONDON

BRANCH
62, DAWSON ST.
DUBLIN
DU3, 74030

PRICE (exclusive of lamp) .. ..

C.303.—Extra 6-inch dia. 9-inch focus, heat resisting stepped lens	each
C.282.—Extra 8-inch dia. silvered glass reflector	,,
C.283.—Extra 8-inch dia. anodized aluminium reflector	,,
C.85.—Millboard colour frames ($10\frac{3}{4}$ inch × $7\frac{1}{2}$ inch)	per dozen
C.86.—Ditto with gelatine colours	,,
C.87.—Ditto with " Cinemoid " colours	,,
C.98.—Iris diaphragm	each
C.154.—Wide Angle lens unit increasing beam angle to 38°	,,
C.185.—15-amp. 3-pin moulded connectors	per pair
C.64.—Safety chain with snap hook	each
C.65.—" L " clamp for $1\frac{1}{2}$-inch dia. barrel	,,
C.84.—Adjustable barrel clamp	,,
C.66.—Telescopic stand with cable hook and swivelling collar (min. height 4 feet 3 inches, max. height 7 feet)	,,
C.113.—Flange plate stand with locking wheel (height 6 inches, weight $2\frac{1}{2}$ lbs.)	,,
C.247.—Swivel arm wall bracket (reach 10 inches)	,,
C.248.—Ditto with swivelling extension arm (max. reach 19 inches)	,,
C.251.—Adjustable boomerang bracket for 2-inch dia. barrel (reach 10 inches)	,,
C.252.—Ditto, with extension arm (max. reach 19 inches)	,,
C.255.—Fixed boomerang bracket for 2-inch dia. barrel (reach 11 inches)	,,

Note : Remotely operated colour change mechanism can be fitted to this lantern (See leaflet C.85).

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BRANCH
62, DAWSON ST.
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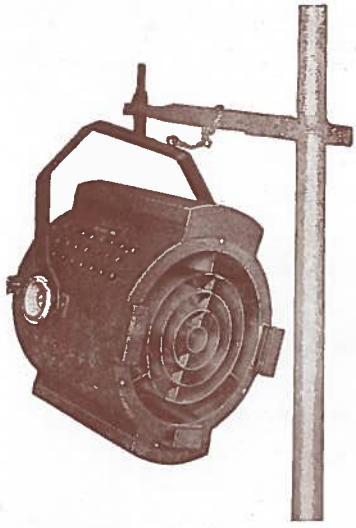
STRAND PAGEANT LANTERN

PATTERN 50A 1,000 WATTS



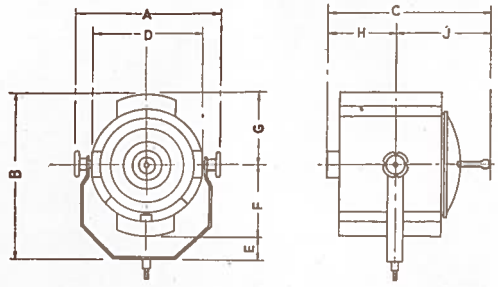
This lantern provides a very intense soft edged narrow beam of light, the size of which can be varied slightly. It is particularly suitable for simulating sunlight on the stage, and for photography and other cases where a really intense beam is required.

SPECIFICATION

The housing is constructed in sheet steel, efficiently ventilated. The rear door carrying a 10-inch diameter silvered glass parabolic reflector, gives access to the lamp tray which carries and gives axial and vertical adjustment to the lampholder. The lamp is focused by worm drive from the rear of the housing. The front is fitted with spill rings to cut off stray light, and runners to carry colour frames. The tilting fork which locks the lantern in position by two 3-inch diameter handles, terminates in a ½-inch Whitworth stem, for suspension by barrel clamp or insertion in base, stand or other support. The lantern is wired with 3-feet heat-resisting tails without plugs. Finish : black crystalline enamel outside, matt black inside.

DIMENSIONS

	Ft.	In.		Ft.	In.
A	1	3½	F		7½
B	1	6¾	G		7½
C	1	6	H		7
D	1	0	J		11
E		3¾			



Lamps.—1,000-watt Class A.1 Tubular with G.E.S. cap (maximum angle of tilt 22½°) or 1,000-watt Class B.1 Round Bulb projector with G.E.S. cap.

Beam Angles.—Maximum 17°, minimum 11°.
Maximum Throw.—Normally used up to 100 feet.
Weight.—Nett weight 22 lbs.

PRICE (exclusive of lamp)	each
C. 61.—Metal colour frames (11¾-inches × 11¾-inches)	per doz.
C. 62.—Ditto with assorted gelatine colours	,,
C. 63.—Ditto with Cinemoid colours	,,
C.280.—Extra 10-inch silvered glass reflectors	each
C.281.—Extra anodised aluminium reflectors	,,
C.185.—15 amp., 3-pin moulded connectors	per pair

(continued overleaf)

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BRANCH
62, DAWSON ST.
DUBLIN
DUB. 74030

PRICES (*continued*)

C. 64.—Safety chain for use when lantern is suspended	each
C. 65.—" L " clamp for 1½-inch barrel	,,
C. 84.—Adjustable barrel clamp for 1½-inch-2½-inch barrels	,,
C. 66.—Telescopic stand with cable hook and swivelling collar (minimum height 4 feet 3 inches, maximum height 7 feet)	,,
C.112.—Heavy cast iron bench base	,,
C.113.—Flange plate stand	,,
C.259.—Ceiling fixing saddle	,,
L. 247.—Swivel arm wall bracket (reach 10 inches)	,,
L. 248.—Ditto, with swivelling extension arm (maximum reach 19 inches)	,,
C.251.—Adjustable boomerang bracket for 2-inch diameter barrel (reach 10 inches) ..	,,
C.252.—Ditto, with extension arm (maximum reach 19 inches)..	,,
C.253.—Adjustable boomerang arm bracket for 1-inch diameter barrel (reach 10 inches) ..	,,
C.254.—Ditto, with extension arm (maximum reach 19 inches)..	,,
C.255.—Fixed boomerang bracket for 2-inch diameter barrel (reach 11 inches)	,,

NOTE : Remotely operated colour change mechanism can be fitted to this lantern. For details see page C.85.

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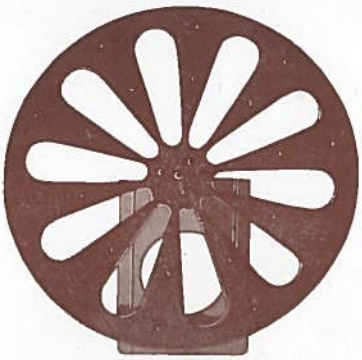
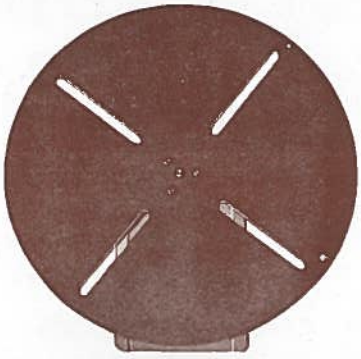
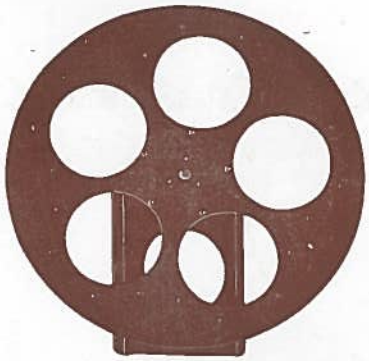
STRAND SPOTLIGHT ACCESSORIES



C.101



C.102



C.103

RAINBOW, FLICKER & COLOUR WHEELS

Constructed of sheet steel and aluminium with wired rims, pivoted on cast brass plate to fit front runners of Patterns 42, 43 & 501. Colours are replaceable by removing a few screws. Diameter, 20 in. Weight 3¼ lbs.

PRICES

C.101	No. 1.—Rainbow Wheel	each
C.102	No. 2.—Flicker Wheel	,,
C.103	No. 3.—Colour Wheel	,,

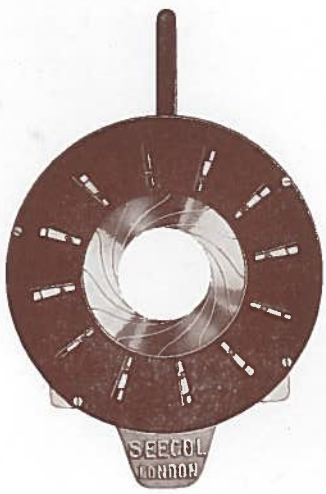
Smaller colour wheels to fit Pattern 44, prices as above.

AUTOMATIC COLOUR WHEEL

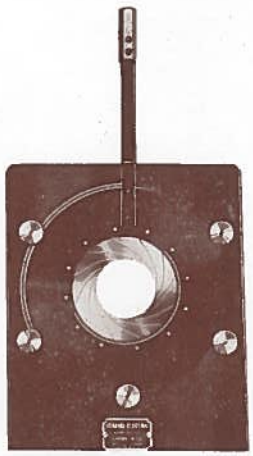
Five colours, in aluminium case 18¾ in. diameter. Clock drive, with electric battery start and stop. To fit same lanterns as standard colour wheels. Weight 8 lbs.

PRICES

C.105	Clockwork driven (exclusive of Batteries)	each
C.106	As above, but with Electric Motor drive	,,



C.104



C.98

IRIS DIAPHRAGMS

C.104. To fit Pattern 42 and 43 spotlights, consisting of aluminium cast back plate, with brass leaves closing from 5 in. diameter aperture to blackout. Weight 3 lbs.
[When used with Pattern 43, iris has the effect of dimming the beam in addition to reducing its size.]

PRICE .. .. each

C.98. To fit Pattern 73 spotlights, consisting of steel backplate with brass leaves closing from 3 in. diameter aperture. Weight 3 lbs.

PRICE .. .. each

(continued overleaf)

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STRAND SPOTLIGHT ACCESSORIES

MIRROR BALL

Complete ball with alternate blue and white mirror glass mosaic surface.

PRICES

C.107.	Diameter 12 in. Weight 9 lbs.	each
C.108.	Diameter 16 in. Weight 13 lbs.	,,

Larger sizes can be supplied. Prices on application.

C.109.	Clockwork rotator. Weight 2 lbs.	,,
C.110.	Electric motor rotators, 200/250 volts A.C. ..	,,

D.C. motors to order only.

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STRAND ARC SPOTLIGHTS

PATTERN 75 FRONT OF HOUSE SPOTTING OR EFFECTS ARC, 80 AMP.

This lantern has been designed for front of house spotting over long throws and is readily converted for projecting slides or effects. It may be used on D.C. or A.C. electric supplies.

SPECIFICATION

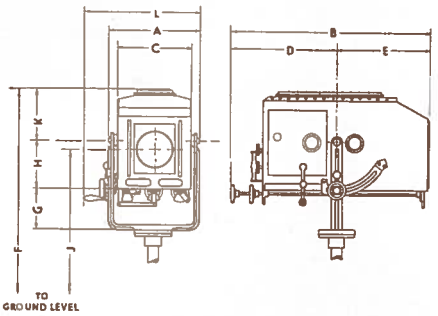
The Lamphouse is constructed of sheet steel on a cast aluminium base and back. The housing consists of an inner and outer frame, with air space between, giving efficient ventilation.
Vertical and horizontal barn door shutters and iris diaphragm are fitted, operated by handwheels at the rear. Double runners for colour frames (6 provided) and a cast front to take effects attachments are fitted. Complete with 6-inch diameter 12-inch focus plano-convex lens in removable mount, asbestos curtain at rear, tilting fork and quadrant, heavy pattern telescopic stand with ball bearing swivelling collar and cast base. Finish : crystalline black enamel outside, matt black inside, nickel-plated wheels and fittings.

ARC LAMP.—Six movement hand feed type, carrying up to 80-amps., rack and pinion focussing, with indicator scale. Connector box is fitted in lamphouse.

DIMENSIONS

	Ft.	In.			Ft.	In.	
A ...	1	7		G ...		9	
B ...	2	7½		H ...		7¼	
C ...	1	0½		J ...	4	7	(Max.)
D ...	1	4			3	9	(Min.)
E ...	1	3½		K ...		10¼	
F ...	5	6	(Max.)	L ...	1	7¾	
	4	8	(Min.)				

Nett weight of Lantern 100 lbs.
Nett weight of Stand 56 lbs.



OPERATING DATA				
	Arc Amps	Arc Volts	Carbons	Total burning time
D.C.	80	50	Pos. 22 m m cored Neg. 11 m m cored and copper plated	2 hours
A.C.	80	30	22 m m white flame	3 hours 55 mins.

For further details of carbons see page L.56.

Maximum angle of tilt below horizontal 35°.
Maximum throw normally used, up to 150 feet.

Suitable Resistances, see pages D.41 *et seq.*
Optical Effect Accessories, see pages F.21 *et seq.*

PRICE (complete with stand) .. ..

D.125.—Extra Metal colour frames .. .. each
D.122.—Assorted gelatine mediums, cut to size .. .. per doz.
D.123.—Assorted " Cinemoid " colours, cut to size .. .. ,,
D.126.—Colour wheel with gelatine mediums .. .. each
D.127.—Rainbow wheel with gelatine mediums .. .. ,,
D.128.—Flicker wheel .. .. ,,
D.124.—Effect attachment with 6-inch lens .. .. ,,
D.132.—Slide attachment to fit Effect attachment, with adjustable carrier for 3¼-inch square slides and lens draw tubes (for which see page F.21) .. .. ,,

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STRAND "SUNSPOT" MIRROR ARC LANTERN

PATTERN 501

This Spotlight is designed primarily for use on A.C. in conjunction with a special Inductor Unit, by means of which the efficiency of the Lantern is considerably increased beyond that of an ordinary D.C. Arc lamp. Consequently, although in the past A.C. arcs have been inefficient, the new Lantern, whilst consuming less than 20-amps. A.C. from the supply mains, will produce as much light as an ordinary D.C. arc using over 90-amps. Ease of control has, however, been maintained.

The Sunspot can be readily adapted for use on D.C., in which case current must be supplied from the mains through suitable resistances. Owing to the improved optical system, this lantern, when running at 55-amps. D.C., will give as much light as an ordinary 90-amp. D.C. arc.

