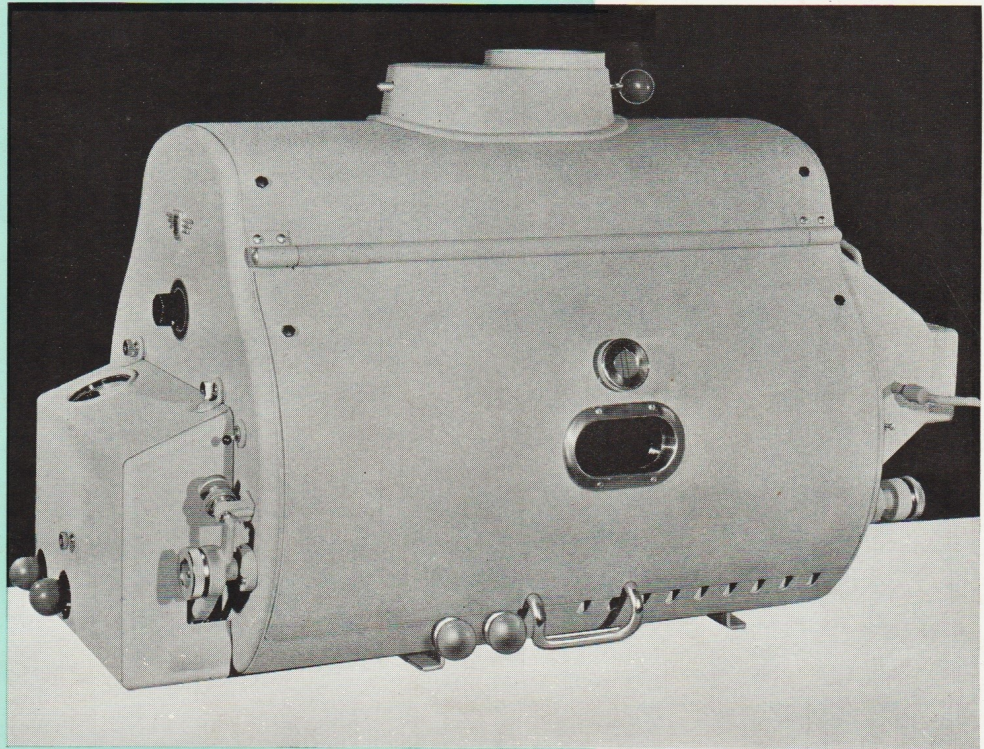


PHILIPS

Cinema

A-II-14-E

55-85 A
HIGH-INTENSITY
ARC LAMP
TYPE EL 4455



88312

The 55-85 A H.I. arc lamp possesses the following outstanding properties:

- very high luminous efficiency,
- uniform light distribution,
- perfectly steady arc,
- neat arrangement and easy accessibility of all the controls,
- matched to the Philips projectors FP 5, FP 6, FP 56 and FP 7 and easily adaptable to any other projector,
- suitable for all H.I. carbon trims for amperages from 55 A to 85 A,
- easy operation and maintenance,
- simple supervision,
- also available with slide attachment.



HIGH LUMINOUS EFFICIENCY

The arc lamp is equipped with a reflector of special curvature, the diameter being 14" (356 mm); with rotating shutter and no film in the gate the luminous flux leaving a lens with an aperture F/1.6 amounts to 9000 lumens at a current of 75 A.

The front of the lamphouse is so designed as to allow easy adjustment of the optimum distance (about 32" = 813 mm) from the top of the reflector to the film, even when the soundhead is mounted between the projector and the lamphouse.

UNIFORM LIGHT DISTRIBUTION

Uniform light distribution is ensured since:

the reflector can be adjusted accurately by means of two knobs on the operating side;

the negative carbon can be adjusted laterally and vertically;

the support of the positive carbon is provided with an accurately aligned V-guide which ensures that this carbon always remains in the optical axis of the reflector.

