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ARRI



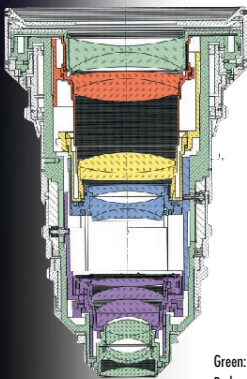
CARL ZEISS/ARRIFLEX VARIABLE PRIMES



A complete lens system has been created in conjunction with Carl Zeiss: Variable Primes offer excellent quality in sharpness, contrast, free from distortion and vignetting - even compared with fixed focal length lenses, which they surpass in many areas.

With just three high-speed lenses (T 2.2) a range of focal lengths from 16 to 105 mm is covered. Time-consuming, lens changes are no longer necessary. That leaves more time for image composition, which can be achieved faster, more easily and with greater flexibility. Existing lens accessories can of course still be used. The Variable Prime lens system comprises the focal lengths

16-30 mm – **VP 1** · 29-60 mm – **VP 2** · 55-105 mm – **VP 3**.



Green: Fixed
Red and Yellow: Focus
Blue and Violet: Focus Length

VARIABLE PRIMES

Fast Speeds Over the entire focal length range of 16 mm to 105 mm the Variable Primes have a constant aperture of T 2.2. This is achieved by means of a special iris control which changes the position as well as the opening of the iris while adjusting focal length.

Exact Choice of Focal Lengths In changing focal length, just two lens groups are moved axially on the Variable Primes. The complex groups, which are made up of three to seven lenses, allow a solid and robust socket design. To further increase the precision of the moveable socket points, brass was used on critical areas. The rugged mechanical design, corrosion-resistant materials and strict manufacturing controls ensure continuous image stability and constant torque - even after years of use.

ARRI
VP 1



Excellent Optical Qualities The high performance level of the Variable Primes is attained due to a complex optical and mechanical design. They are manufactured within extremely tight tolerances, and this together with specialised collimation processes leads to the high standard of performance. To achieve the image quality of the Variable Primes, lenses and optical glass of extremely high quality with regard to refractive index and colour dispersion were used. On the VP1 and VP2 an aspherical lens ensures that image sharpness is maintained over the entire focal length range. On the longer focal length VP3 this was possible even without the aspherical lens.

- A complete lens system

Inner Focusing All Variable Primes allow inner focusing. Only one or two lens groups inside the lens are moved. So the overall lens length remains constant and matte boxes can be used without problem. The scales for shutter, focus and focal length, which have large numbers and can be read horizontally on both sides, offer high user comfort.



ARRI
VP 2

Zeiss-T*-Non-Reflective Coating On all Variable Primes the most modern technology in anti-reflective multi-coating was used. The Zeiss-T* reflection reducing coating minimises stray light and leads to an image quality with high contrast and extremely low reflection at high speed. The neutral reproduction of colour ensures a constant colour character when lenses are changed.



ARRI
VP 3

- and its Outstanding Perf

- superior image quality
- full Super 35 coverage
- high light transmission T 2.2
- internal focusing mechanism
- integrated gears for use with LCS
- large scales, horizontally readable from both sides in m or ft
- square front mask to prevent reflections and stray light
- time-saving through immediate adjustment of the viewing angle

The Diagrams Opposite give an impression of the image quality attained.

The modulation transfer for 20 line pairs/mm is shown over the image height with an open iris ($k=2$) and closed ($k=4$). The curves for the tangential direction are constant, those for the sagittal plane are intermittent.

In the lower curves the modulation transfer is plotted for different focal length settings for each of the three Variable Primes.

The corresponding curves for the well-known Carl Zeiss standard lenses are shown above for those focal lengths which are covered by the individual VPs. It is evident that the same performance as the fixed focal lengths is not only achieved but in some cases clearly surpassed.