The various handles, levers, etc., are grouped wherever possible, in order to render control of the Lantern both convenient and rapid.

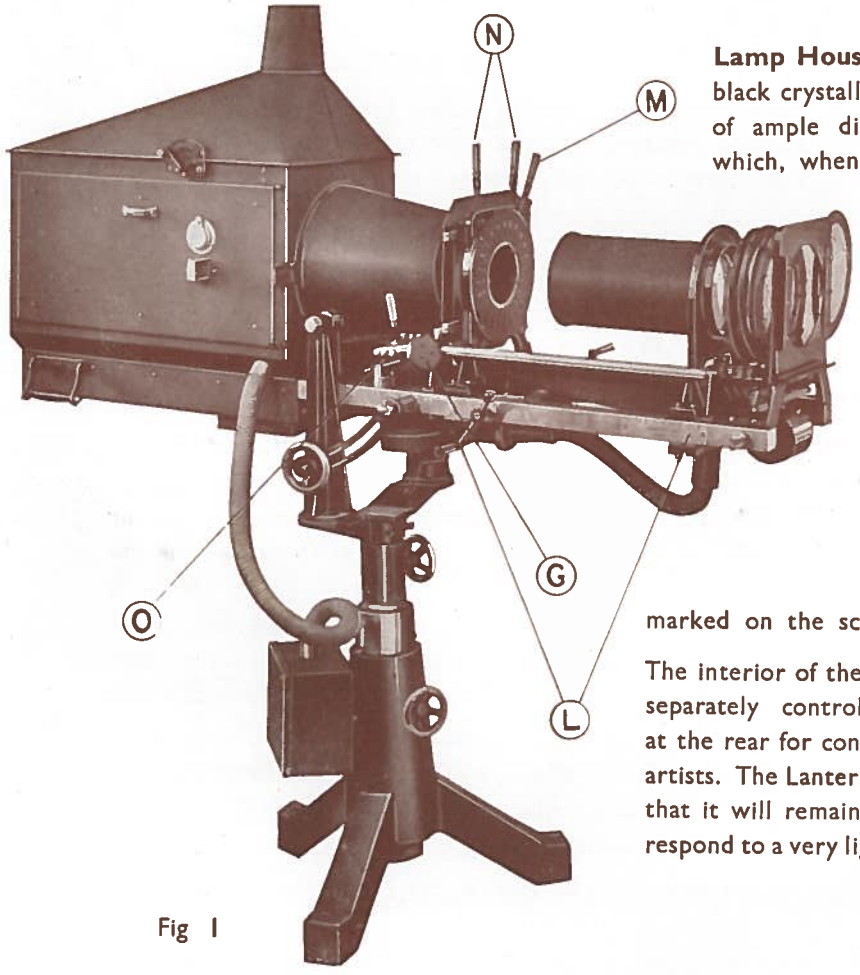

Fig 1

SPECIFICATION

Lamp House.—Constructed in sheet metal, finished black crystalline outside and dull black inside. Doors of ample dimensions are provided on each side, which, when open, drop completely clear, allowing free access to all parts of the Arc mechanism.

Spy holes, with coloured glasses, are provided on each door, a suitable quadrant plate and lever being fitted on the upper part of the Housing operating the Douser. An "Imager" screen is fitted in a suitable position on the Housing to receive the Arc Image. This is projected by means of a lens and reflector mounted on the door, suitably spaced lines being marked on the screen to indicate the correct arc gap.

The interior of the Housing is illuminated by a small lamp, separately controlled. A suitable handle is provided at the rear for controlling the Lantern when "following" artists. The Lantern is so counter-balanced in the Trunnion, that it will remain at any angle in which placed, and will respond to a very light touch in horizontal or vertical planes.

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SPECIFICATION *(continued)*

Pedestal Stand.—This comprises a heavy casting with tripod legs, the centre column being telescopic. Height adjustment is provided by a series of holes in the centre column, locking being possible by means of a handwheel clamping screw. The Trunnion Fork also consists of heavy castings, with large diameter spigot revolving in the top portion of the centre column, locking in this case also being by means of clamping screw and hand wheel.

Sufficient clearance is provided between lamp housing and Trunnion to give a maximum downward tilt of 35° from the horizontal, the required angle being maintained by quadrant and clamping hand wheel. A box is mounted in a suitable position on the base of the pedestal, containing terminals for the Arc and subsidiary terminals for the blower and pilot lamp.

Iris Diaphragm and Barn Door Shutter.—The Diaphragm is of the 24-leaf type, giving a good circle reasonably free from "flats" in all positions. The Barn Door shutters are of the normal horizontal and vertical type, the lever controls for these and the Iris being placed close together for ease of operation.

Lens Focussing.—This is rack and pinion actuated, the drive being by ball crank handles fitted on both sides of the Lantern, allowing rapid adjustment between the extreme "flood" and "spot" positions.

Colour Media.—A magazine of five colour medium frames is mounted at the front end of the Lantern, being directly controlled by means of lever handles, these being fitted close to the Iris and Barn Door Shutters, and at the right or left of the Lantern as desired. The colour frames not in use are situated on the side of the Lantern remote from the operator. Colour runners are also provided at the front of the lantern for additional colour frames ($10\frac{3}{4}$ inches x $7\frac{1}{2}$ inches) if required.

Heat absorbing heat resisting glass.—This is fitted to the lamphouse to protect the shutters and colours from excessive heat in place of the old arrangement of an electrically operated blower.

Arc Movement.—Constructed to carry 100-amps., the carbons being mounted horizontally. The rear carbon is carried in interchangeable collets of suitable size for A.C. or D.C. Carbons as required, adequate contact being provided for by screwed and knurled sleeves. The front carbon is held in position by a screwed clamp.

Simultaneous drive to both carbon heads along the horizontal Centre Line of the lamp, is by means of worm shafts, it being possible to disengage the drive nuts (**P**. Fig. 2) to both front and rear carbon heads, thus facilitating rapid replacement of carbons.

A clutch device is fitted to enable either carbon to be moved independently. The rear carbon head is provided with vertical and horizontal adjustment, the mirror having axial adjustment in the vertical and horizontal planes. The latter can also be traversed horizontally for focussing purposes.

By means of a "Positioner" the arc gap can be set at the correct focal distance from the mirror before "striking."

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THE CONTROLS

All controls are grouped at the back of the lamphouse, with the exception of the carbon feed, which is duplicated at the front and can be fitted at the Right or Left hand side as required. The various controls are as follows :—

(A) Carbon Feed (Fig. 3).—This consists of double knurled fibre hand wheels, frictionally coupled by spring pressure so that when operated, both carbon heads are fed together. By rotating the front and holding the rear hand wheel, the front carbon head can be moved independently, likewise by rotating the rear and holding the front hand wheel the back carbon head can be moved independently.

B. and C. Rear Carbon Adjustments (Fig. 3).—B. This comprises a rack and pinion motion, operated by knurled fibre hand wheel, and permits raising and lowering of the rear carbon.

C. Operation is also by rack and pinion and provides for adjustment of the rear carbon from Left to Right.

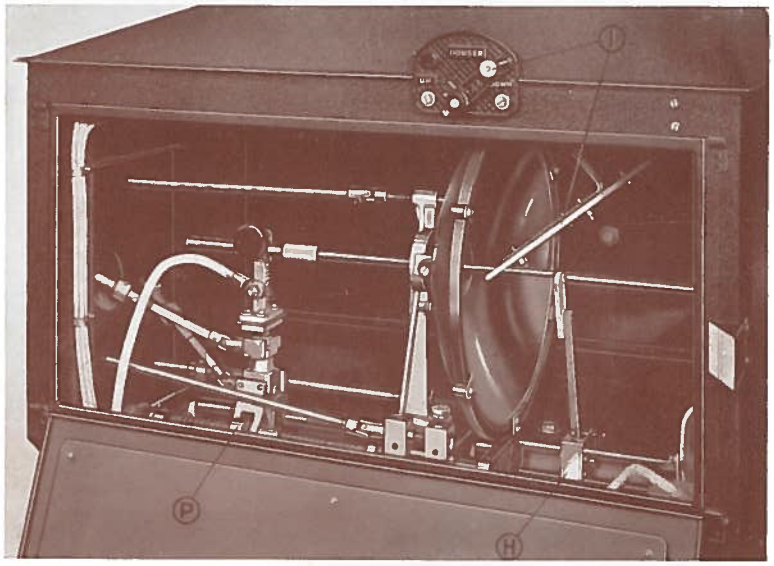

Fig. 2

D. and E. Mirror Adjustment (Fig. 3).—D. Horizontal axial motion is transmitted by means of hand wheel operated screwed shaft.

E. This control provides vertical axial motion in a similar manner to that described for D.

F. Mirror Focussing (Fig. 3).—A Ball Crank Handle, operating a screwed shaft traverses the complete mirror assembly along the horizontal centre line of the lantern.

G. Duplicate Carbon Feed (Fig. 1).—This consists of knurled hand wheel, operating an extended shaft at the front of the lamphouse and can be fitted at the right or left hand side of the lantern as required.

H. Carbon Positioner (Fig. 2).—Comprises moveable arm, with heat resisting insulated end, location of the "in" and "out" positions being by means of spring loaded plunger.

I. Douser (Fig. 2).—This comprises a heat resisting shield, operated by lever having spring loaded locating device which secures same in the "Up" or "Down" positions.

J. Blower Control (Fig. 3).—Consisting of 5-amp. tumbler switch.

K. Inspection Lamp Control (Fig. 3).—Consisting of 5-amp. tumbler switch.

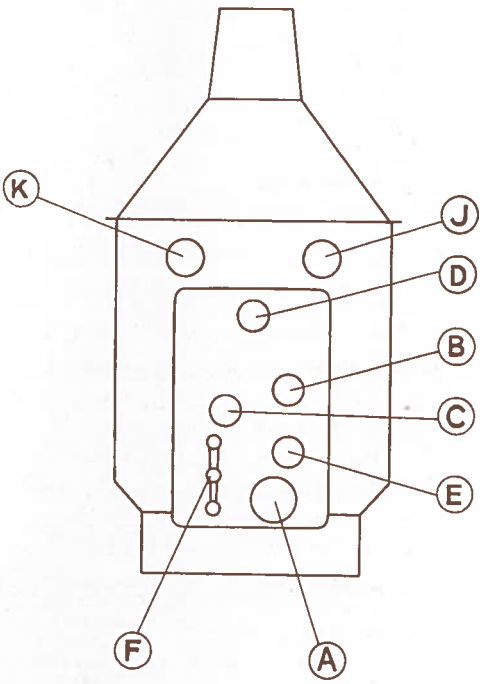

Fig. 3

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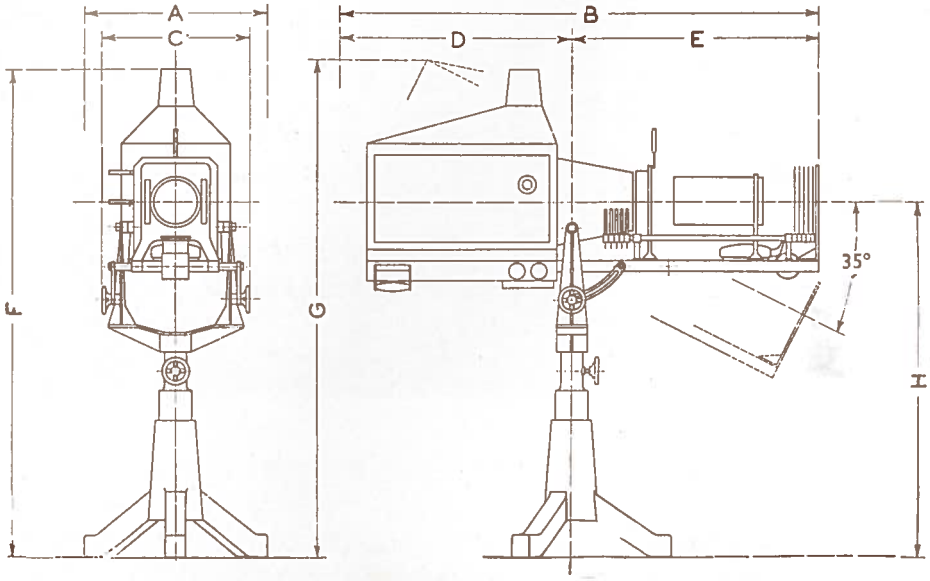
L. Lens Focussing (Fig. 1).—Ball Crank Handles are provided on each side of the lantern operating rack and pinion motions, these providing rapid movement of the complete lens assembly between the extreme "flood" and "spot" positions, intermediate positions being indicated by a graduated scale.

M. Iris Diaphragms (Fig. 1).—A lever is provided to operate from the smallest spot to full aperture.

N. Barn Door Shutters (Fig. 1).—Two levers are fitted in close proximity to the Iris Diaphragm control, one operating vertical and the other horizontal shutters, it being possible to effect a complete "black-out."

O. Colour Media Control (Fig. 1).—This consists of a group of five levers which can be fitted at the right or left of the lantern and operate the colour frames through telescopic tubes.

NOTE.—*It will be understood that all reference to "Right" or "Left" hand is taken with the operator standing at the rear of the lantern, facing the direction of projection.*



DIMENSIONS

A.—2-feet 0¾-inch.
B.—5-feet 7-inches.
C.—1-foot 8-inches.
D.—2-feet 9-inches.
E.—2-feet 10-inches.
F.—Maximum height when in horizontal position, 6-feet 3-inches.
5-feet 4½-inches minimum when horizontal.
G.—Maximum height when tilted, 6-feet 6-inches.
H.—Maximum height of beam centre when horizontal, 4-feet 9-inches.
Minimum height of beam centre when horizontal, 3-feet 10-inches.

WEIGHT

Lantern only, 1 cwt. 2 qrs. 23 lbs.; Stand and trunnion, 1 cwt. 13 lbs.

PRICES

Pattern 501 Sunspot Arc and Stand	each
D. 85.—Linen bound millboard colour frames (10¾-inches x 7½-inches)	per doz.
D. 87.—Ditto, with "Cinemoid" colours	,,
D.293.—Extra 12-inch diameter glass mirrors	each
D.294.—Extra 6-inch diameter, 16-inch focus, heat-resisting plano-convex lenses	,,

Resistances and Inductors

See pages D.41 and D.51.

