

## Technical Data: Carl Zeiss DigiPrime® Lenses

| DigiPrime® Lens |        | Close Focus Limit (ref: film plane) |        | Length | Front Diameter |     | Weight |              | Number of Elements | Number of Groups | MTF Value for 56 lp/mm for Infinity GN Channel | Image Angle 4:3 |       |        | Image Angle 16:9 |       |       | Focus Angular Rotation | Equivalent Super 35 Zeiss ULTRA PRIME |
|-----------------|--------|-------------------------------------|--------|--------|----------------|-----|--------|--------------|--------------------|------------------|--|-----------------|-------|--------|------------------|-------|-------|------------------------|---------------------------------------|
| Focal Length mm | T Stop | Type                                | Meters | Inches | mm             | mm  | Grams  | Pounds       |                    |                  |  | Hor.            | Vert. | Dia.   | Hor.             | Vert. | Dia.  |                        |                                       |
| 3.9             | 1.9    | Distagon 1.7                        | 0.5    | 20"    | 203            | 117 | 1890   | 4 lbs. 3oz.  | 23                 | 16               | > 90%  | 96.9°           | 80.5° | 109.3° | 101.8°           | 69.3° | 69.3° | 323°                   | 10                                    |
| 5               | 1.9    | Distagon 1.7                        | 0.5    | 20"    | 164            | 95  | 1380   | 3 lbs.       | 19                 | 13               | > 90%  | 82.0°           | 66.0° | 94.2°  | 87°              | 55.8° | 94.2° | 294°                   | 12                                    |
| 7               | 1.6    | Distagon 1.5                        | 0.5    | 20"    | 164            | 95  | 1550   | 3 lbs. 6oz.  | 18                 | 14               | > 90%  | 65.0°           | 51.0° | 76.6°  | 69.6°            | 42.4° | 76.6° | 289°                   | 16                                    |
| 10              | 1.6    | Distagon 1.5                        | 0.5    | 20"    | 164            | 95  | 1510   | 3 lbs. 5oz.  | 17                 | 13               | > 90%  | 48.0°           | 37.0° | 58.0°  | 52.0°            | 30.6° | 58.0° | 308°                   | 24                                    |
| 14              | 1.6    | Distagon 1.5                        | 0.5    | 20"    | 164            | 95  | 1330   | 2 lbs. 15oz. | 15                 | 12               | > 90%  | 35.4°           | 26.8° | 43.4°  | 38.4°            | 22.0° | 43.4° | 285°                   | 32                                    |
| 20              | 1.6    | Distagon 1.5                        | 0.5    | 20"    | 164            | 95  | 1350   | 3 lbs.       | 15                 | 11               | > 90%  | 24.8°           | 18.8° | 30.8°  | 27.0°            | 15.4° | 30.8° | 299°                   | 50                                    |
| 28              | 1.6    | Distagon 1.5                        | 0.5    | 20"    | 164            | 95  | 1420   | 3 lbs. 2oz.  | 14                 | 10               | > 90%  | 17.8°           | 13.4° | 22.1°  | 19.4°            | 11.0° | 22.1° | 323°                   | 70                                    |
| 40              | 1.6    | Distagon 1.5                        | 0.5    | 20"    | 164            | 95  | 1440   | 3 lbs. 3oz.  | 14                 | 12               | > 90%  | 12.6°           | 9.6°  | 15.8°  | 13.8°            | 7.8°  | 15.8° | 312°                   | 100                                   |
| 70              | 1.6    | Distagon 1.5                        | 0.32   | 13"    | 194            | 95  | 1800   | 3 lbs. 15oz. | 20                 | 14               | > 90%  | 7.2°            | 5.4°  | 9.0°   | 7.8°             | 4.4°  | 9.0°  | 310°                   | 180                                   |