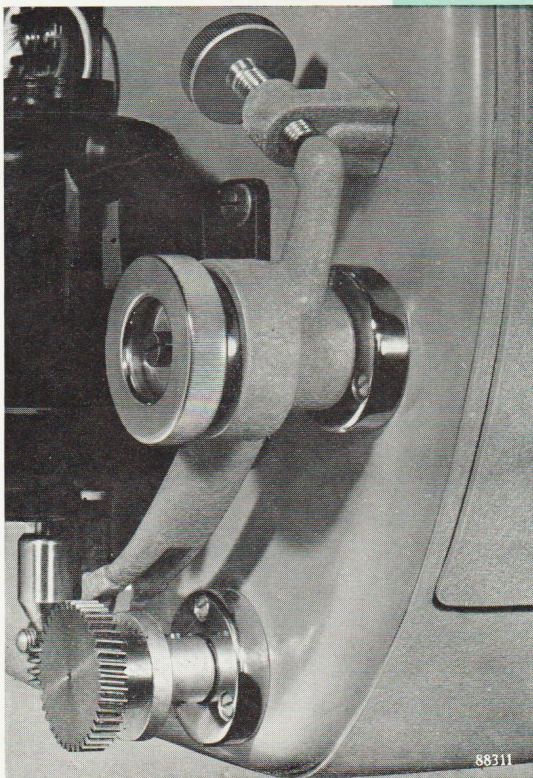
CONSTANT LIGHT OUTPUT

The carbon-feed mechanism, consisting of a motor — energized by the arc voltage—and a reduction gear, is mounted against the rear of the lamphouse and protected from dust by a cap. It ensures constant carbon feed; slight deviations from the correct arc gap are immediately corrected, the speed of the motor changing automatically and instantaneously.

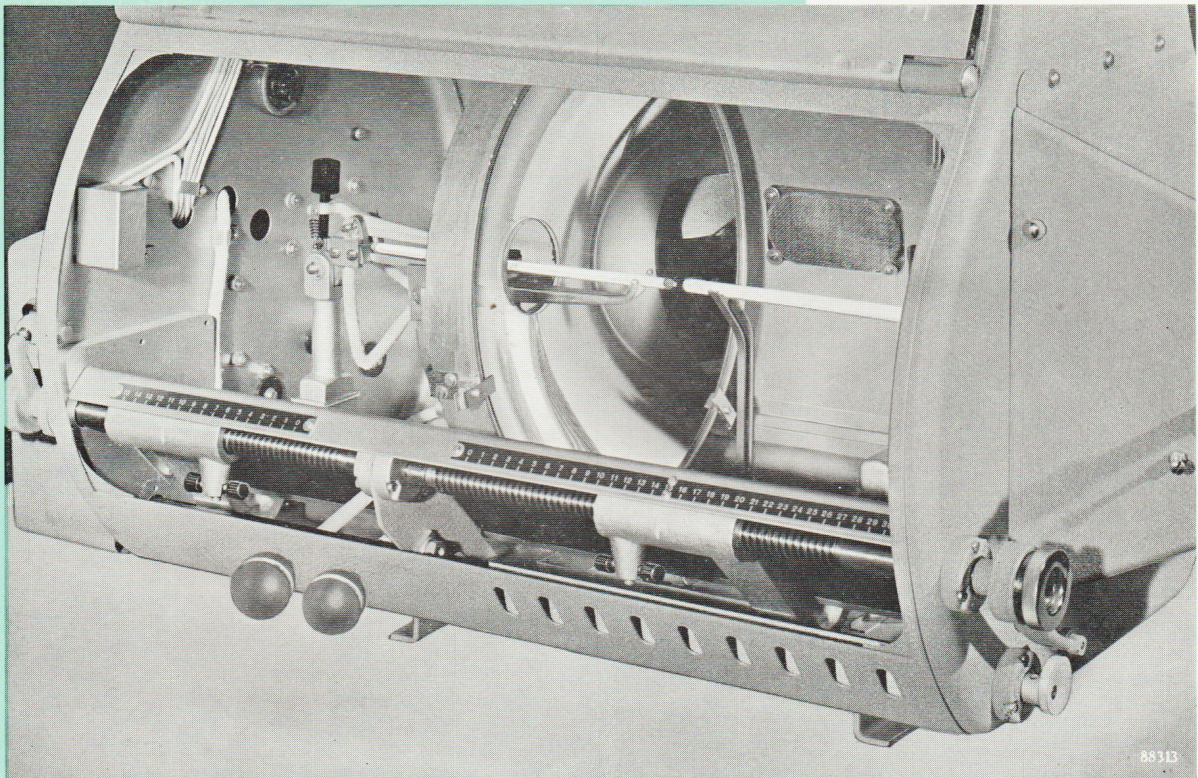
The rate of carbon feed can be adjusted very accurately, that of the positive carbon by adjusting the motor speed by means of a rheostat, that of the negative carbon with the aid of a micrometer screw which controls the stroke of an eccentric.

