



ES-CINELUX ANAMORPHIC 2x

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This anamorphic lens is designed as an integral component of the ES-Cinelux Anamorphic lenses (on pages 18 and 19), but can also be subsequently attached to the Super-Cinelux 35 lenses from 42.5 to 100 mm focal length for 35 mm film as required to obtain a horizontal widening of the projecting image by a factor of 2 to show wide-screen films.

The table on page 24 shows which adapter is needed for the connection of the ES-Cinelux Anamorphic 2x.



CINELUX M65

Cinelux M65 (WA/Tele Vario Conversion Lens)

This multi-function converter with variably adjustable magnification can be used either as a wide-angle or a tele converter (you reverse it to change function).

As a wide-angle converter 0.63x to 0.70x it creates a wide-angle combination. For example, with a 65 mm base lens a wide-angle lens combination is created with steplessly selectable focal length between 40.2 and 45.6 mm. This lens combination has a longer mechanical length than standard wide-angle lenses. This increased mechanical length can be used to solve problems of vignetting by an obstacle.

As a tele converter 1.4x to 1.65x it serves to obtain longer focal length than the maximum 180 mm of the standard lenses for long projection distances, e.g. with a 140 mm lens a steplessly selectable focal length of 201.8 to 225.8 mm can be achieved.

The table on page 24 shows which projection lenses can be combined with the Cinelux M65, whether an adapter is needed, and if so which one.



EXTENSION

Extension

This lens attachment transposes the exit pupil of the lens toward the front thanks to its additional glass distance without having even the slightest negative effect on the imaging. It is used with lenses which have a short focal length and which are needed with a very large screen with only a short projection distance. The Extension avoids partial vignetting of the wide image which can e.g. be caused by parts of the projector which extend into the beam path, parts of other lenses in the same lens revolver or by too narrow a window.

There are three different Extension versions for the Super-Cinelux 35 lenses: SK 4026 for focal length 24 mm; SK 4027 for focal length 26 mm; and SK 4031 for focal lengths from 28 to 50 mm.

No adapter is required to connect the Extension.

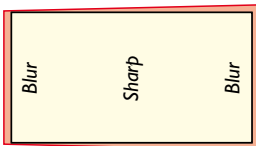
Keystone Corrector



Correction:



The projector is higher than the screen center; the lens must be shifted down.



Correction:



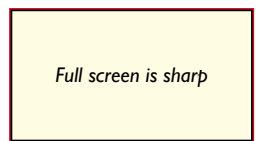
The projector is to the left of the screen center; the lens must be shifted to the right.



Correction:



The projector is higher and too far left; the lens must be shifted down and to the right.



The Keystone Corrector produces a non-distorted image without aberrant lines or image loss and with the best focus over the whole screen despite an asymmetric projector position. After the shift, the lamp position must be changed for a uniform illumination.

The Keystone Corrector allows trapezoidal distortion to be eliminated in projectors with a 4" lens mount; this distortion occurs when the projection does not take place at right angles to the screen, e.g. with oblique downward projection. It is used for cinema lenses with a tube diameter of 70.65 mm in place of the 4" adapter. It cannot be used in projectors with lens revolvers.

If the projector is not central with respect to the screen, but has a lateral offset, (additional) distortion occurs with a larger image height on the screen side further away from the projector; there is also a visible loss of focus on both sides if the lens has been focused to the center of the screen. This error can also be eliminated using the Keystone Corrector; it only has to be installed rotated such that the lens does not move down in a perpendicular manner when shifted, but obliquely in the direction toward the further distant side of the screen. The equalization performed with the Keystone Corrector does not only ensure that plunging lines and the horizontal axes diverging toward the further distant screen side again extend precisely perpendicular or horizontally, but also provides a very uniform focus over the whole screen format. The Schneider software "Theater Design Pro" (see page 26) can calculate the required shift from the projector position with respect to the screen and the focal length of the lens.



Keystone Corrector with anamorphic lens



Cause and elimination of trapezoidal distortion

The rectangular film image will only likewise appear rectangular on the screen if the axis of the cinema lens is aligned at a right angle to the screen plane. In many movie theaters with steep-rising rows of seats, the projector is, however, a lot higher than the center of the screen so that the projection is carried out obliquely downwardly. This results in "plunging lines" inclined obliquely inwardly at the left hand and right hand margins and a trapezoidal distortion of the image (wider at the bottom than at the top) when the screen is approximately perpendicular.

The problem is eliminated when the projector is aligned (approximately) horizontally and the image, which is then projected at too high a level for the screen, is lowered by shifting the lens down until the image is correct on the screen.

With an oblique projection, it is not only the "plunging lines" which are irritating with trapezoidal distortion of the image, but the greater image height also means a loss of a triangular image section at the left hand and right hand margins and of a small strip at the top and/or bottom (see opposite).



Trapezoidal distortion (projector a little to the left and too high); red margin is off the screen.



Image after correction with Keystone Corrector.