## Technical Data: Carl Zeiss DigiZoom® 6-24mm T1.9 Lens

| DigiPrime® Lens |        | Close Focus Limit (ref: film plane) |        | Length | Front Diameter |    | Weight |              | Number of Elements | Number of Groups | MTF Value for 56 lp/mm for Infinity GN Channel | Image Angle 4:3 at 6mm |       |       | Image Angle 16:9 at 6mm |       |       | Image Angle 4:3 at 24mm |       |       | Image Angle 16:9 at 24mm |       |       | Focus Angular Rotation |
|-----------------|--------|-------------------------------------|--------|--------|----------------|----|--------|--------------|--------------------|------------------|--|------------------------|-------|-------|-------------------------|-------|-------|-------------------------|-------|-------|--------------------------|-------|-------|------------------------|
| Focal Length mm | T Stop | Type                                | Meters | Inches | mm             | mm | Grams  | Pounds       |                    |                  |  | Hor.                   | Vert. | Dia.  | Hor.                    | Vert. | Dia.  | Hor.                    | Vert. | Dia.  | Hor.                     | Vert. | Dia.  |                        |
| 6-24            | 1.9    | Vario Sonnar 1.7                    | 0.55   | 22"    | 249            | 95 | 2750   | 6 lbs. 1 oz. | 26                 | 20               | 90%  | 73.9°                  | 58.4° | 86.7° | 78.9°                   | 49.1° | 86.7° | 20.7°                   | 15.6° | 25.6° | 22.5°                    | 12.8° | 25.6° | 330°                   |

Specifications subject to change without notice.

# Sharp Max™ Universal

## Back-Focus Alignment Device

The ZEISS Sharp Max™ Universal is the most precise field instrument ever made to adjust and align back-focus on both standard definition and high definition B4 mount lenses. With Sharp Max Universal there's no need to light a chart or move the camera. First, the lens is set to its infinity mark with the iris wide open. Next, Sharp Max Universal is held up to the front of the shooting lens and the power button is pressed. Finally, the back-focus ring is adjusted for the finest focus in the center of the internal back lit Siemens star and the back-focus ring is locked. That's it! Infinity focus is set and the focus scales are accurately calibrated.

Weighing only 2.2 lbs. (1 kg), with a size of just 83.5mm in diameter by 280mm long, the Sharp Max Universal should be part of every camera package. A set of nine adapter rings ranging from 80mm to 130mm ensure that Sharp Max Universal will work with nearly all lenses available in B4 mount.

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P O W E R E D   B Y   B A N D   P R O

# Carl Zeiss DigiPrime® Family & DigiZoom™ 6-24mm T1.9



# Carl Zeiss & Band Pro

*Band Pro, the leader in digital cinematography systems, is proud to bring the industry the finest lenses ever made.*

*Carl Zeiss delivers exceptional engineering & unsurpassed craftsmanship to the world of digital cinematography. DigiPrime® lenses were designed and manufactured to allow for the full creative and technical potential of the finest 2/3" high definition cameras. These extraordinary lenses provide unequalled*

*optical performance and precision mechanical features to satisfy the needs of the most demanding production.*

*Today's DigiPrime family offers nine focal lengths from the 3.9mm (T1.9) to the 70mm (T1.6) Close Focus.*

*Following the overwhelming success of the ZEISS DigiPrime lenses, filmmakers clamored for a zoom that would incorporate the famous Zeiss engineering, craftsmanship, feel, and performance. The new Carl Zeiss DigiZoom™ 6-24mm T1.9 is a masterful combination of elegantly proportioned design, sublime functionality, and outstanding performance. The ZEISS DigiZoom features many of the same innovative design choices that have established DigiPrime as the top name in optics for digital cinematography. Read on to discover why ZEISS DigiPrime & DigiZoom lenses are changing the way you look at digital cinematography.*



# Carl Zeiss DigiPrime® Lenses



## Introducing 3.9mm DigiWide

The new 3.9mm approximates a 10mm focal length in 35mm cine. Offering an extremely wide view and unprecedented image clarity, the 3.9mm is precision engineered to minimize geometric distortion & color fringing. Ideal for maintaining natural perspectives when working with miniatures.

