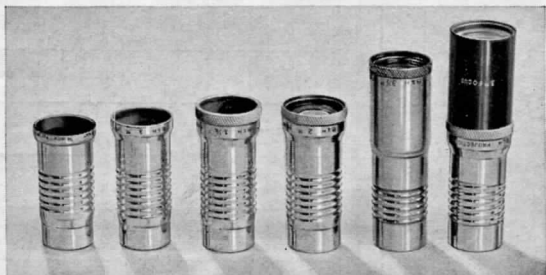


# Filmo Projection Lenses and their use



B & H Projection Lenses range in focal length from  $\frac{5}{8}$ -inch to 4-inch

ONE of the important features of the Filmo Projector is the instant interchangeability of projection lenses. By projecting through a lens of the proper focal length practically any desired picture size may be obtained without moving the projector and screen from the most suitable and convenient positions in the room.

The accompanying chart indicates the sizes of pictures secured at various distances with the eight different focal lengths offered in Filmo projection lenses. The appearance of blank squares on this chart indicates the approximate distance limitation of each lens.

### *The shorter lenses*

THE 8 mm. projection lens of  $\frac{3}{4}$ -inch focal length and the 16 mm. lenses of 1- and  $1\frac{1}{2}$ -inch focal lengths are designed primarily for use when the projector and the screen cannot be placed far enough apart to give a picture of the desired size with the standard lens supplied with

*Projected Picture Sizes obtained with  
Fimo Projection Lenses*

Lens Focal Length		Distance in Feet From Screen															
		8'	10'	12'	16'	20'	25'	32'	36'	40'	50'	64'	75'	100'	125'	150'	
On 8 mm. Projector	16 mm. Projector	WIDTH OF PICTURE															
			$\frac{5}{8}$ "	4'10"	6'0"	7'2"	9'7"	12'0"	.....	.....	.....	.....	.....	.....	.....	.....	.....
	$\frac{3}{4}$ "	4'0"	5'0"	6'0"	8'0"	10'0"	12'6"	.....	.....	.....	.....	.....	.....	.....	.....	.....	
	1"	3'0"	3'9"	4'6"	6'0"	7'6"	9'4"	11'11"	13'5"	14'11"	.....	.....	.....	.....	.....	.....	
	$\frac{3}{4}$ "	1 $\frac{1}{2}$ "	2'0"	2'6"	3'0"	4'0"	5'0"	6'3"	8'0"	9'0"	10'0"	12'6"	.....	.....	.....	.....	
	1"	2"	1'6"	1'10"	2'3"	3'0"	3'9"	4'8"	6'0"	6'9"	7'5"	9'4"	11'11"	14'0"	18'9"	23'5"	28'1"
		2 $\frac{1}{2}$ "	1'2"	1'6"	1'9"	2'4"	3'0"	3'9"	4'9"	5'4"	6'0"	7'6"	9'7"	11'3"	15'0"	19'8"	22'5"
	1 $\frac{1}{2}$ "	3"	.....	1'3"	1'6"	2'0"	2'6"	3'1"	4'0"	4'6"	5'0"	6'3"	8'0"	9'4"	12'6"	15'7"	18'8"
		3 $\frac{1}{2}$ "	.....	1'0"	1'3"	1'8"	2'1"	2'8"	3'5"	3'10"	4'3"	5'4"	6'11"	8'0"	10'8"	13'4"	16'0"
		4"	.....	.....	1'1"	1'6"	1'10"	2'4"	3'0"	3'3"	3'9"	4'8"	6'0"	7'0"	9'4"	11'8"	14'0"

the projector (a 1-inch lens on the 8 mm. machines, and a 2-inch lens on the 16 mm. machines). The  $\frac{5}{8}$ -inch F 2.14 and  $\frac{3}{4}$ -inch F 3.0 lenses are especially suited to 16 mm. projectors equipped with the Continuous Attachment and used for such commercial purposes as counter and window display, hotel, theater and bank lobby projection, and in booths at conventions. Illumination, sharpness of definition, and flatness of field are exceptionally good for lenses of such short focal lengths. The 1-inch F 2.46 lens is also good for the same purpose.

### *The two- and two and one-half-inch lenses*

THE 16 mm. 2-inch and 2½-inch projection lenses (particularly the 2-inch lens), and the 8 mm. 1-inch, are ideal for average home use and should always be employed in preference to shorter lenses when the screen and projector can be placed far enough apart to provide a picture of the desired size. For information relating to the proper size of projected pictures, see the discussion of this subject on the next page.