For further carbon details see page L.56.

Supply	Max. Arc Amps.	Arc Volts	Carbon Size and Type	Burning rate per Hour	Total burning time
A.C.	100	26	9 m/m × 12-in. long Copper Coated	4.5 inches	1¾-2 hours
D.C.	60	33	Positive, 10 m/m × 12-in. Long Negative, 7 m/m × 12-in. Long Copper Coated	3.5 inches 3.4 inches	2½-2¾ hours 2½-2¾ hours

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STRAND ARC CONTROLS

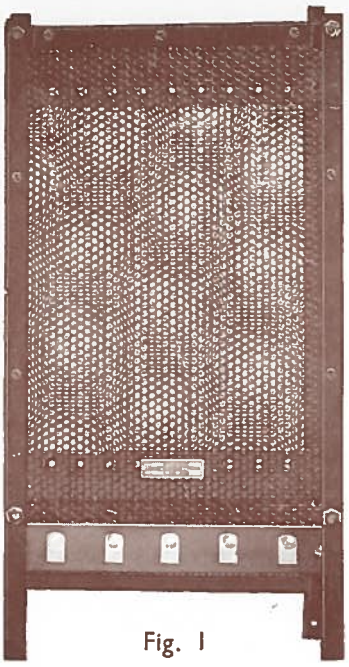

Fig. 1

Fig. 2

In order to maintain a steady arc on Direct Current, a resistance (the value of which is dependent upon the supply voltage, and the arc voltage and current) is normally connected in series with the arc. (The supply voltage should be at least 50 volts higher than the arc voltage.) When using Alternating Current an inductor is to be preferred in view of the economies made in running costs and the reduction in noise normally associated with an A.C. arc.

(1) RESISTANCES

In theatres, a resistance may be installed in any convenient place in the circuit approved by the licensing authority. It is not generally permissible to install resistances, whose total dissipation of electrical energy (see note overleaf at foot) exceeds 2 kilowatts, in the projection room of a cinema or of a theatre equipped for cinema projection. To comply with this regulation, it is usually necessary to install the arc resistances outside the projection room.

There are several ways of doing this. A series resistance may be used with the switch spindle extended to work through a wall. The resistance is then fixed in a room adjacent to the projection room. A better method is to use a parallel type resistance (Fig. 1), with step switches mounted on a control panel in the projection room, adjacent to the projector or arc lantern (Fig. 2). The switches are either heater (tumbler) switches for steps up to 15 amps., heater (rotary) switches for steps up to 30 amps., or knife switches for larger steps than 30 amps. Another method is to use parallel type resistances with contactors for step selection. This method is recommended when the resistances are situated some distances from the arc, since only two wires capable of carrying the full load are run to the arc, and smaller wires only need be run to the control switches (operating the contactors), which can be grouped on a very small panel mounted on or near the projector lamphouse.

The current taken by the arc will depend upon the type of lantern, the length of throw, and the purpose for which it is being used. Having decided upon the type of lantern and the maximum current to be taken by the arc, suitable carbons and their recommended working voltage can be determined.

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STRAND ARC CONTROLS

A parallel type resistance is generally recommended. The series type is in any case unsuitable for arcs taking more than 40 amps.

A series type resistance has its steps connected in series with each other. The current is increased by reducing the number of sections connected in series.

A parallel type resistance has its steps connected in parallel with each other. The current is increased by increasing the number of sections connected in parallel.

Both types of resistance are connected in series with the arc.

It is desirable to fit a voltmeter to indicate arc voltage, since the satisfactory burning of the carbons is very dependent upon this.

When ordering, the following information should be given :—

(*a*) The supply voltage.
(*b*) The arc voltage.
(*c*) The type of resistance (whether series or parallel type).
(*d*) The number and size of the steps (in amps.) required to increase or decrease the current in the arc.
(*e*) The type of controls required for step selection (e.g. switches, contactors).
(*f*) The position of the resistance in relation to its controls.
(*g*) Whether a voltmeter, ammeter or both are required.

NOTE.

The electrical energy dissipated is calculated as follows :—
Supply (or generator) voltage less arc voltage = voltage drop.

$$\text{Resistance required (in ohms)} = \frac{\text{voltage drop}}{\text{arc current (in amperes)}}$$

Electrical energy dissipated in the resistance (in watts) =
current (in amperes) squared X resistance (in ohms).

Example.—For a 30-amp. 50-volt arc operating on a 110-volt supply :

Supply voltage (110) less arc voltage (50) = 60 volts drop.

$$\text{Resistance required} = \frac{\text{voltage drop}}{\text{arc amps.}} = \frac{60}{30} = 2 \text{ ohms.}$$

Energy dissipated = current squared (30 x 30) X resistance (2) = 1,800 watts.

PRICES and SPECIFICATIONS of RESISTANCES and CONTROL PANELS will be sent on receipt of detailed requirements.

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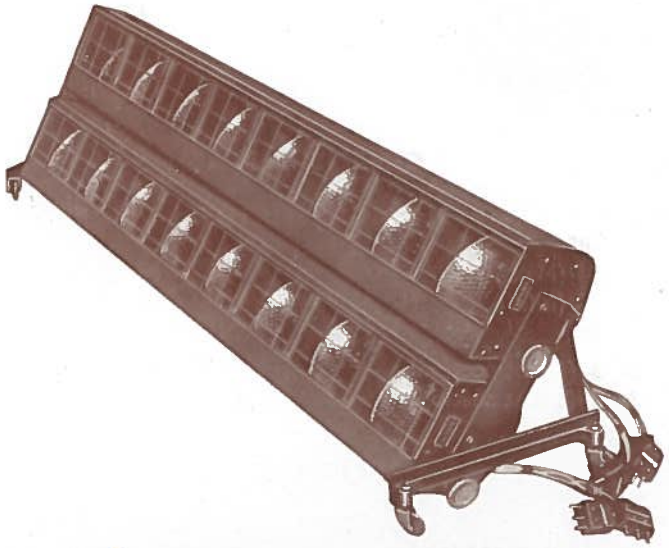
STRAND CYCLORAMA LIGHTING

CYCLORAMA GROUNDROWS—SINGLE OR DOUBLE ROW PATTERN "S" FOR 60, 100 OR 150 WATT LAMPS



These groundrows are designed for illumination of cycloramas or backcloths, from below, as an auxiliary effect to the top lighting. They have compartments spaced at 9-inch centres, and give more light from fewer lamps than the old 6-inch centre types which they supersede. The "Sunray" silvered glass reflectors give wide angle beams free from hot spots, and light well up the cyclorama or backcloth, even when placed as close as 3 feet. They are made in single and double row types, the latter being used when it is necessary to double the number of compartments allocated to blue, e.g. for large cycloramas.

SPECIFICATION

Housing is constructed in 20-gauge sheet steel, efficiently ventilated, with pressed steel compartment divisions welded in place at 9-inch centres, and the whole is finished in black crystalline outside and matt black inside. Each compartment is fitted with a metal frame with guard wires to take the colour medium and a type A.235 "Sunray" glass reflector mounted in a spring-steel spider and Edison Screw lampholder. Groundrow is manufactured in 3-foot and 6-foot lengths.

Mounting.—Substantial steel brackets are fitted at the ends of each length, giving variable tilt. Sections in the double row type may be tilted individually. Locking handwheels are fitted at each end. Swivel castors (as illustrated) are supplied as an extra on the single row type. They are supplied as a standard part of the double row type. Connectors are not included.

Wiring, which is housed in a sheet-metal trough with removable lid, is carried out in fireproof cable for colours and circuits to suit requirements.

(continued overleaf)

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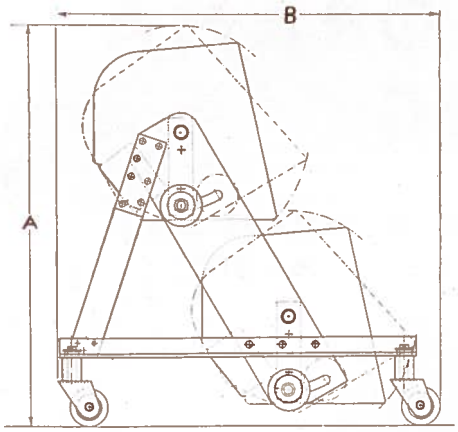

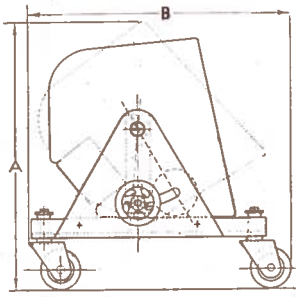

DIMENSIONS

Double row type

	Ft.	Ins.
A	1	$8\frac{1}{2}$ (Max.)
	1	$7\frac{1}{2}$ (Min.)
B	1	8
Overall length	6	3 (6-feet section)
,, ,, ...	3	3 (3-feet section)

Single row type

	Ft.	Ins.
A	1	$1\frac{3}{4}$ (Max.)
	1	$0\frac{3}{4}$ (Min.)
B	1	$1\frac{1}{2}$
Overall length	6	3 (6-feet section)
,, ,, ...	3	3 (3-feet section)

WEIGHTS

Double row type

Per 6-feet length .. 4 qrs. 16 lbs. (approx.)
,, 3-feet length .. 2 qrs. 14 lbs. (approx.)

Single row type

Per 6-feet length .. 2 qrs. 8 lbs. (approx.)
,, 3-feet length .. 1 qr. 12 lbs. (approx.)

Lamps.— 60-watt General Service type with E.S. Cap or
100-watt ,, ,, ,, ,, ,, ,, or
150-watt Theatre Batten ,, ,, ,, ,,

N.B. Lamps should be clear NOT pearl.

PRICES

Double row type *(including castors)*		**Single row type** *(excluding castors)*	
6-feet lengths	each	6-feet lengths	each
3-feet lengths	,,	3-feet lengths	,,

Extra for mounting single row type on 2-inch rubber tyred castors (i.e. per set of 4), per length (6-feet or 3-feet) .. .. ,,

NOTE. *The usual length of groundrow is 6 ft. 3 ft. lengths are normally only required to make up a total length or when short radius of curvature over part of a cyclorama precludes the use of 6 ft. lengths throughout.*

A.185—3-pin 15 amp. moulded slip connectors	per pair
A.235—Extra wide-angle glass reflectors	each
A.270—Wide-angle anodised aluminium reflectors	,,
A.240—Extra metal colour frames (8-inch × $9\frac{1}{4}$-inch)	,,
A.241—Gelatine, any colour, except frost (8-inch × $9\frac{1}{4}$-inch)	per doz.
A.242—Gelatine frost (8-inch × $9\frac{1}{4}$-inch)	,,
A.243—" Cinemoid " in any colour or frost (8-inch × $9\frac{1}{4}$-inch)	,,

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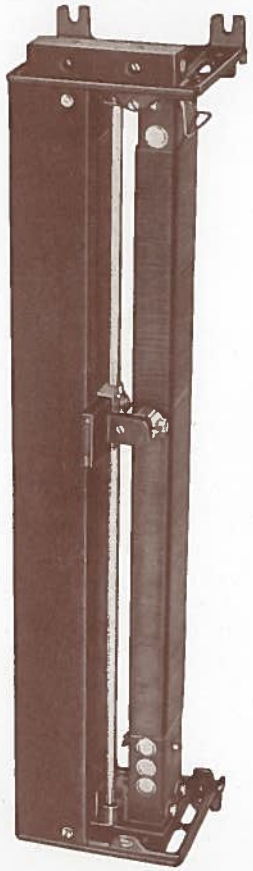
STRAND DIMMERS



Slider Dimmer with one guard plate removed to show internal detail.

SLIDER TYPE

General Construction.—Resistance elements are fitted between cast end-plates and enclosed with substantial sheet metal louvered guards, so arranged that they form a narrow slot through which the operating knob projects. Terminals are fitted at one end and slotted lugs are provided for fixing.

Resistance Elements.—These consist of best quality slate formers with carefully graduated windings of nickel copper alloy wire. Brass studs of ample size are provided for " full on " and " off " positions.

Great care is taken in calculating windings to ensure that an even and progressive variation in light is achieved throughout the whole of the brush travel.

Brushgear.—A pair of self-lubricating copper graphitic brushes are fitted as standard, these being carried in an aluminium die cast carriage with a moulded bakelite operating knob, the whole sliding on a substantial brass rod.

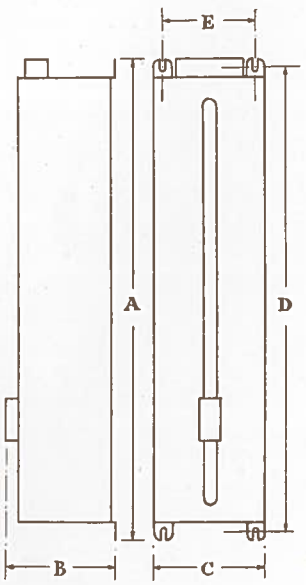
The use of copper graphitic brushes and the design of brush carriage ensure a smooth, effortless movement over the whole travel.

Terminals.—A terminal block consisting of an ebonite former with brass inserts is fitted to end plate.

Off Position.—A quick break switch is fitted at " Dim " end of travel to switch off the dimmer. This is operated by a flicker fitted to the brush carriage and is so arranged that it is impossible to break circuit accidentally.

Finish.—End plates are stove enamelled glossy black, and guards are finished black crystalline.