## Prime Advantage

Cinematographers have long appreciated the advantages of prime lenses. Their smaller, lighter design makes them ideal for handheld camerawork. Built with fewer optical elements, primes have less glass-to-air surfaces, so images have greater clarity and brilliance and are less prone to flare and ghosting. DigiPrime® lenses have been designed to deliver pristine images that are more desirable and visually pleasing than those achieved with any other lens.

## Uniform Size & Balance

Each DigiPrime lens is housed in a common diameter barrel. Focus and iris gearing is uniformly positioned from lens to lens, so changing lenses has never been easier. Because of their uniform size and shape, motors, matteboxes and rod-mounted accessories don't need to be repositioned. Every DigiPrime lens in the family from the 70mm to the wide angle 5mm has a common 95mm front diameter. With a design that puts the center of gravity near the lens mount and keeps it there throughout the focusing range (thanks to their internal focus design), DigiPrime lenses are ideally suited to work requiring critical camera balance as with Steadicam®.

## Internal Focus Design

DigiPrime lenses employ Carl Zeiss Internal Focusing Design (IFD). With Carl Zeiss IFD, optical performance is kept at top level, center to corner, over the entire focusing range. There is no rotation of the front exterior housing. Focusing the lens moves only small lightweight lens groups within the DigiPrime lens' interior, eliminating any shift in the center of gravity. This ensures highly accurate focus and maximum image quality every time.

## Accurate & Visible Markings

The expanded DigiPrime lens barrel provides ample space to accommodate the unique calibrated focus scales. Featuring oversized, easy-to-read focus marks engraved and filled with long-life bright yellow enamel, they offer high visibility even under the very low ambient light levels found on many sets. Like state-of-the-art 35mm cine lenses, DigiPrime lenses incorporate a generously windowed focus scale system. Focus marks are easily & accurately readable from either the smart or dumb side of the lens. There is ample room for taping customized focus marks. And the iris scale is viewable from both sides of the lens.

Carl Zeiss has improved on conventional focus scales, equipping DigiPrime lenses with about 300° of barrel rotation. The expanded scales are individually calibrated for each lens to facilitate pinpoint accuracy. The standard focus ring, engraved in feet and inches, can be quickly changed to meters. The thoughtfully designed iris scales are marked in 1/3 step increments to best accommodate the tight exposure tolerances of electronic cinematography.

## Fixed Iris and Focus Gears

The geared rings on DigiPrime lenses are positioned uniformly across the set. Focus and iris scales are arranged in the ergonomically correct order: focus in front and iris behind, next to the camera.

Solid construction under rigid tolerances keeps the focus and iris gear positions absolutely fixed even while focusing. There is no axial travel and no play. Positioning external lens motors and encoders is simplified, so there's less wear and tear. Lens changes are simple, speedy and safe.



*Back-focus scales are clearly engraved for exact repeatability.*



New! 3.9mm (T1.9)



5mm (T1.9)



7mm (T1.6)



10mm (T1.6)

# Changing the Way You Look

## High Precision Focus

DigiPrime® lenses are designed to achieve and hold the most critical focus. The focus drive mechanism has been scrupulously engineered to eliminate backlash and play.

When focusing, the image remains perfectly centered. There is no tilt, rotation, or shift. Each DigiPrime lens is designed to be virtually free of breathing, so focusing does not influence image size. Changes in aperture have no effect on focus.

## Absolutely Precise Back-Focus

Precision back-focus is critical to properly calibrated focus scales and perfectly focused images. Which is why DigiPrime lenses were designed with a highly refined back-focus mechanism that ensures accurately maintained focus scale calibration across the entire focusing range. Back-focus scales are clearly engraved for exact repeatability. Once desired back-focus is achieved, the dependable locking feature fastens the mechanism securely in place.

## Carl Zeiss Sharp Max™

The Sharp Max™ is a compact tool, not much larger than a lens, designed to go anywhere DigiPrime lenses go. With Sharp Max, back-focus adjustment is accomplished quickly and easily at any

location. For ultra-precise back-focus adjustment, Sharp Max is mounted on the front of the shooting DigiPrime lens and the focus scale is set to infinity. Next, the back-focus ring is adjusted for best visual resolution of the Siemens star image in the monitor or viewfinder and locked. The procedure takes just seconds.