Two milled knobs provided at the operating side of the lamphouse, to the left and to the right, allow exact adjustment of the positive and the negative carbon for obtaining the correct arc length and crater position.

An electromagnetic arc stabiliser guarantees a steady arc of correct shape, resulting in a constant and high light output and uniform light distribution.



Eccentric with micrometer screw.



Interior view of type EL 4455 arc lamp.

A dowser placed between the arc gap and the reflector protects the latter when the arc is struck. The dowser is coupled with the light cut-off and hence it is automatically turned away when the latter is opened.

The arc is struck by moving the negative carbon forward and returning it to the correct burning position by means of its adjusting knob. As soon as the current passes through the arc the carbon-feed motor is switched on automatically by means of a relay; this dispenses with the use of a motor switch.

The quick-release carbon holders ensure rapid recarboning.

The knobs for adjusting the reflector are situated at the operating side of the projector, so that during the adjustment the projectionist can check the light distribution on the screen. The knobs for adjusting the negative carbon are situated at the back, so that errors are precluded.

The interior is illuminated by a lamp.

Consumption scales are provided both for the positive and for the negative carbon, so that the available carbon length can easily be read.

The door at the operating side is fitted with an arc imager and each of the doors is provided with a coloured heat-resistant viewing glass.

On request, the lamphouse can also be supplied with an ammeter (0-100 A) mounted at the rear. The mounting tables of types EL 4050 and EL 4051 projector stands are already provided with such an ammeter.

EASY
OPERATION

SIMPLE
SUPERVISION

The interior can be cleaned quite easily; it is accessible from both sides through large doors which open wide and are automatically kept open. The ashtray underneath the arc gap is of ample size and catches all the drippings from the carbons.

The lamphouse is excellently ventilated and the fumes developed are carried off through a flue equipped with an adjustable vent.

In most cases this arc lamp will be run at a current of 60 to 70 A, though it is also suitable for H.I. carbons of lower or higher amperage.

The feed rate can be regulated within very ample limits up to $17\frac{3}{4}$ " (450 mm) per hour both for the positive and the negative carbon.

The arc lamp is suitable for positive carbons with a maximum length of 20" (530 mm) — for slide projection 12" (300 mm) — $11\frac{3}{8}$ " (290 mm) of which can be consumed without re-fixing the carbon. For the negative carbon these values are $17\frac{3}{8}$ " (440 mm) and 6" (155 mm) respectively.

The lamphouse can be supplied with a slide attachment; the lens holder with slide-projection lens is mounted on the projector.