Lamp Watts	Pattern No.	Overall Dimensions inches			Fixing Centres inches		Weight lbs.	Prices
		A	B	C	D	E		
60, 100, 150, 200	S.S.12	14⅛	4	4¾	13½	3¾	7	
250, 300, 350, 400, 450, 500	S.S.15	17⅛	4	4¾	16½	3¾	8	
550, 600, 650, 700 ...	S.S.18	20⅛	4	4¾	19½	3¾	9	
750, 800, 900	L.S.15	17¼	4⅞	5⅛	16¾	4	13	
950, 1,000, 1,050	L.S.18	20¼	4⅞	5⅛	19¾	4	14	
1,100, 1,200, 1,300, 1,400, 1,500	L.S.21	23¼	4⅞	5⅛	22¾	4	15	
1,600, 1,700, 1,800 ...	2 L.S.15	16⅞	5	10½	16⅛	9¾	26	
1,900, 2,000, 2,100 ...	2 L.S.18	19⅞	5	10½	19⅛	9¾	28	
2,200, 2,400, 2,600, 2,800, 3,000	2 L.S.21	22⅞	5	10½	22⅛	9¾	30	



Note (1) *Both Pattern No. and* ***lamp wattage must be stated*** *when ordering.*

(2) *If specially ordered, slider dimmers can be constructed to handle loads plus or minus one third of their rating, e.g., a 1,500 watt ± 1/3 rated dimmer will satisfactorily handle loads between 1,000 watts and 2,000 watts. Prices On Application.*

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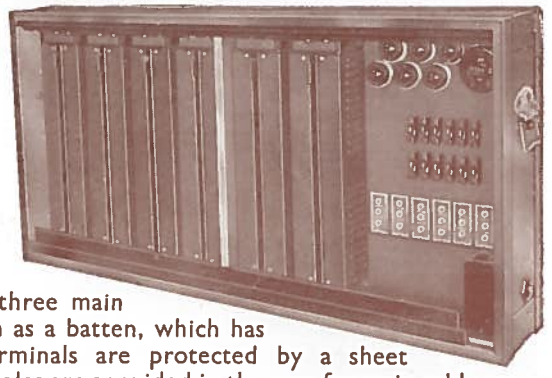
STRAND PORTABLE SWITCHBOARDS

NON-INTERLOCKING SLIDER DIMMER TYPE (6-WAY)

SPECIFICATION



Case.—Constructed in sheet aluminium, with flat iron corner runners to prevent damage by rough usage under touring conditions. Aluminium covers fitted front and back. The former, which serves as a protection for the dimmers in transit, is easily removable. A chest type of handle is fitted at each end for general handling.

Panel.—This is of bakelite or similar material and is mounted with six double-pole fuses, six tumbler switches, a double-pole master switch, six 15-amp. 3-pin sockets, three main terminals and an extra earth terminal for equipment, such as a batten, which has a single earth wire for a multiplicity of circuits. The terminals are protected by a sheet aluminium cover with a sprung hinged lid. 2-inch bushed holes are provided in the case for main cable entry.

Dimmers—Aluminium runners are provided for mounting the dimmers. The runners are fitted with hank bushes and screws spaced to take six slider type dimmers of any specified loading between 300 and 1,000 watts. For detailed Dimmer specification, see page H.11

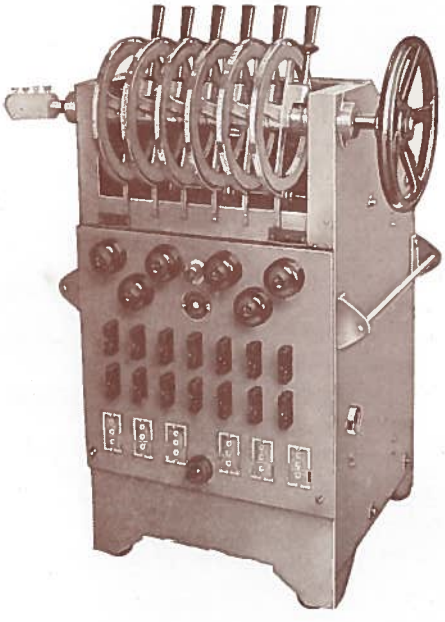
Dimensions.—Height: 2 ft. Width: 4 ft. 1 in. Depth: 8 ins. **Weight:** 1½ cwts., (approx.)

PRICE .. .. each

INTERLOCKING SLIDER DIMMER TYPE (6-WAY)

SPECIFICATION

Case.—Constructed entirely in sheet steel of suitable gauge, to withstand rough usage under touring conditions without excessive weight.



The entire unit is mounted on rubber-tyred castors protected from damage by metal guards, lifting bars being fitted at each end to facilitate general handling. Hinged and louvred inspection doors are provided at the top and back of the case to allow access to the interior and ventilation to the dimmers, these doors being secured by wing screws.

2-inch brass bushes are fitted at each end of the case for entry of incoming cables, suitable brackets carrying earth terminals of the "tommy-bar" type being fitted adjacent to the bushes.

Panel.—This is of bakelite or similar material, each dimmer way being provided with a 10-amp. tumbler switch, double-pole locking type fuses and suitable socket to accommodate a 15-amp. 3-pin connector plug. A lampholder is mounted at the top to take a suitable lamp for illumination.

The panel is hinged at the top to permit access to wiring, tracker wires, dimmers, etc.

Main terminals are of the pillar type with "tommy-bar" cable clamping screws, these being duplicated to permit the bus-bars being fed from either end, and also to allow easy connection to an adjacent board.

The terminals are suitably placed to avoid short or awkward bends in the incoming cable.

(continued overleaf see also notes at foot thereof)

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Dimmers.—These are of the sliding brush type of standard construction, with the exception that a special block is fitted on the brush carriage to which the tracker wire is secured. As the board is otherwise totally enclosed, the dimmers are not provided with covers, the end plates being fabricated in sheet steel as an added precaution against breakage. In other respects the specification on page H.11 applies, each dimmer having a specified loading between 300 and 1,000 watts.

Operation.—A shaft supported in ball bearings, runs the entire width of the case. " V " grooved pulleys are carried on the shaft to which the tracker wires are secured, the drive to the dimmers being conveyed over suitable guide pulleys.

Handles with extended spindles are screwed into the driving wheels for operating the dimmers individually. Master control is obtained by screwing the handles down on to the shaft and operating a large diameter hand-wheel located at one end of the shaft.

Graduated scales surrounding the driving wheels indicate the dimmer position.

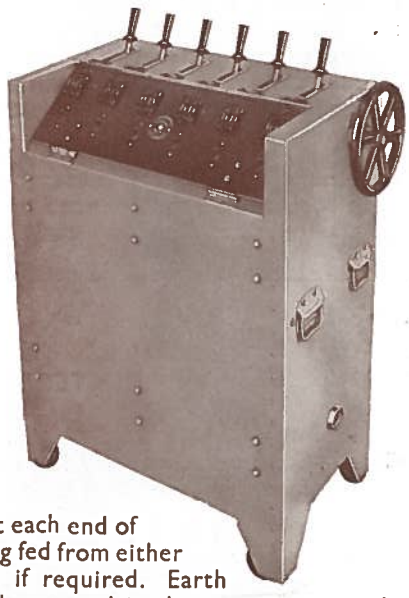
Suitable couplings are provided on the shaft at the end opposite to the master handwheel, to permit mechanical attachment to an adjacent board if required.

Dimensions.—Height: 3 ft. 10 ins. Width: 2 ft. 9 ins. Depth: 2 ft. 1 in. **Weight:** 2 cwts., (approx.)

PRICE .. .. each

INTERLOCKING "SUNSET" DIMMER BOARD (6-WAY)

SPECIFICATION



Case.—Constructed entirely in sheet steel, ensuring adequate strength without excessive weight, two " chest " type handles being provided on each side for general handling.

A large louvred inspection door is fitted at the back of the board to provide access and ventilation to the dimmers, the door being secured by lever handles. Arranged in line below the door are suitable sockets to accommodate 15-amp., 3-pin, connector plugs, the whole unit being mounted on 4-inch diameter rubber-tyred castors protected by steel guards.

Panel.—This is of bakelite or similar material, mounted with double-pole fuses and back of board switches, the " dollies " or knobs only projecting. Raised shoulders are formed in the case at each end of the panel to protect fuses and switch dollies from accidental damage. The panel is hinged at the top to facilitate inspection of the wiring at the back of the panel and to permit additional access to the dimmers, the panel being secured at bottom by wing screws.

Terminals and Incoming Cables.—2-inch brass bushes are provided at each end of the board to accommodate incoming cables, thus permitting bus-bars being fed from either end, and also electrical connection being made to an adjacent board if required. Earth terminals are provided, carried on brackets riveted direct to the metal case, and in close proximity to the entry bushes. Both Main and Earth terminals are of generous dimensions, having " tommy-bar " clamping screws and being suitably positioned to avoid as far as possible the incoming cables making sharp bends.

Dimmers—Maximum Load—4 kw. at 240 v.—These are of our standard " Sunset " pattern, the windings being carried on " Sindanyo " formers connected to suitable contact studs. By the provision of an adequate number of these studs, a staggered arrangement of same and careful calculation of the resistance windings, finely graduated dimming is assured.

Operation.—A 1-inch diameter shaft carried in ball bearings, is mounted within the case, immediately above the dimmers. Suitable crank castings are mounted on this shaft, one arm of the crank being connected by a flat steel link to the dimmer brush arm, the other side of the crank being provided with a threaded boss which accommodates the stem of the dimmer operating handle.

These handles pass through slots in the top of the case, and immediately in front of the panel a graduated scale is fitted at the side of the slot for indicating the degree of dim.

By unscrewing the dimmer handles a quarter turn they are released from the shaft and the dimmers operate individually. When the handles are screwed down the dimmers are locked to the shaft and can be operated collectively by means of a large diameter handwheel at one end of the shaft. A sleeve coupling is fitted at the opposite end for the mechanical attachment of an adjacent board if required.

Dimensions.—Height: 3 ft. 10 ins. Width: 3 ft. Depth: 1 ft. 10 ins **Weight:** 2½ cwts., (approx.)

PRICE .. .. each

NOTE (1) *Electric Supply details should be stated, together with the dimmer loadings required (within the limits given in the specifications above) at the time of ordering.*

NOTE (2) *Portable switchboards are normally only constructed for 6 dimmer-ways. Larger or smaller sizes can be supplied to order but in the interests of portability, full use should be made of the sleeve couplings provided for ganging up the interlocking types.*

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STRAND CONTROL

GENERAL SPECIFICATION OF STAGE SWITCHBOARDS

Panels.—Ebony Grade Sindanyo or similar material.

Fuses.—Porcelain Home Office or locking pattern. On D.C. boards, double-pole fuses are fitted but on A.C. Boards, single-pole with neutral links at the back of the Board are used.

Circuit Switches.—Either 15-amp. Back of Board knife pattern or 15-amp. Tumbler one-way or two-way-and-off pattern, as required, with bakelite covers.

Master Switches.—Back of Board knife pattern, single-, double- or triple-pole according to electric supply. Where contactors are used, 15-amp. one-way or two-way-and-off tumbler switches are used.

Labels.—All switches are clearly labelled to denote the circuits they control. All dimmer handles are labelled to denote both the circuit and wattage thereof. Where fuses or neutral links are mounted on the rear of switchboards they are also fully labelled.
All labels are suitably coloured.

Dimmer Operating Handles.—On the simpler Switchboards the screw down bracket type is used, but on more elaborate boards, the self release pattern is fitted. The advantage of the latter is that the handle automatically releases itself from the shaft at the top or bottom of travel but relocks itself when the direction of rotation of the shaft is reversed.

Dimmer Shafts.—On large switchboards these are carried on self-aligning ball bearings, but on smaller boards ordinary cast iron bearings are fitted. Operation of shafts is effected either by capstan wheel or worm drive (as required). In the case of self-release Grand Master boards, direct operation of shafts is obtained by 10-inch diameter handwheels on each shaft.

Dimmers.—See page H.11 for Slider and page H.16 for Sunset dimmer specifications.

Chain Interlocks or Couplings.—These consist of chains between shafts enabling all shafts to be revolved by the operation of one wheel. Chain interlocks can be locked or unlocked at will. Chain couplings are permanently connected and one wheel only is supplied to operate all shafts together. *Alternatively* :—

Grand Master Control.—Consists of a bevel on each shaft, permanently in mesh with two further bevels which normally idle on the master control shaft and to which they may be selectively locked by means of fine splines, so providing a reverse action in order to be able to rotate any shaft in a like or opposite direction to any other, whilst rotating the master control handwheel in one direction only. The master control is worm operated to give a fine and steady operation. On very large switchboards the above arrangement is replaced by an electro-magnetic operation, actuated by tumbler switch.

Scale Lighting.—This consists of a trough running the full length of the shafts with a 15-watt B.C. Pygmy Sign type Lamp above each Dimmer scale. This refinement can only be fitted to Boards with self release handles and is generally confined to the larger type of Grand Master Boards.

Wiring Troughs.—Provided at the top of all boards to which all incoming conduits can be bonded, bushed holes being provided for external cables.

Wiring.—Carried out in fire resisting cable. Busbars are coloured to indicate phasing or polarity.

Board Lights.—Fitted on the front of wiring troughs either shell type reflectors on small boards or stencilled two-light type on large boards (one white lamp and one blue for use in blackouts).

Signals.—On larger boards "Warning" and "Go" signals with Red and Green glass apertures can be fitted to Master panels.

General.—All switchboards are totally enclosed by sheet metal or perforated sheet metal panels. With SUNSET Dimmer Boards, the dimmers are made to take out from the back and it is therefore necessary to allow a minimum space of 18 inches between the back of the board and the wall. Boards fitted with Slider dimmers can be fitted flat against a wall. All boards are constructed on substantial angle iron framework.

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STRAND CONTROL

SWITCHBOARD PLATFORM DIMENSIONS

The diagrams on this page are provided to give an indication of space required to accommodate a stage switchboard, and at the same time allow adequate room for operation and maintenance.

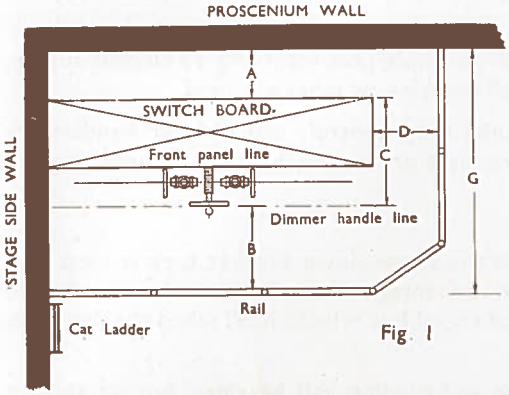

Fig. 1

Minimum dimensions required for Switchboard Platform

	Sunset Type Ft.	Ins.	*Slider Type* Ft.	Ins.	
A	1	6	Nil		(For removal and servicing of dimmers.
B	2	6 Min.	2	6	(For switchboard operation.)
C	3	3		9½-12	
D	2	0 Min.	Nil		(For access to back of board.)
E	8	0 Min.	8	0 Min.	
F	7	6	7	6	(An average figure only.)
G	7	3	3	3½ Min.	