## Innovative Iris

The Carl Zeiss team collaborated on a revolutionary new iris design exclusively for DigiPrime lenses. The result is the best diaphragm system ever created for video or motion picture lenses. Free from lag, slop or backlash, the new iris utilizes nine blades to deliver circular diaphragm openings. This results in pleasing and natural-looking highlights, and detail in soft-focus areas of the image.

## Optimum Wide Open

In minimal light situations, DigiPrime lenses provide maximum creative control over depth of field. Like no other cinematography lens, the new Carl Zeiss design allows for shooting with the aperture fully open. It provides for unsurpassed contrast by minimizing flare, veiling glare and internal reflections, well below any other lens. DigiPrime lenses deliver a crisp image with accurate contrast under the most demanding front lit conditions.

## DigiPrime® Lenses



14mm (T1.6)



20mm (T1.6)



28mm (T1.6)



40mm (T1.6)



70mm (T1.6)

# at Electronic Cinematography

### Floating Element Design

While engineering their famous Ultra Prime® lenses for 35mm filmmaking, Carl Zeiss perfected the *floating element design*, whereby lens groups move precisely in relation to each other during focusing, to correct image area curvature & related optical aberrations. The DigiPrime® lens design effectively makes use of floating element groups to eliminate field and edge distortion, yielding sharp, high-resolution images across the field of view — even down to the closest focus.

### Elegant Craftsmanship & Inspired Engineering

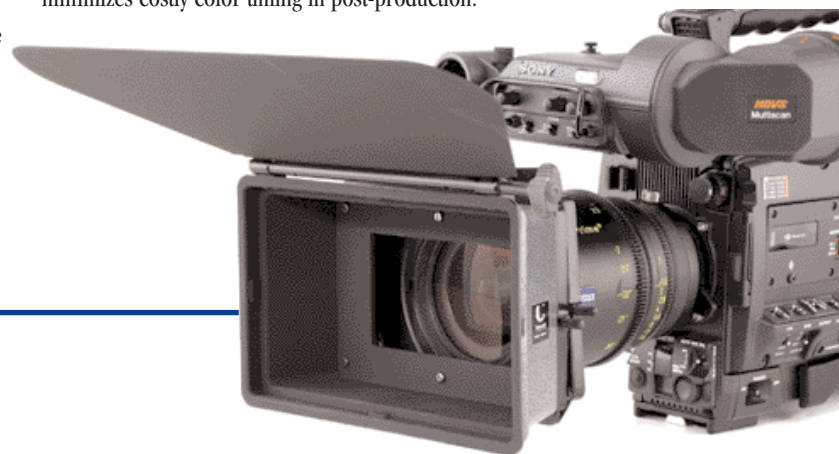
DigiPrime lenses are engineered and built at the Carl Zeiss camera lens headquarters in Oberkochen, Germany. Each lens is created through a combination of precise craftsmanship and solid construction—qualities that have established Carl Zeiss as the world leader in mechanical and optical technology. The DigiPrime lens barrel is elegant yet robust —ready to carry accessories like clamp-on shades, filters, ring lights, encoders and motors without distorting or impacting optical performance. A filter slot has been omitted in favor of a more rugged mechanical design. Scales and indices are carefully engraved for long-term accuracy and durability. Plus, smart modularity streamlines service and maintenance.

### Superior Image Contrast

Purpose built for the 2/3" CCD and beam splitting prism optical system found in current digital cinematography cameras, DigiPrime lenses exceed an amazing 90% MTF value for the rendering of 56-line pairs/mm. This translates into unsurpassed optical performance exceeding the stated performance of all other digital cinematography lenses. Additionally, the perception of sharpness is aided by the uniform contrast and brightness across the image area. DigiPrime images are pure and saturated, free of color fringing across the focus range, making them the ideal choice for the unique demands of green/blue screen work.

