



COLOUR CORRECTED

BLOOMED

PROJECTION LENS

(Kershaw Process, Patent Pending)

TYPE "S"

CONSTANT F/VALUE

THE introduction of the Kalee Type "S" Projection Lenses is the result of intensive research, and constitutes the highest achievement in the science of optical design and the transmission of light for cinematograph projection.

The most highly trained brains and labour have been combined to bring these projection lenses as near as possible to perfection. The optical units have been computed by mathematicians, the anti-reflection surface treatment of the lenses has been carried out by scientists under controlled laboratory conditions, and the instruments have been made throughout by craftsmen.

The Kalee type "S" lenses will give maximum possible screen brightness, perfect image contrast and most important of all, true colour rendering, *provided* that you will observe the following simple instructions on the care and maintenance of these valuable instruments.

1. *Always replace the caps on the lens cells immediately after the show. This simple precaution will keep abrasive dust and condensation away from the lens surfaces.*
2. *Always remove dust and fine particles from the lens surfaces with a fine camel hair brush; remove grease with a piece of fine clean linen moistened with Methylated Spirit, and finish by polishing with a clean dry chamois leather, or with a piece of clean soft linen—a well laundered handkerchief is eminently suitable for this purpose.*
3. *NEVER dismantle the projection lens. The inside surfaces of the lenses have been specially and accurately coated with refractive material a few millionths of an inch thick, and any attempt to touch these surfaces will be disastrous.*
4. *Do not focus the projection lens by revolving it in the lens holder—use the focusing adjustments provided on your projector mechanism.*
5. *Be sure that the lens is optically central with the gate. In the case of Kalee projectors, all mechanisms leave the factory with lens holders accurately centred to the gate, and your Kalee service engineer, will on request, adjust the lens holder centrally if required. Do not, on any account, attempt to centre the picture on the screen by de-centring the lens relative to the gate. This will result in the picture being “off focus” on one side of the screen, due to misalignment of the optical axis relative to the screen.*

BLOOMED LENSES

A brief technical explanation of the Kershaw Colour Corrected Blooming Process for Projection Lenses

IT is a well-known optical phenomenon that under normal conditions, a loss of over 5% of light occurs on passing through on air-to-glass surface. "Blooming" of the lens surface eliminates most of this loss, and restores the light to the projected beam. A projection lens containing four to six air-to-glass surfaces must fail to transmit a considerable proportion of the light it receives from the Arclamp via the gate. "Blooming," therefore, has two obvious advantages:—

1. *The image or screen is brighter due to increased transmission of light.*
2. *Contrast and definition are improved owing to the almost complete elimination of stray light reflected to and fro between the various lens surfaces.*

Experiments have proved that, normally, this advantage can only be secured at the cost of affecting the colour of the light. This is readily seen by examining a bloomed surface by reflected daylight; it appears purple instead of white. In a similar way, if a first-class Arclamp and screen, both in perfect working condition, are employed, it will be seen that an ordinary "bloomed" lens provides a brighter screen, but of pale yellow colour, which is frequently associated with the use of poor carbons or the result of dirty lens surfaces or screen, etc.

Kershaw "colour corrected" blooming is an invention from the Kershaw research laboratories and is a modification of the normal process designed to overcome this disadvantage. The composition of the transmitted light is carefully adjusted so

that the screen appears a brilliant white, while preserving all the other advantages of ordinary blooming.

It is easy to recognise a Kalee colour corrected lens. Examine it by reflected light, the lens surfaces appear straw coloured—distinct from the purple of ordinary bloomed lenses. Remember, the straw coloured lens guarantees a brilliant white screen.

G.B.-Kalee service depots are staffed by competent engineers, anxious and ready to assist you to enjoy 100% satisfaction and efficiency from our all-British Kalee equipment.



Your service depots are :

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BELFAST: 43, Donegall Street	Tel. 27065
BIRMINGHAM: 57, John Bright Street	Tel. Midland 2351
CARDIFF: 9, Park Lane	Tel. 7676
DUBLIN: 30, Lower Abbey Street	Tel. 75059
GLASGOW: 211, Hope Street	Tel. Douglas 0601/2
LEEDS: 17, Wellington Street	Tel. 20597/8
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PROJECTION TABLE FOR CINEMATOGRAPH LENSES

SHOWING WIDTH OF SCREEN PICTURE AT DIFFERENT DISTANCES WITH LENSES OF DIFFERENT FOCAL LENGTHS
 "TALKIE" MASK APERTURE 0.825 in. WIDE.

Distance Lens to Screen. Feet.	FOCUS OF LENS IN INCHES															Width of Picture		
	3 in.	3 1/4 in.	3 1/2 in.	3 3/4 in.	4 in.	4 1/4 in.	4 1/2 in.	4 3/4 in.	5 in.	5 1/4 in.	5 1/2 in.	5 3/4 in.	6 in.	6 1/4 in.	6 1/2 in.		6 3/4 in.	7 in.
20	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
25	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
30	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
35	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
40	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
45	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
50	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
55	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
60	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
65	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
70	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
75	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
80	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
85	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
90	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
95	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
100	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
105	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
110	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
115	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26	26
120	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
125	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
130	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
135	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
140	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
145	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
150	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33

The height of the picture is approximately 3/4 the width.

BLOOMED LENSES

A brief technical explanation of the Kerbow Color Corrected
Bloomed System for projection lenses.

It is a well known fact that when a lens is used under conditions of over 35% of light rays or passing through an air-to-glass surface, a portion of the light is reflected back. A projection lens containing four to six air-to-glass surfaces must therefore reflect a considerable proportion of the light it receives. This reflection is the "bloom" or "bleed-through" effect which is commonly known as "bloomed" lenses.

The image or color of the object being projected is therefore
less distinct and less brilliant.

2. Contrast and definition are improved owing to the
elimination of the reflection of light which is reflected
back into the lens.

Experiments have proved that normally the advantage can
only be secured at the cost of increasing the color of the light.
This is readily seen by examining a standard screen by
a direct light source. The light is reflected back into the
screen and a bright spot is formed. When the light is
reflected back into the screen and screen, both in perfect
working condition, are employed, it will be seen that an
ordinary "bloomed" lens provides a sharper screen, but of
this yellow color, which is the result of the reflection of light
of poor colors or the result of the reflection of light.

The Kerbow Color Corrected Bloomed System is an invention from
the Kerbow Research Laboratory and is a modification of the
normal process of blooming to overcome the disadvantage. The
composition of the transmitted light is carefully adjusted so