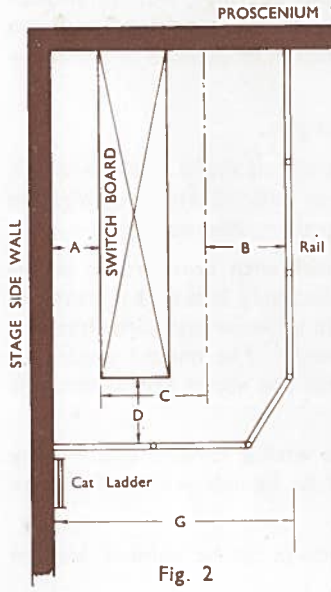

Fig. 2

Fig. 1 shows a typical switchboard installation in plan with the board parallel to the proscenium arch.

Fig. 2 gives an alternative arrangement wherein the switchboard is parallel to the side wall of the stage. Where local conditions permit, the former arrangement is much to be preferred as it allows the operator a better view of the stage, at the same time keeping the side walls clear for counterweight systems, scenery packs, etc.

Fig. 3 shows a side view of either of the foregoing arrangements.

Although the switchboard is shown on a perch or platform, the dimensions given will apply equally if it is situated at stage level.

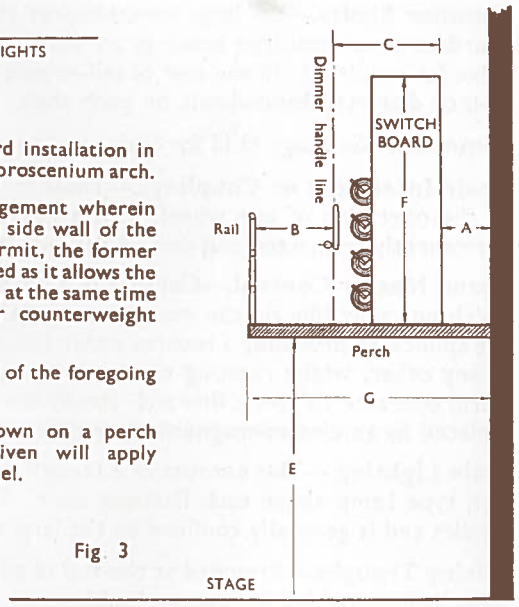

Fig. 3

No indication of switchboard length can be given as this is directly dependent on the number of dimmer ways, and height is given as an *average* only as this varies according to the design of each board.

The height of the platform above the stage is required for actors with tall head-dresses, period wigs, etc. If it is not possible to cantilever the platform from the adjacent walls, it should be suspended from the flies. No pillar should be installed to support the platform from the stage, as it will inevitably be found a serious obstruction and liable to cause accidents.

Although a cat-ladder is shown as the means of access to the perch, some licensing authorities require the provision of a sloping iron stairway.

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STRAND CONTROL

"JUNIOR" TYPE STAGE SWITCHBOARDS

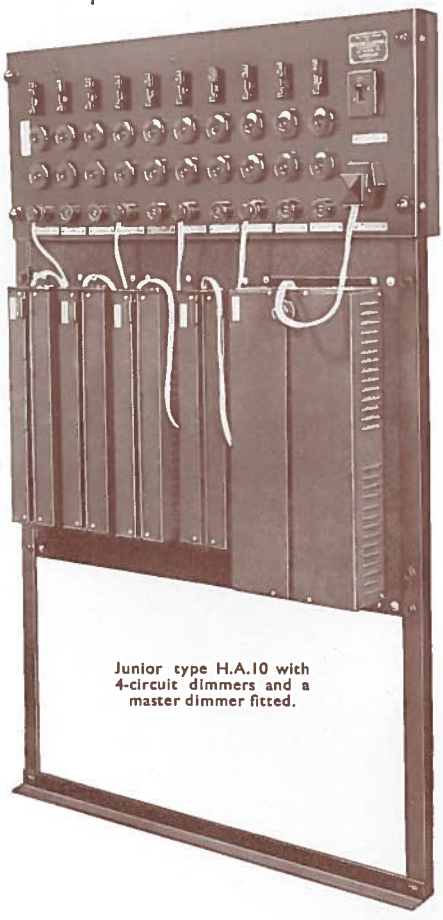
This switchboard has been designed for very small installations, such as schools and village halls where very little money is available. Two standard models are made for 10-ways and 20-ways, but the dimmers can be wound to suit requirements.

The switchboard consists of an angle iron frame on which is carried a switch panel for 10 (Pattern H.A.10) or 20 (Pattern H.A.20) lighting circuits. Each circuit has a 5-amp. locking-type fuse, a circuit switch and dimmer plug socket, and a two-way switch to connect to the master switch or dimmer or independent of them. Under the switch panel are slotted iron rails to which can be bolted six individual slider dimmers, of sizes up to 1,000-watts or four individual circuit dimmers and a master. Pattern A.20 carries twice this number of dimmers.

The dimmers can be purchased with the board, purchased later when funds permit, or hired for a particular production and just bolted on.

As the lighting circuits can be switched full on without the use of dimmers, and two-way blackout switching is provided, quite a number of common lighting cues can be carried out from the switch panel alone.

Junior type H.A.10 with no dimmer fitted.



Junior type H.A.10 with 4-circuit dimmers and a master dimmer fitted.

When dimmers are fitted they can be plugged into circuits as required, or even changed around during a scene, by means of 2-pin, 5-amp. plugs and flexible leads. If the wattages of the dimmers and master are chosen with care, a very wide range of lighting effects can be carried out with all the advantages of individual dimmers and electric interlocking at minimum financial outlay.

To obtain maximum use of the board it is recommended that all lighting circuits terminate at the stage end, in plug sockets. **The system is only available for use on the A.C. 200-250-volt range and with installations where the switchboard load does not exceed 120-amperes.**

DIMENSIONS

Type	Height	Width	Depth (over dimmer handle)
H.A. 10	5-feet	3-feet 2-inches	9½-inches
H.A. 20	5-feet	6-feet 4-inches	9½-inches

PRICES

H.A. 10 .. .. each
H.A. 20 .. .. ,,

(For details of slider dimmers, see page H.11.)

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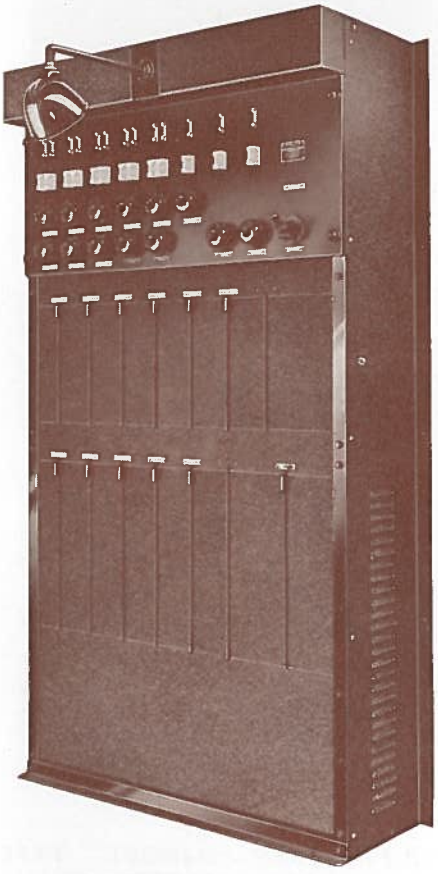
STRAND CONTROL

COMBINED SWITCH & DIMMER BOARDS

NON-INTERLOCKING SLIDER TYPE *(left)*

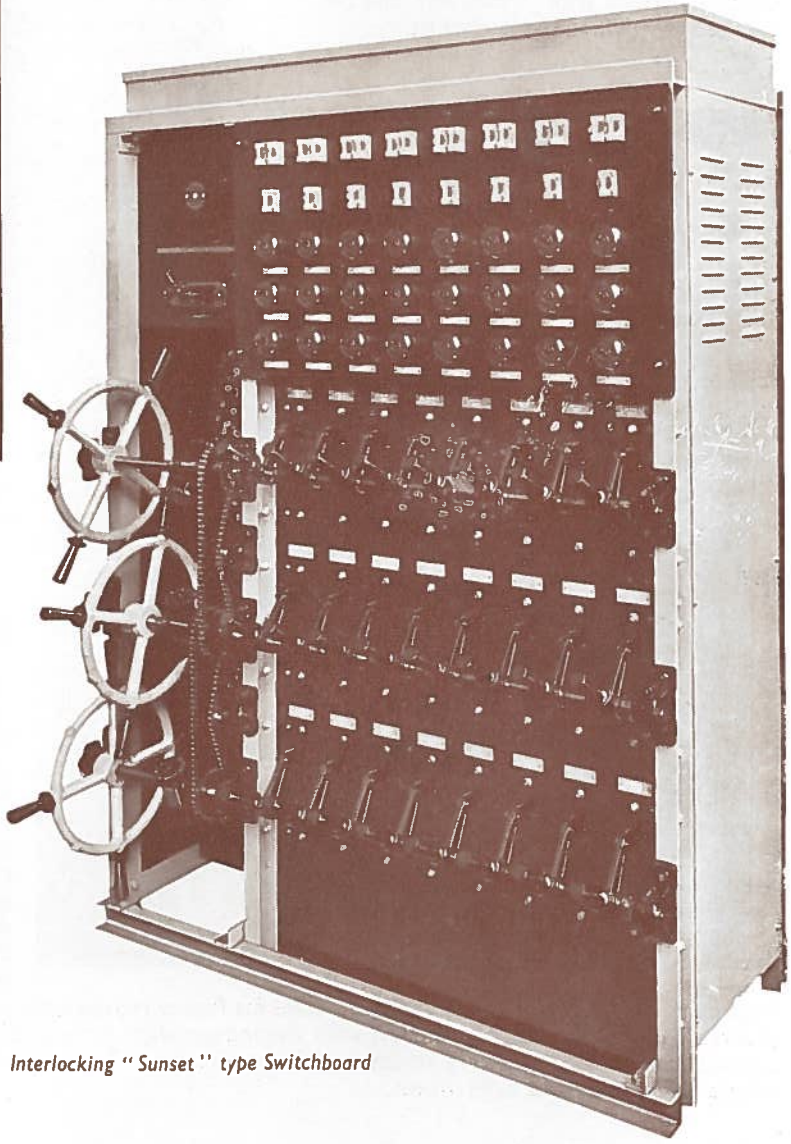
A simple and inexpensive Switchboard & Dimmer Bank suitable for use in a small school or small public hall. The switches are " two way and off " so that any particular circuit can be left alight independent of the blackout switch. Dimmers are of the slider type capable of individual control only. For collective operation a master dimmer is sometimes incorporated in the board.



Non-interlocking Slider type Switchboard

INTERLOCKING " SUNSET " TYPE *(below)*

An inexpensive type of switchboard and dimmer bank actually designed for the Repertory type of Theatre. Switch control for the individual circuits is by " two way and off " switches which allow any circuit to be left alight independent of the blackout switch. Individual dimmer control is by the bracket type of handle carried on shafts so that by " screwing down " on to the shaft collective control can be obtained. Dimmers are grouped in banks, each with its own master wheel. An inexpensive chain interlock can be provided between the three shafts so designed that they can be connected to operate from any one of the three master wheels. The blackout switch is a Back-of-Board knife pattern.



Interlocking " Sunset " type Switchboard

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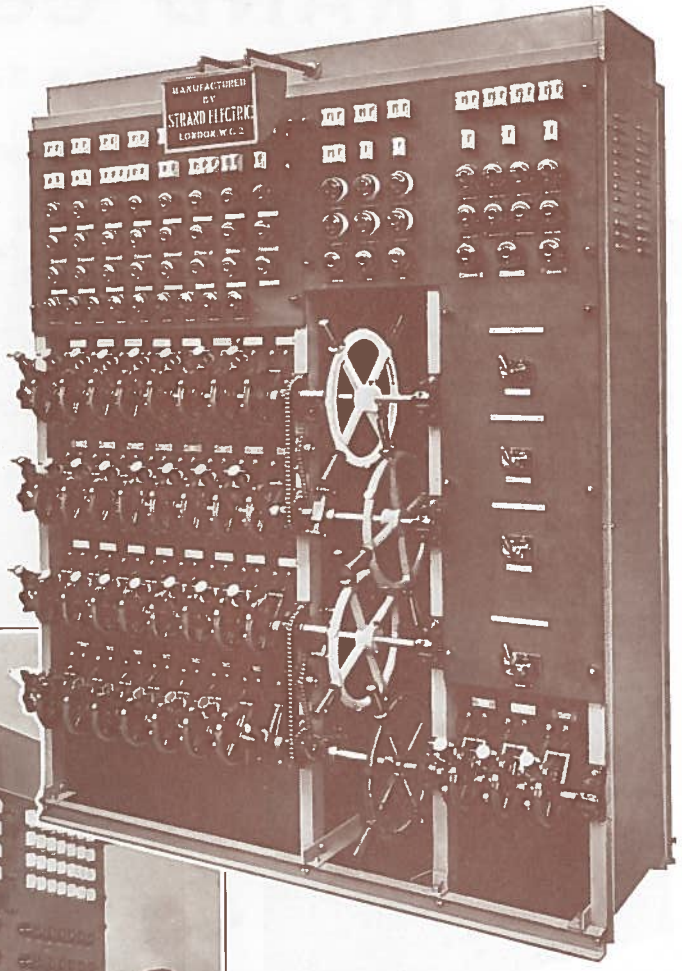
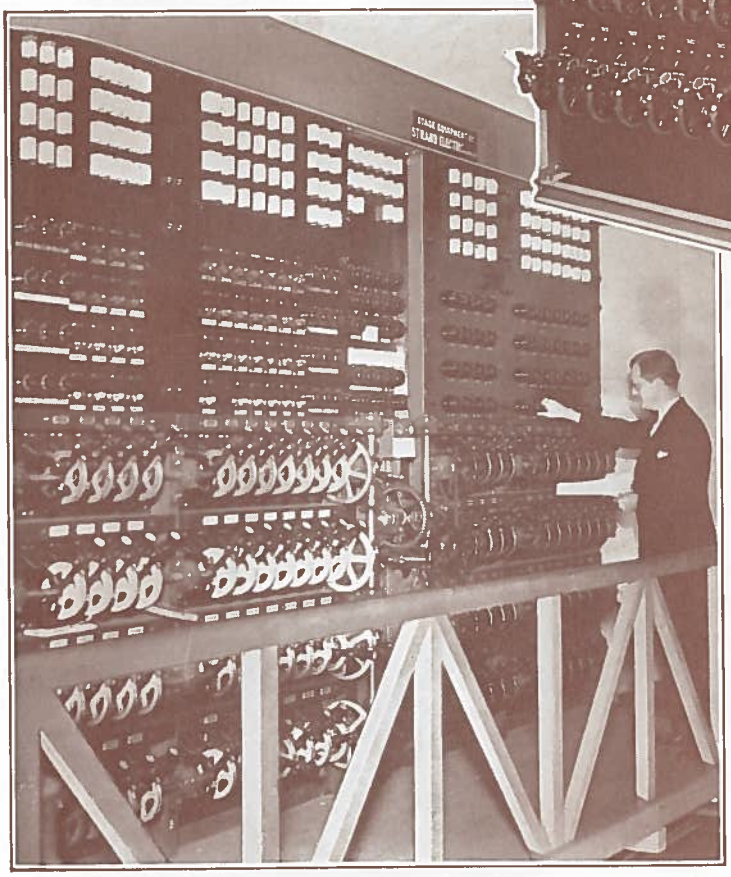
COMBINED SWITCH & DIMMER BOARDS