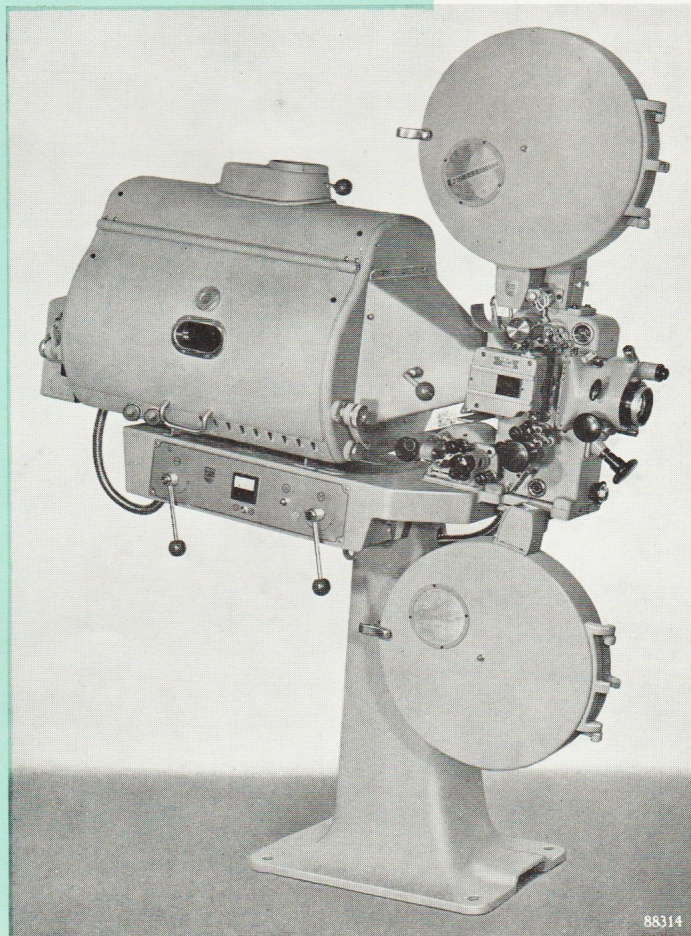
For slide projection a metal mirror is turned into the light beam which is then cast on to the lantern slide via a negative lens, a second mirror and a condenser lens, thus ensuring uniform illumination.

The slide attachment is suitable for slides of $3\frac{1}{4}$ " x $3\frac{1}{4}$ " (85 x 85 mm) or $3\frac{1}{4}$ " x 4" (85 x 100 mm).

EASY
MAINTENANCE

VARIOUS
CARBON TRIMS

SLIDE
ATTACHMENT



*Type EL 4455 arc lamp
used with the FP 56 projector.*

88314

TECHNICAL DATA

Type numbers and weights:

Description	Type number	Net weight	
		lbs	kg
55-85 A high-intensity arc lamp, without slide attachment, with 14" (356 mm) reflector, protecting glass and ammeter..	EL 4455/23	151	68.5
Same as type EL 4455/23, but without ammeter	EL 4455/21	148	67
Same as type EL 4455/23, but with slide attachment of 3 1/4" x 3 1/4" (85 x 85 mm)	EL 4455/33	170	77.5
Same as type EL 4455/21, but with slide attachment of 3 1/4" x 3 1/4" (85 x 85 mm)	EL 4455/31	167.5	76
Same as type EL 4455/23, but with slide attachment of 3 1/4" x 4" (85 x 100 mm)	EL 4455/43	170	77.5
Same as type EL 4455/21, but with slide attachment of 3 1/4" x 4" (85 x 100 mm)	EL 4455/41	167.5	76
Reflector: 14" (356 mm) f ₁ = 5 5/32" (131 mm) f ₂ = 32" (813 mm)	8594/60	1.6	0.75
Protecting glass for 14" mirror.....	8598/60	1.2	0.55

Carbon feed:

Description	Positive carbon		Negative carbon	
	in.	mm	in.	mm
Maximum length: for film projection	20	530	17 3/8	440
for slide projection.....	12	300	17 3/8	440
Length that can be consumed without re-fixing	11 3/8	290	6	155
Speed per hour adjustable up to	17 3/4	450	17 3/4	450