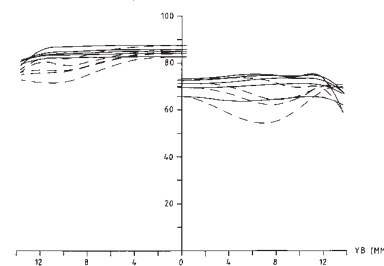
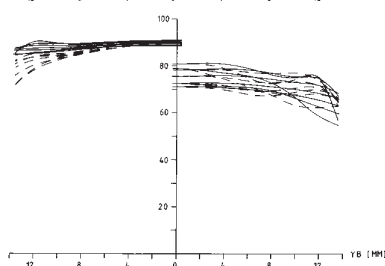
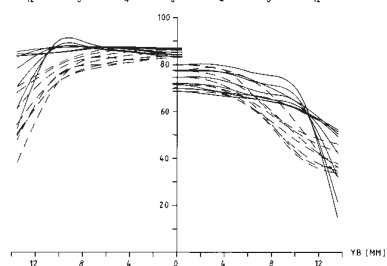
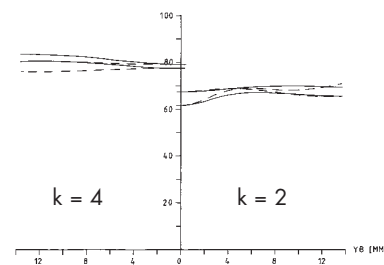
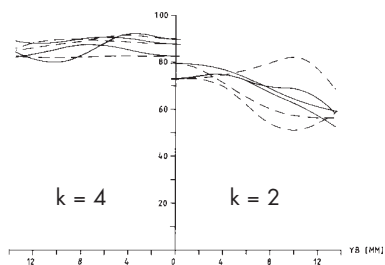
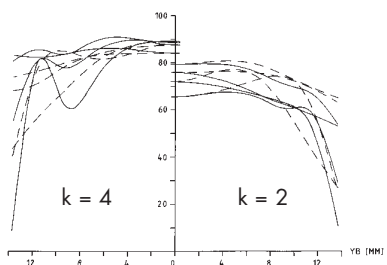


Performance

VP 1

VP 2

VP 3



Technical Data	Variable Prime VP 1 T 2.2	Variable Prime VP 2 T 2.2	Variable Prime VP 3 T 2.2
Focal length	16 - 30 mm continuously adjustable with locking positions at	29 - 60 mm continuously adjustable with locking positions at	55 - 105 mm continuously adjustable with locking positions at
Engraved focal lengths	16, 18, 20, 22, 24, 26, 28, 30 mm	29, 35, 40, 45, 50, 55, 60 mm	5, 65, 75, 85, 105 mm
Opening ratio	F:2, T2.2	F:2, T2.2	F:2, T2.2
Number of lenses	16	16	18
Number of groups	14	12	11
	1 aspherical element	1 aspherical element	
Film format	35 mm	35 mm	35 mm
Horizontal image angle			
Image format 18x24 mm	$f = 16 - 73.3^\circ \cdot f = 30 - 43.6^\circ$	$f = 29 - 45.0^\circ \cdot f = 60 - 22.6^\circ$	$f = 55 - 24.6^\circ \cdot f = 105 - 13.0^\circ$
Image format 16x22 mm	$f = 16 - 69.0^\circ \cdot f = 30 - 40.3^\circ$	$f = 29 - 41.5^\circ \cdot f = 60 - 20.8^\circ$	$f = 55 - 22.6^\circ \cdot f = 105 - 12.0^\circ$
Shutter scale	2.2, 2.8, 4, 5.6, 8, 11, 16, 22 and closed	2.2, 2.8, 4, 5.6, 8, 11, 16, 22 and closed	2.2, 2.8, 4, 5.6, 8, 11, 16, 22 and closed
Minimum focusing distance	$\infty - 0.6 \text{ m} / 2 \text{ ft}$	$\infty - 0.8 \text{ m} / 2^{3/4} \text{ ft}$	$\infty - 0.8 \text{ m} / 2^{3/4} \text{ ft}$
Front diameter	150 mm	150 mm	150 mm
Length from lens mounting flange	171 mm	242 mm	209 mm
Lens mount	PL-Mount	PL-Mount	PL-Mount
Weight	4.4 kg	6.5 kg	5.6 kg