SELF RELEASE "SUNSET" TYPE
(right)

In this instance a more flexible method of collective dimming is employed in that the individual handles are arranged to release themselves from the shafting at the top and bottom of the travel. The Board illustrated is arranged with three colour shafts and an independent shaft to take all those circuits which are not allied to any colour bank such as Spots, etc. There are master switches for each colour (3-pole as the board is balanced over the three phases). All "one way" colour circuit switches are all tumbler pattern with "two way and off" type for the independent circuits.





SELF RELEASE "SUNSET" TYPE with GRAND MASTER CROSS CONTROL *(left)*

This represents modern practice for manually operated Theatre switchboards. Colour and independent master switches are remotely controlled, being contactors (installed in the basement to obviate noise) operated from the switchboard direct by "two way and off" switches so that any master can be left independent of the Blackout. Individual dimmer handles are of self release type and each shaft is connected to the grand master wheel by means of constant mesh bevels (actuated by fine splines) which provide reverse action so that any shaft can revolve in the same or opposite direction to its neighbour. Each handle is fitted with an illuminated scale for future reproductions of the same intensity. The illustration shows a four-colour bank on the left with the independent circuits on the right. The master wheel is worm operated and thus gives a very steady and fine operation. For quick operation of the shafts, each is fitted with a direct operated hand wheel.

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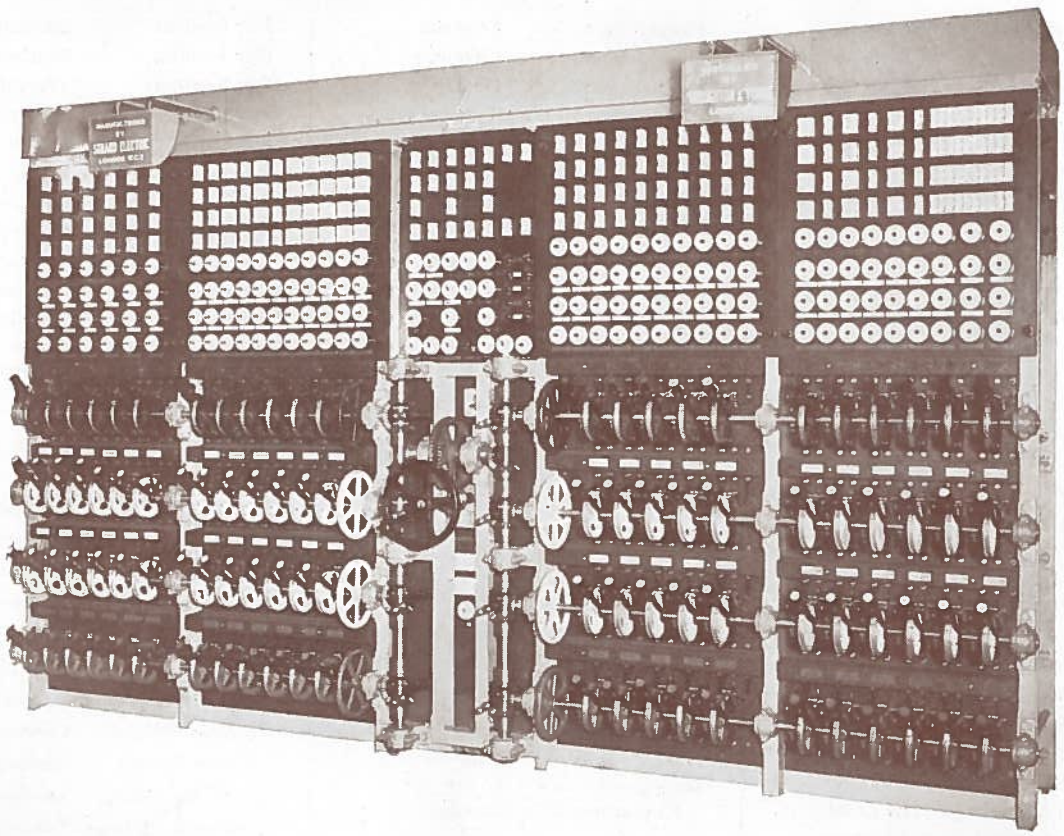
STRAND CONTROL

COMBINED SWITCH AND DIMMER BOARDS



A TYPICAL SELECTION OF STRAND THEATRE SWITCHBOARDS

GRAND MASTER TYPES

Alexandra	Birmingham
Alhambra	Bradford
Alhambra	Glasgow
Ambassadors	London
Duchess	London
Empire	Hackney
Empire	Shepherd's Bush
Fortune	London
Haymarket	London
Hippodrome	Bristol
His Majesty's Opera House	Aberdeen
His Majesty's Opera House	Belfast
Kings	Southsea
New	Northampton
New	Oxford
Opera House	Blackpool
Opera House	Leicester
Palace	London
Phoenix	London
Prince of Wales	Cardiff
Repertory	Birmingham
Rex	Turin
Royal	Dublin
Royal	Newcastle
Royal Court	Liverpool
Shakespeare Memorial	Stratford-on-Avon
St. James	London
Tivoli	Aberdeen
Vaudeville	London
Wimbledon	London
Wyndhams	London

continued overleaf

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STRAND CONTROL

COMBINED SWITCH AND DIMMER BOARDS

SELF RELEASE and OTHER TYPES

Alhambra	Paris
Arcadia	Llandudno
Arts	Cambridge
Arts	Ipswich
Atomic Energy Research Estab.	Harwell
Beaumont College	Windsor
Casino	Blackpool
Casino	London
Cathall Road Baths	Leyton, London
Civic Hall	Orpington
Civic	Bradford
County Boys School	Ilford
Criterion	London
Dalrymple Hall	Fraserburgh
Eastern Pavilion	Ryde
Embassy	Peterborough
Empire	Chiswick
Empire	Sheffield
Empire	Sunderland
Empire	Wood Green
Empire	York
Everymans	London
Floral Hall	Scarborough
Floral Hall	Southport
Garrick	Southport
Garrick Playhouse	Altrincham
Goldsmiths' College	New Cross
Grammar School	Manchester
Grand	Croydon
Grand	Derby
Grand	Halifax
Grand Pavilion	Porthcawl
Guildhall School of Music	London
Hippodrome	Brighton
Hippodrome	Coventry
Hippodrome	Dudley
Hippodrome	Keighley
Homerton College	Cambridge
Incognito	Southgate
Kings	Edinburgh
Kings	Glasgow
Kings School	Canterbury
Lady Eleanor Hollis School	Hampton
Lesser Market Hall	Llanelly
Lido	Cliftonville
Little	Eltham
Little	Southport
London University	London
Lyceum	Edinburgh
Lyceum	Newport
Lyceum	Sheffield
Marine	Lyme Regis
Market	Aylesbury
Muizenburg Pavilion	Capetown
Music Pavilion	Eastbourne
New	Cardiff
New	Hull
Northern Polytechnic	London
Opera House	Coventry
Palace	Leicester
Palace	Plymouth
Pavilion	Glasgow
People's Palace	London
Pier	Eastbourne
Pier Pavilion	Llandudno
Pier Pavilion	Southend
Pier Pavilion	Worthing
Playhouse	Amersham
Playhouse	Kidderminster
Princes	Bradford
Princes	London
Repertory	Sheffield
Rowland Hill School	Tottenham
Royal	Glasgow
Royal	Windsor
Royal Academy of Dramatic Art	London
Savoy	London
S. E. Essex Technical College	Dagenham
Social Centre	Slough
Social Centre	Tonbridge
Strand	London
Taj	Bawarda
Technical College	Coventry
Technical College	Enfield
Technical College	Radcliffe
Theatre Royal	Rochdale
Toynbee Hall	London
Training College	Bedford
University College	London
Wellington College	Crowthorne
Westminster	London
Windsor	Bearwood, Birmingham
Winter Garden	Margate
Workmen's Hall	Cwmamman, S. Wales

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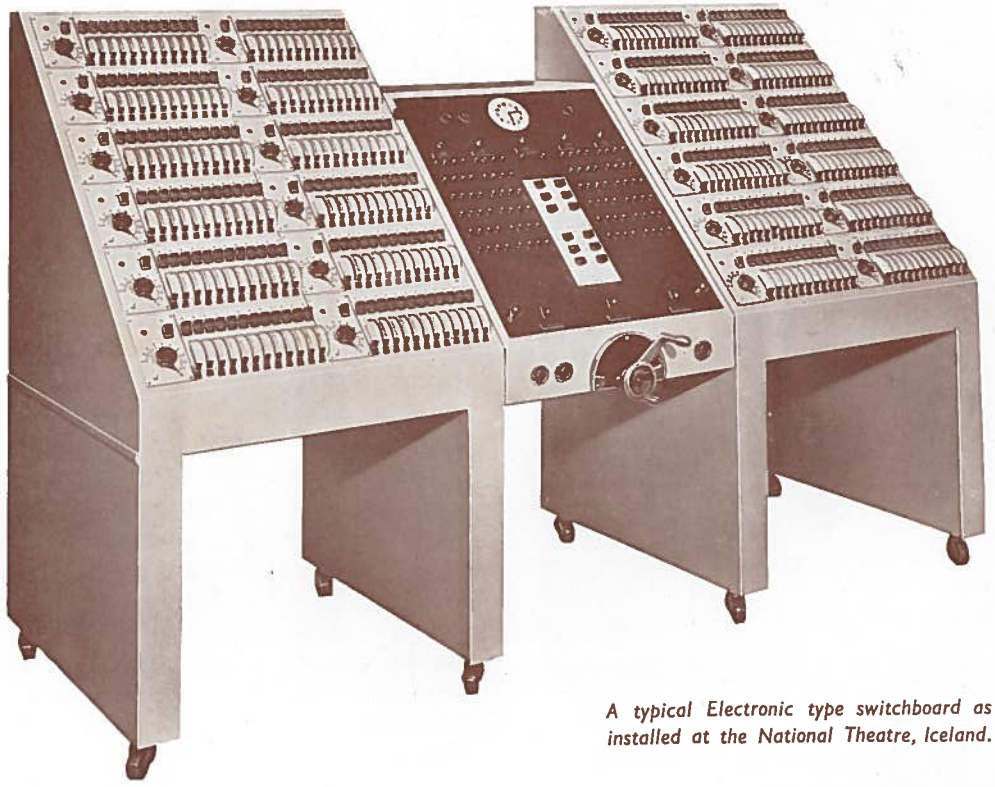
STRAND REMOTE CONTROL

ELECTRONIC TYPE

(PATENTS PENDING)



A typical Electronic type switchboard as installed at the National Theatre, Iceland.

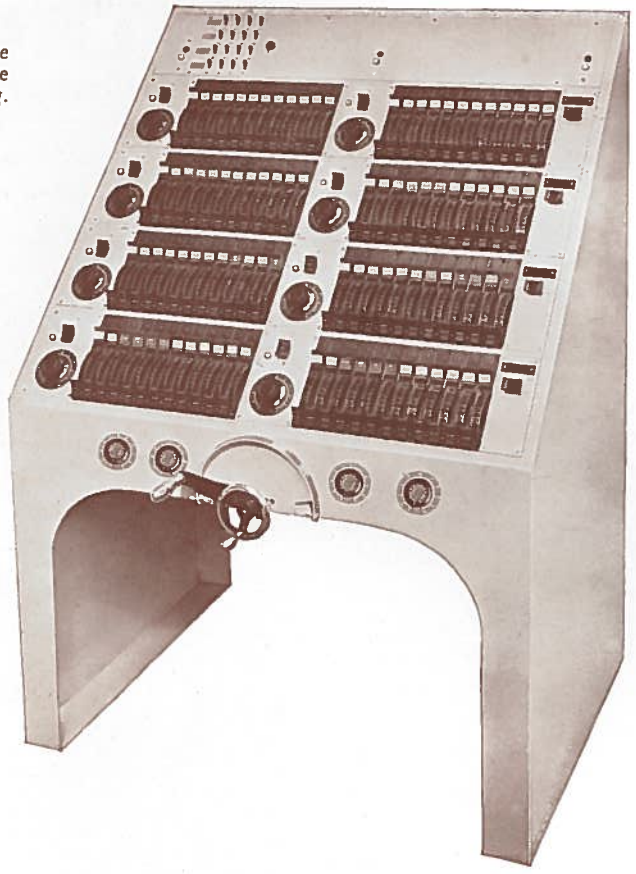
The widespread use of electronic circuits during the war has proved their reliability over prolonged periods and has led to their adoption for more peaceful purposes.