### Super Color Matched

Carl Zeiss selects superior quality optical glass for the best color characteristics. Then individual lens surfaces receive the Carl Zeiss proprietary T\* multiple layer anti-reflex coating, and the Carl Zeiss proprietary color matching treatment CMT is applied to ensure uniform color characteristics throughout the set. This minimizes costly color timing in post-production.



Clairmont Camera's Sony CineAlta™  
equipped with a 14mm DigiPrime® lens.



*Only the ZEISS DigiZoom™ 6-24mm T1.9 capitalizes on the legacy of the technical innovations established by Carl Zeiss DigiPrime® lenses. And this compact performer introduces significant engineering marvels of its own. It embodies a masterful combination of elegantly proportioned design, sublime functionality & outstanding performance. Plus it optimizes the potential of leading-edge 2/3" electronic cinematography cameras like no other zoom. It's no wonder Carl Zeiss DigiZoom accurately color matches and seamlessly intercuts images made with the ZEISS DigiPrime family.*

**ZEISS DigiZoom™**

[Actual Size]

# The Ultimate B4 Mount Zoom

## Small Wonder

At just 9.8" (249mm), the Carl Zeiss DigiZoom™ is surprisingly compact and lightweight. So it's sure to fit the bill for handheld, remote and Steadicam work. Featuring all the standard cine-style accouterments, and then some, the new zoom lens is equally advantageous in a studio situation, fully outfitted with cine mattebox, bridgeplate, as well as focus, zoom, and iris motors.

## Common Advantages

For easy use and optimal compatibility with cine lens accessories, the 4X optic offers industry standard pitch integral zoom, focus and iris gears and brightly-marked oversized windowed cine scales, readable from either side of the lens. Focus scales are individually calibrated to each lens for pinpoint accuracy. Like the rest of the family, the Carl Zeiss DigiZoom features a 95mm front diameter.

## Precision Back-Focus

It was DigiPrime® lenses that set a new standard for precision back-focus alignment. So it's no surprise that the new 4X zoom employs the Zeiss proprietary back-focus mechanism to ensure accurately maintained focus scale calibration across the focusing range. The zoom is fully compatible with the ZEISS Sharp Max™ Universal Back-Focus Alignment device.

## Internal Focusing Design & Close Focusing

This innovative zoom employs the Carl Zeiss Internal Focusing Design to ensure top performance—center to corner—over the entire focus and zoom range, a consistent center of gravity, minimum balance shift, and no breathing. What's more, like most Zeiss DigiPrime lenses, the 6-24mm zoom focuses to just 22" from the image plane. That's a close-focusing 11" from the front of the lens.

ZEISS DigiZoom uniquely offers the ability to focus tightly on objects as small as 66mm x 117mm. Thus, even objects as small as a business card can fill the frame in precise focus.

## 9 Blade Iris

Both ZEISS DigiZoom and DigiPrime lenses utilize the same innovative iris design for unequaled performance, free from lag, slop, or backlash.

## Low Light Friendly

The 6-24mm zoom offers numerous advantages for film-style production. Like DigiPrime lenses, the new zoom has been engineered for optimum performance in low light situations with the aperture fully open. The Carl Zeiss design provides unsurpassed contrast control by minimizing flare, veiling glare, and internal reflections—well below other lenses. It also offers superior relative illumination and high resolution over the entire screen edge-to-edge, throughout the focal range. Users will appreciate that the ZEISS DigiZoom does not ramp.

## Perfect Color Match

For exceptional color characteristics, Carl Zeiss carefully selects superior quality optical glass, then applies proprietary coatings. Naturally, Zeiss engineers have designed the 4X zoom to accurately color match and seamlessly intercut images made with the DigiPrime family.

## Carl Zeiss & Band Pro

The new ZEISS DigiZoom 6-24mm T1.9 is manufactured at the Carl Zeiss Optics factory in Oberkochen, Germany and marketed worldwide exclusively by Band Pro Film & Digital.