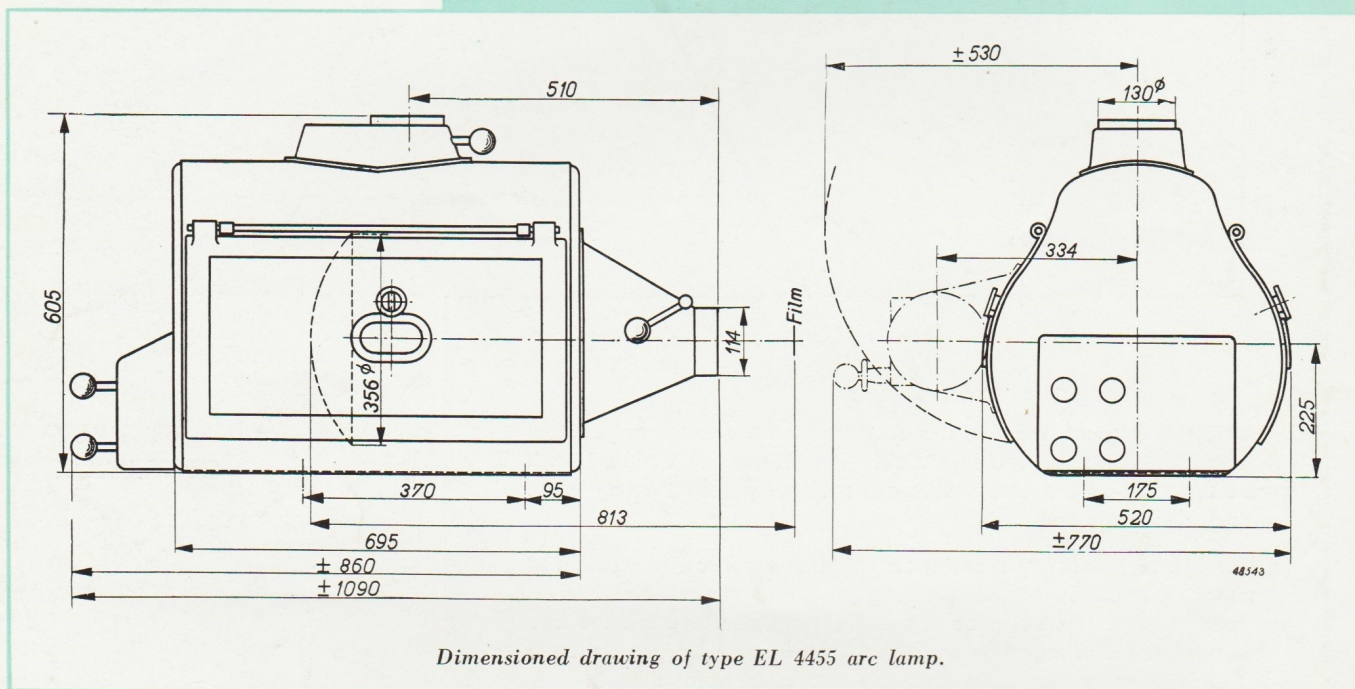
Carbon trims:

Current intensity	Diameter		Burning speed per hour	
	pos.	neg.	pos.	neg.
55 A	8 mm	7 mm	8 1/2" 220 mm	3 1/2" 85 mm
60 A	8 mm	7 mm	11 1/2" 295 mm	3 3/4" 95 mm
65 A	8 mm	7 mm	14 1/2" 365 mm	4 1/4" 105 mm
70 A	9 mm	7 mm	11 1/4" 285 mm	4 1/2" 115 mm
75 A	9 mm	7 mm	14 1/4" 360 mm	5" 125 mm
80 A	9 mm	7.5 mm	17 3/4" 450 mm	5 1/2" 140 mm

These values are for guidance only, each make of carbon showing slightly different characteristics.

Picture area for normal 1:1.37 and CinemaScope projection:

Current intensity	Matt white screens				Metallized screens			
	Very good brightness		Adequate brightness		Very good brightness		Adequate brightness	
	sq. ft.	sq. m.	sq. ft.	sq. m.	sq. ft.	sq. m.	sq. ft.	sq. m.
60 A	520	48	800	75	1100	100	1600	150
75 A	700	65	1100	100	1400	130	2150	200



Inch equivalents:

in.	mm	in.	mm
42 ⁷ / ₈	1090	14 ⁵ / ₈	370
33 ⁷ / ₈	860	14	356
32	813	13 ¹ / ₈	334
30 ³ / ₈	770	8 ⁷ / ₈	225
27 ³ / ₈	695	6 ⁷ / ₈	175
23 ³ / ₄	605	5 ¹ / ₈	130
20 ⁷ / ₈	530	4 ¹ / ₂	114
20 ¹ / ₂	520	3 ³ / ₄	95
20 ¹ / ₈	510		