Now Strand Electric have utilised these principles for the control of stage lighting. The result, as the following pages show, is a switchboard which, while embodying a large number of new facilities, preserves the standard layout and method of operation familiar in so many theatres all over the world to-day.

STRAND REMOTE CONTROL

ELECTRONIC TYPE

Fig. 1
A 48-way desk type control with duplicate panel for pre-setting.



This new form of switchboard differs from manually operated types in that thyratron valves regulating voltage are used to vary the intensity of the lighting circuits, instead of wire wound resistances controlling current. Figures 1 and 2 show examples of the control panel and valve bank which are used. Inter alia the following major advantages are achieved:

(1) The loads on the lighting circuits can be anything from zero to maximum capacity of the control without affecting the voltage/dimmer-travel ratio, i.e., **smoothness of dim is unaffected by variation in the size of the load.**

(2) The size of the control panel is very much smaller than the standard board as the components only handle the control and not the lighting load. Not only does this permit the **installation** of a control panel **in small spaces** which could not accommodate the ordinary type of switchboard, but also **the manipulation of many more circuits per operator.**

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ELECTRONIC TYPE

(3) The nature of the electrical circuit enables the control panel to be duplicated, changeover between the two halves of the board being effected by a grand master control. This means that the intensity of any or all circuits can be varied to any other required intensity by the operation of a single handle. The degree and direction of change of intensity can be selected at leisure in advance. **Pre-selected dimming and switching is an accomplished fact.**

(4) For collective operation dimmers may be interlocked electrically. **Proportional voltage regulation is therefore assured** no matter how many circuits are controlled at once, and no matter what may be their dimmer settings.

(5) Master dimmers are provided whereby **any circuits may be dimmed whilst any others are simultaneously brightened at the same or any speed,** whether such circuits are on the same or different rows. The dimming and brightening are achieved by the operation of only two controls and **without disturbing any pre-selections** which may have been made on the duplicate panel.

(6) Intensity of the lighting is controlled by varying the voltage instead of the current as with wire wound resistances. **A considerable financial saving is thus effected in the general use of the board.**

(7) Each circuit incorporates three valves arranged to supply uni-directional current to the stage equipment. Each stage lighting circuit and consequently the stage load as a whole is fed equally from the three phases. **No question arises therefore of balancing the load nor of arranging equipment on the stage to avoid the proximity of diverse phases for reasons of personal safety.**

(8) The control is silent in operation under all circumstances.

(9) Apart from the switch there is only one moving part per circuit. If necessary **a complete circuit control unit may be replaced on the panel in less than five seconds.**

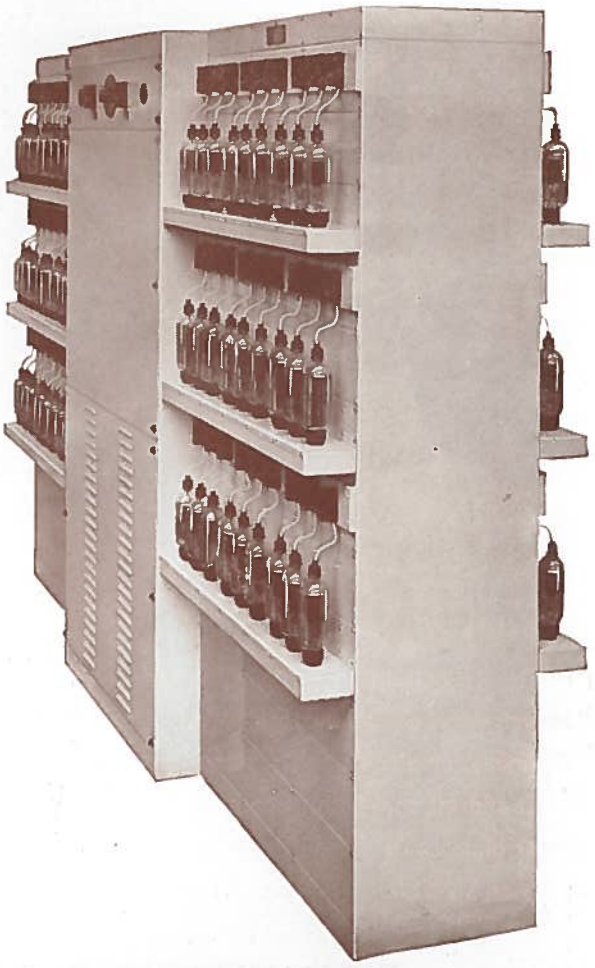

Fig. 2 *A 36-way valve bank with space to increase up to 48-ways.*

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ELECTRONIC TYPE

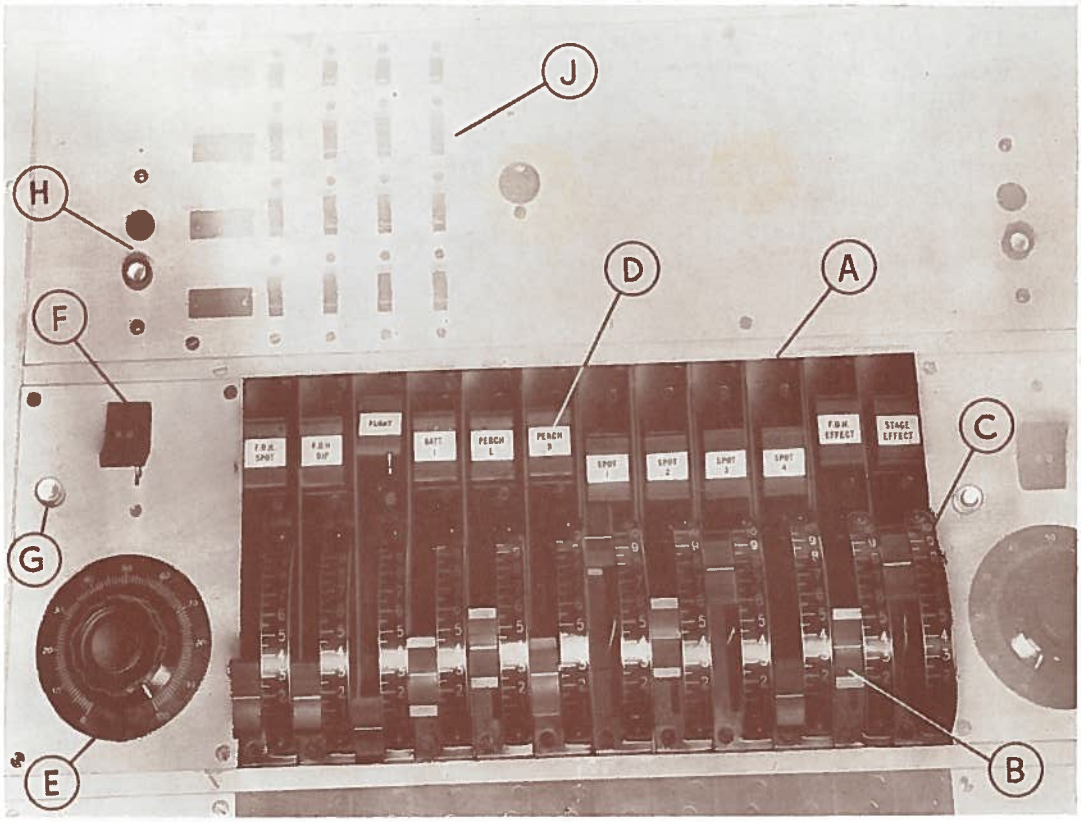

Fig. 3 *Close up view of part of control panel.*

THE CONTROL PANEL

Layout.—As on a hand operated board each circuit on the control panel has a two-way-and-off switch and a "dimmer" handle. These circuit control units are grouped in horizontal rows of 12, each row having a master switch and master dimmer control. Each panel or set of rows has its own panel master switch and panel master dimmer controls. Signal lights, remote colour change controls, etc., may be fitted as desired. (One arrangement is shown at J Fig. 3.)

The size of each installation will decide the number of rows, and the local conditions will determine whether these should be arranged vertically above one another in, for example, two banks of six rows each, or whether width is preferable to height, and a better arrangement would be three banks of four rows each, side by side.

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STRAND REMOTE CONTROL

There are no technical limitations to the number of circuits or rows which may constitute a complete panel and the latter may be mounted as a desk as in Figure 1, or in the form of a shallow box for flush or surface wall mounting.

Individual Circuit Control Unit.—This consists of a plastic moulding (A) measuring only 6½ inches by 1 inch wide, carrying the miniature "dimmer" with its operating handle (B) and graduated scale (C), together with a two-way-and-off switch (D). The handle of the latter is suitably labelled to denote the stage lighting circuit controlled. The complete unit plugs into position (there are only two fixing screws), and may be replaced or interchanged in a matter of seconds, the winding of the dimmers being standard and without relation to the size of the lighting load being controlled.

Row Master Controls.—These consist of a row master dimmer (E), a row master switch (two-way-and-off) (F) and a small pilot lamp (G) indicating when the row in question is in use. These are situated at the end of the row they control.

Panel Master Controls.—The complete set of rows constituting a panel are provided with a panel master switch (H) and two panel master dimmers (shown below each panel in Fig. 1). As will be seen later these two dimmers are allied to the two " on " positions of the switches mentioned in the two previous paragraphs.

Duplicate Panel and Grand Master Controls.—The whole of the above controls are duplicated on a second panel so that, while either is in use, the switches and dimmers of the other may be set up to meet future requirements without interfering with the lighting in use until a changeover is made. The changeover from one panel to another is by means of a simple lever for rapid operation, or by means of a hand wheel for slow work (shown centrally below panels in Fig. 1). As it may on occasions be desired only to change over some but not all circuits to new settings on the other panel, each horizontal row of circuit controls is fitted with a special switch (extreme right of Fig. 1) whereby that row may be released from the grand master cross control. Thus rows of controls on both panels may be in use simultaneously (the pilot lamp at the end of each row indicating which these are) and a dead blackout switch is provided to control the whole of both panels simultaneously by a single operation. (*Top right*, Fig. 1.)

OPERATION

Any incandescent stage lighting load between rated maximum and zero may be smoothly regulated by its circuit dimmer, or may be left in an intermediate position of check indefinitely without heating or deterioration of parts. The two-way-and-off circuit switch embodies one "off" position and two "on" positions. One of these " on " positions connects that individual circuit to the main supply through the row master switch. In the other " on " position the switch feeds the circuit independently of the row master switch. In addition, the same switch gives the operator the choice of placing the individual circuit under the control of its row master dimmer or not.

Row master controls consist of a row master dimmer and row master switch. The former will dim any circuits in that row which have been connected to it by their individual circuit switches. As this control functions electrically rather than mechanically, individual circuits are dimmed or brightened proportionately and the individual dimmer handles do not move. Consequently it is always possible to return to any previous

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dimmer settings or intensities. The row master switch has an " off " position whereby a complete row may be blacked out, and two " on " positions. With the switch in **one** of these, such circuits as have been individually **selected** may be blacked out by the panel master switch. In the **other** " on " position of the row master, **all** circuits on that row will be blacked out by the panel master switch.

From the foregoing it will be understood that by selecting the appropriate position of individual circuit switches and row master switches, as many circuits as required on as many different rows as desired may be controlled from the panel master switch. Equally it is at the choice of the operator whether any circuit shall be under the control of its row master dimmer.

In order to provide for the collective operation of row master dimmers, two panel master dimmers are fitted. One collectively controls all those circuits which are fed through their row master dimmers, while the other performs a similar function for those which are fed independently of the same. Thus it is possible for one operator to brighten any number of circuits on a panel, while as many other circuits as may be desired are being dimmed simultaneously at the same or any other speed, regardless of the number of rows involved. The whole operation is electrical and there are no gears to insert or withdraw.

The changeover from the lighting set up on one panel to the preselection made on the other panel is effected either by a lever for instantaneous or rapid changes, or by means of a hand wheel for slow working. Both of these alternative drives are permanently in mesh but through the use of a suitable friction clutch it is never necessary to disengage one form of drive when using the other. A scale is provided for the lever drive for the purposes of checking progress and repetition. When the hand wheel is used the lever again passes over the scale acting as a pointer. The speed of changeover from one panel on to another is at all times at the discretion of the operator and the changeover can actually be stopped at any time. Any desired additions or alterations to the lighting may be made while a changeover is in progress. The addition of a variable speed motor drive for very slow changes is a simple matter.

It may be found that certain circuits are not required to alter intensity when changing over from one panel to the other. If the controls are set up on the second panel in like manner to the panel in use, the circuits will remain in status quo throughout. In order, however, to relieve the operator of the necessity of duplicating a number of settings for such a purpose, a two-way-and-off switch is provided at the end of each horizontal row of circuit controls whereby any row of either of the two panels may be " held " or released from the grand master cross control. The pilot lamp at the end of each row indicates always which rows are alive as, with the use of the last-mentioned switches, circuits on both panels may be alive simultaneously and the lever pointer will not by itself indicate the true state of affairs. As a changeover proceeds the pilots on one panel (excepting those released as above) dim to out while the others brighten to full by the end of the operation. The two panels may be used alternately as often as desired, but it will be found that the majority of simple changes can be effected on one panel, leaving the second free for the more complicated manœuvres. It is of course always possible to revert to the lighting set up on the panel previously in use. This has its advantages at rehearsal when a producer either wishes the actors to start a scene again, or to check what changes he has already proposed from the lighting at the commencement of the scene.

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STRAND REMOTE CONTROL

Siting and Wiring.—The control desk, which operates on 230 v D.C. provided by the valve bank, is completely internally wired to numbered terminal blocks. Apart from accessories such as signal lights, remote colour change switches, etc., this control only requires one wire per dimmer-way plus three feed wires. (Ninety-three wires for a ninety-way control, one hundred and seventy-five for a one hundred and seventy-two-way control, and so on.)

Inter-connection.—Control wires between panel and valve bank should be small gauge high insulation, e.g., 7/.0076 P.V.C., and the remaining three feed wires not less than 3/.036 gauge. The small size of the control and its wires make it eminently suitable for remote operation, e.g., Front of House position where an unobstructed view of the stage may be obtained. The control point may be placed up to 400 feet from the valve bank.