### *The longer focus lenses*

THE longer focal length lenses, including the 16 mm. 3-, 3½-, and 4-inch models and the 8 mm. 1½-inch lens, should be used where the "throw" (distance from projector to screen) is longer than that usually found in the home—greater than 50 feet, to be specific. As the loss of light increases with the distance, it is best, whenever possible, to place the projector close enough to the screen so that the picture projected through the 16 mm. 2- or 2½-inch lens, or the 8 mm. 1-inch lens, will fill the screen space. But when the distance cannot be so regulated, select the 16 mm. 3-, 3½- or 4-inch lens, or an 8 mm. 1½-inch lens, whichever is needed to cover the screen area properly. For instance, in a 100-foot room a 2-inch lens at 50 feet will give the same size picture on the screen as the 4-inch lens at 100 feet. The picture brilliancy will be greater in the first instance, but if the projector *must* be placed at the rear of the room (on a balcony or in a booth, for instance) the results from the 4-inch lens will prove satisfactory.



*B & H 4-inch F 2.8, 3½-inch F 2.7, and 3-inch F 2.3 Projection Lenses  
These are especially fine lenses for long throws where maximum picture  
brilliance is desired*

In cases where maximum illumination is desired in spite of a long throw, it is recommended that the B & H Incre-Lite 16 mm. 3-inch F 2.3, 3½-inch F 2.7, or 4-inch F 2.8 projection lens be used, preferably with the highest powered Filmo Projector model. These lenses, with their large front elements, pass more than twice as much light as the 3-inch F 3.3, 3½-inch F 3.5, and 4-inch F 4.5 lenses.

### *The correct picture size*

**A** VERY important factor contributing to best projection results is the securing of a correct size image on the screen. The screened picture should be neither too small nor too large to be seen comfortably and without eye strain.

The 16 mm. two-inch lens and the 8 mm. one-inch lens yield a picture of the best size for an audience located near the projector. From this it will be seen that the picture sizes

given in the fifth line on page 2, covering these lenses, are a good guide to the proper picture size. It is always best to consider first those who are seated farthest from the screen because it is easier for those who are close by to watch a picture that is somewhat too large, screen distance considered, than for those farther away to see an image that is too small.

Hence, if thirty-two feet is the greatest distance between spectator and screen, a picture approximately 6 feet wide should be shown.

### *Proper placing of the screen*

The projection screen should be placed so that the edge of the picture is just above the eye level of the audience. This will give unobstructed vision to those in the rear. Place the projector on something substantial, and with the projection lens well above the heads of the audience so that the ordinary movements of seated persons will not bring their heads into the projector light beam. Since an audience should be seated as nearly in front of the screen as possible, avoiding angle views from either side, it is better to raise the projector above the heads of the audience than to have it so low that an aisle must be left open from screen to projector.

### *Care and adjustment of lenses*

Projection lenses should always be kept scrupulously clean and free from dirt and oil. For cleaning use the B & H Lens Cleaning Kit, which may be had from your Filmo dealer, and which is also ideal for cleaning camera lenses.

Each time the Filmo Projector is set up for use, the lens should be focused by turning it to the left or right as necessary to produce maximum sharpness of the pictures on the screen. If the lens is focused with a "still" picture, be sure to re-focus after the film is in motion.

## Lenses for Filmo Projectors

Focal Length	Working Aperture	Name	Code
$\frac{5}{8}$ -inch	F 2.14	B & H	PANWA
$\frac{3}{4}$ -inch	F 3.0	B & H	PLACB
1 -inch	F 2.46	B & H	PLAMA
$1\frac{1}{2}$ -inch	F 1.8	B & H	PLAKS
2 -inch	F 2.0	Great Lite	PLAJG
2 -inch	F 2.1	Extra-Lite	PLATA
*2 -inch	F 1.6	B & H Incre-Lite	PALAE
$2\frac{1}{2}$ -inch	F 1.9	Extra-Lite	PLATB
3 -inch	F 3.3	B & H	PLAJA
3 -inch	F 2.9	Extra-Lite	PLATC
3 -inch	F 2.3	B & H Incre-Lite	PYABL
$3\frac{1}{2}$ -inch	F 3.5	B & H	PLAPO
$3\frac{1}{2}$ -inch	F 2.7	B & H Incre-Lite	PYACO
4 -inch	F 4.25	B & H	PLAFU
4 -inch	F 2.8	B & H Incre-Lite	PYADU

\*For those Filmo 16 mm. Projector models which have the large ( $1\frac{1}{32}$ -inch inside diameter) lens carrier. Cannot be used in models having the smaller (1-inch inside diameter) lens carrier.

## For Filmo 8 mm. Projectors

$\frac{3}{4}$ -inch	F 1.8	B & H	TOLPY
†1 -inch	F 1.6	B & H	TATAN
$1\frac{1}{2}$ -inch	F 2	B & H	TATSO

†Standard equipment with Filmo 8 mm. Projector.

### *Lens Adapter*

When ordering an extra projection lens, specify the serial number of the projector in which the lens is to be used. If the projector has the large lens carrier, a lens adapter will be supplied with the lens at no extra cost.

## BELL & HOWELL COMPANY

1801-15 Larchmont Ave., Chicago, Ill.  
New York, Hollywood, London (B & H Co., Ltd.)

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