Dimensions.—As alternative arrangements are possible for any given number of circuits, the following figures—**which include the duplicate panel**—are examples only. They assume that the two panels are placed side by side, whereas it may be found more convenient to place them at an angle or parallel to one another with the operator between them.

Number of Ways	Approx. Dimensions of Panel Face
48	36 inches × 36 inches
60	36 inches × 42 inches
72	36 inches × 50 inches
96	36 inches × 72 inches
144	36 inches × 100 inches

When panels are mounted in desk form the depth is about 26 inches. When panels are wall mounted the depth is 7 inches and the grand master cross control is supplied as a separate unit mounted vertically or horizontally as required.

THE VALVE BANK

Electric Supply.—The apparatus requires a 3-phase 4-wire 50-cycle A.C. supply and is designed to operate on a line voltage of from 200 to 250 v. A.C.

Layout.—The size of valve bank will depend on the size of the installation. To assist economic production certain standardisation has been adopted, whereby a complete valve bank will consist of the necessary number of valve racks (each accommodating up to 24 "dimmer" ways) plus a main section for every two such racks. Thus an installation of 96 ways will require 4 valve racks and 2 main sections. These may be placed in line, at an angle, or parallel to one another as the situation requires.

Main Sections.—Main sections which are totally enclosed and ventilated, contain transformers, rectifier, main control switches and fuses, etc. They also act as distribution centres for both control and lighting circuits.

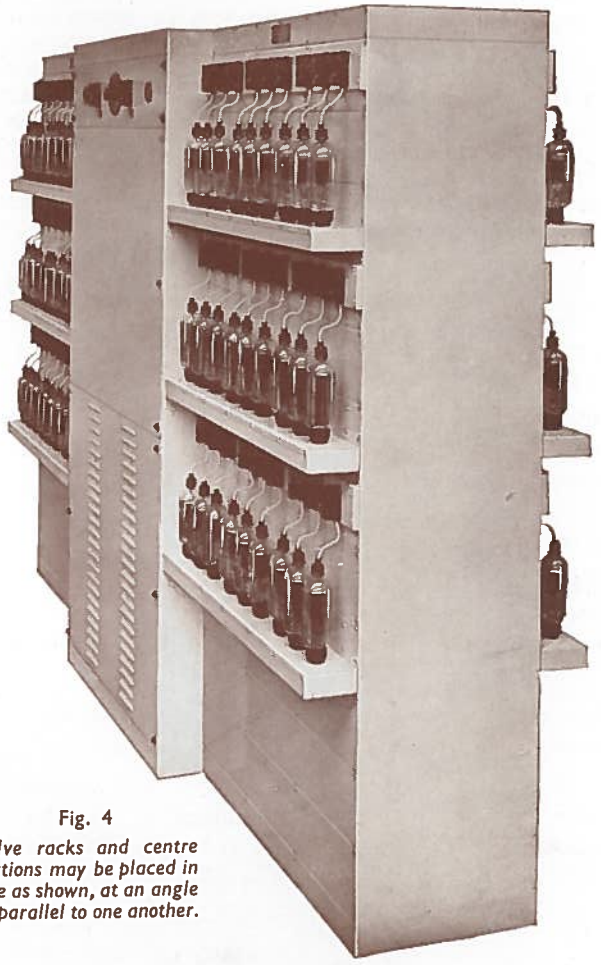

Fig. 4

Valve racks and centre sections may be placed in line as shown, at an angle or parallel to one another.

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STRAND REMOTE CONTROL

Valve Racks.—In addition to accommodating the valves, these carry all necessary lighting circuit fuses, the only further protection of the entire bank required being the usual isolating switch and fuse, which should be situated nearby.

Valves.—The maximum "dimmer loss" with valves is 80 watts per 2 kw. circuit against 600 w. when the same load is dimmed through resistances. For the present, the maximum load per lighting circuit is restricted to 2 kws. This is not to say however that the maximum load controlled by one circuit of the control panel need be so limited, since a multiplicity of valves may be connected together on the control side so as to be operated from a single switch or dimmer. Thus a blue cyclorama flood bank of say 8 kws. could be operated from a single circuit control on the panel but would require the space equivalent to four circuits (each of 2 kws.) on the valve bank. As soon as valves of larger capacity have passed satisfactory tests they will be made available, and the valve racks have been designed and constructed to accommodate them at any time. It has however been found in practice that theatrically it is often extremely useful to break down the larger loads such as flood banks, footlights and battens into sections, e.g., right, centre and left, to allow gradation of light across the stage. It is not felt therefore that this temporary limitation is of a serious nature.

Tests which we have conducted to date—independently of the manufacturers—show that a valve life equivalent to three years working may be expected **as a minimum,** and it is confidently anticipated that completion of these tests will raise this figure very considerably. In our own experience the only valve failures to occur have taken place within the first month of use. This point has been completely covered by the manufacturer's guarantee. Owing to the impracticability of assessing or recording the actual number of hours of use of any valve, the manufacturers have agreed to guarantee the valves during the year following their **installation** as follows. Any failures during the first month are replaced free of charge. Any failures during the second month are replaced on payment of 1/11th of the value, during the third month by payment of 2/11ths and so on. Thus during the guarantee period the user is only required to pay for the period of actual installation *less* the first month, which is in any event a period of free replacement.

It should always be appreciated that the failure of a valve does not mean the extinction of the circuit concerned, but only a voltage reduction of 33⅓ per cent. The circuit will continue to be fed from the other two phases and may still be switched and dimmed.

Siting and Wiring.—In order to reduce the lighting circuit wiring to a minimum the valve bank should be situated near (but not necessarily on) the stage. No special ventilation is required but cold draughts should be avoided. All internal wiring is carried out to terminal blocks numbered to correspond with those in the control panel.

Dimensions.—The necessary number of valve racks and main sections can be arranged to suit local conditions, e.g., in line, at an angle or parallel. Each valve rack and each main section measures 3 feet long by 2 feet deep by 5 feet 11 inches high. Not less than 2 feet must be allowed at back and front and at one end for access.

Thus, assuming they were all placed in line, the lengths shown in the table would be required, the depth and the height remaining constant.

No. of 2 kw. Ways	No. of Sections Rack	Main	Total Length of Bank
Up to 24	1	1	6 feet
25 to 48	2	1	9 feet
49 to 72	3	2	15 feet
73 to 96	4	2	18 feet
97 to 120	5	3	24 feet
121 to 144	6	3	27 feet

Access must be added to the above lengths.

The small dimensions of each part (3 feet by 2 feet by 5 feet 11 inches) should ensure easy installation in the most awkward location.

Further details and demonstrations on application.

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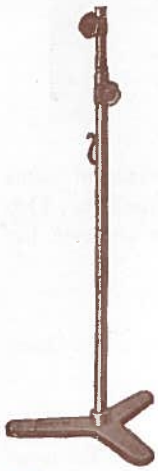
STRAND SUSPENSIONS and STANDS



L.66

L. 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. Will take all lanterns except Patts. 27, 83 and 102. Minimum height 4 ft. 3 in.; maximum height 7 ft.; radius of feet at base 12 in.; net weight 37 lb. Price each

L.260 As L.66 but fitted with rubber-tyred castors (as illustrated). Price each

L.257 Miniature telescopic stand, generally as L.66 but of lighter construction, complete with swivelling collar and cable hook. For use with lanterns, Patts. 45, 81a and 237.
Minimum height 3 ft. 9 in.; maximum height 6 ft. 6 in.; radius of feet at base 8 in.; net weight 15 lb. Price each

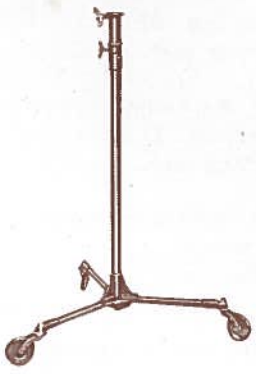
L.260

L.258 Telescopic stand for Patt.102 2kw. Spotlight (as illustrated). Constructed of tubular steel with removable rubber-tyred castors.
Minimum height 3 ft. 3 in.; maximum height 5 ft. 9 in.; radius of legs over castors 20 in.; net weight 21 lb. Price each

L.112 Heavy cast iron bench base (as illustrated) with locking handle. Not suitable for Patts. 27, 83 and 102.
Height $6\frac{1}{4}$ in.; diameter $6\frac{3}{4}$ in.; net weight $5\frac{1}{2}$ lb. Price each

L.113 Flange plate stand (as illustrated) with locking wheel. Not suitable for Patts. 27, 83 and 102.
Height 6 in.; diameter 4 in.; net weight $1\frac{3}{4}$ lb. Price each

L.259 Ceiling fixing saddle (as illustrated). Drilled for two $\frac{3}{8}$ in. diameter bolts, or coach screws (not supplied), for suspending lanterns (except Patts. 27, 83 and 102) or " S " type battens, where head room is limited. Price each

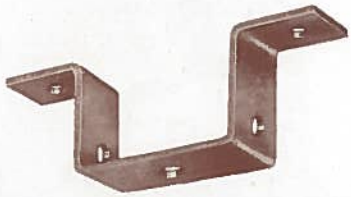


258

L. 64 Safety chain, 22 in. long (for use when lanterns are suspended), with ring on one end and clip hook at the other.

L.112

L.113



L.259

(continued overleaf)

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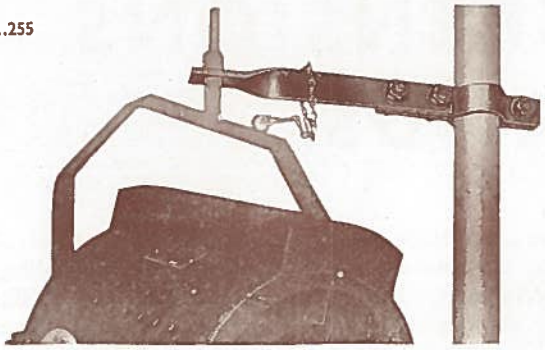
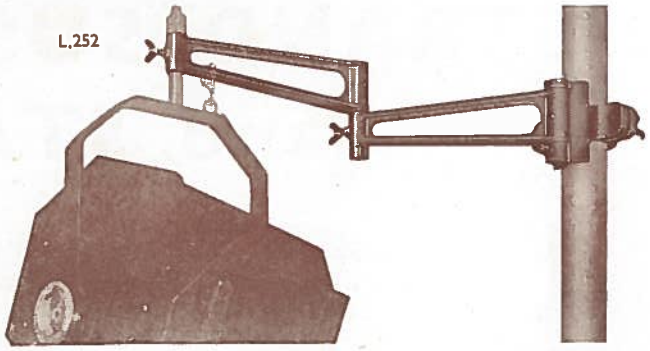
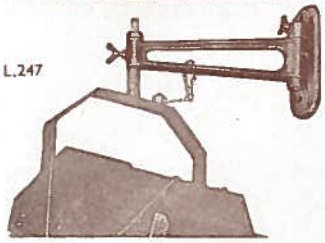
L.255



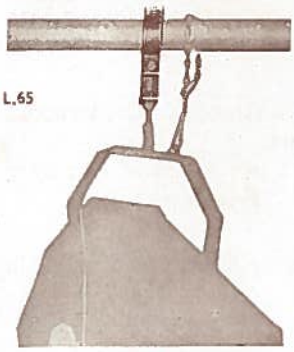
L.252



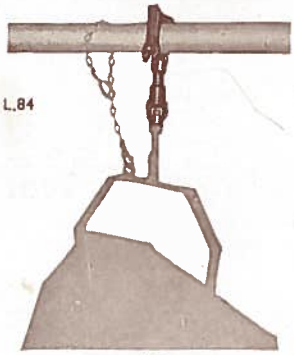
L.247



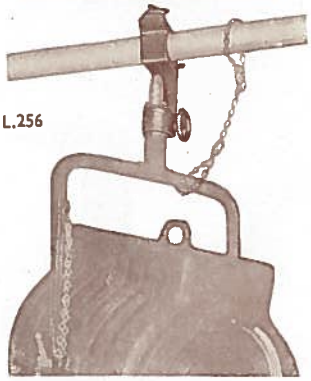
L.65



L.84



L.256



L.247 Swivel arm wall bracket (as illustrated), reach 10 in. Made in extra light aluminium throughout, the backplate being drilled for two $\frac{3}{8}$-in. rag bolts or coach screws (not included). Not suitable for Patts. 27, 83 and 102.
Net weight $1\frac{1}{2}$ lb. Price each

L.248 As L. 247 but with double extension arm, increasing maximum reach to 19 in.
Net weight $2\frac{1}{4}$ lb. Price each

L.251 Adjustable boomerang bracket, consisting of clamp for 2 in. diameter barrel, and adjustable arm giving reach of 10 in. In extra light aluminium, with locking wing bolts. Not suitable for Patts. 27, 83 and 102.
Net weight $1\frac{1}{4}$ lb. Price each

L.252 As L.251 but with extension arm giving a maximum reach of 19 in. (as illustrated).
Net weight 2 lb. Price each

L.253 Adjustable boomerang bracket as L.251 but for 1 in. diameter barrel. Reach 10 in. Net weight $1\frac{1}{4}$ lb. Price each

L.254 As L.253 but with extension arm, giving maximum reach of 19 in.
Net weight 2 lb. Price each

L.255 Fixed boomerang bracket (as illustrated), for 2 in. diameter barrel, giving 11 in. reach. Not suitable for Patts. 27, 83 and 102.
Net weight $2\frac{3}{4}$ lb. Price each

L. 65 "L" clamp (as illustrated), for suspending lanterns from $1\frac{1}{2}$ in. diameter barrel. Not suitable for Patts. 27, 83 and 102.
Net weight 1 lb. Price each

L. 84 Adjustable barrel clamp (as illustrated), for suspending lanterns from barrel of $1\frac{1}{2}$-$2\frac{1}{2}$ in. diameter. Not suitable for Patts. 27, 83 and 102.
Net weight $1\frac{1}{2}$ lb. Price each

L.256 Extra light cast aluminium barrel clamp (as illustrated), for suspending Patt. 102. 2 kw. Spots from 2-$2\frac{1}{2}$ in. diameter barrel.
Net weight $1\frac{1}{2}$ lb. Price each

NOTE.—For triple towers see leaflet B.14. For standard batten suspensions see leaflet A.21.

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