

Schneider Kreuznach Cine-Digitar 1.33x M Anamorphic Lens

With Kino-Torsion MX Motorized Lens Positioner

Doug Blackburn

Schneider, a German company, has been at the forefront of high-quality lenses for photography, cinema, and industrial applications since 1913. Kreuznach is a shortened form of Bad Kreuznach, the home of Jos. Schneider Optische Werke GmbH, located southwest of Frankfurt, not far from the borders with France, Luxembourg, and Belgium. For many decades, Kreuznach was part of the company name, but that ended in 1998 when the company adopted the name in use today. The “Schneider Kreuznach” name appears on many Schneider lenses, including the Cine-Digitar series of home theatre anamorphic lenses—and on the lens of the last digital photo camera I purchased. Schneider Optics is the U.S.-based subsidiary, with offices in New York and California. The California office provided the Cine-Digitar 1.33x M lens, with several accessories, for this review.

There are currently four lenses in the Cine-Digitar series. All four lenses offer equal image quality. The differentiator is the physical size of each lens. When it comes to lenses, the bigger they are, the more expensive they are, and you'll see that's quite true here. The original (Cine-Digitar 1.33x) is physically the smallest and least-expensive model, with an MSRP of \$5,602. It is designed for projectors with small lenses and a small beam size. The subject of this review, the “M” series lens (MSRP \$8,356) is larger, big enough for the zoom lens on JVC Professional's DLA-RS60 projector (approximately 3 inches in diameter) and its moderate beam size. There are two lenses that are even larger, the XL (MSRP \$12,704) and the MF Premier (MSRP \$16,820). The largest Cine-Digitar lens will work fine with a projector having the smallest lens and smallest beam size, but there would be no performance advantage over the approximately \$11,000 less-expensive original Cine-Digitar lens. If you pick a lens that is too small for the projector's beam size, you will get vignette-ing in the corners, so you want the lens that is the best match for your particular projector. There are several factors that affect the size of the beam leaving the projector, but no one factor tells you how large the beam will be. The size of the imager device(s) may have some effect. The size of the lens may have some effect. And the length and design of the internal optical path may have some effect. But there are a lot of exceptions. For example, recent Samsung/JKP projectors have *huge* lenses, on purpose. Only a small portion of the center of the lens is used for projecting images, to avoid image quality problems like chromatic aberration that are more prevalent the farther you get from the central axis of the lens. So even though that particular projector has a very large lens, it may not require an XL or MF Premier lens, due to the modest beam size. Schneider Optics and their dealers are more than happy to review customer needs prior to purchasing any Cine-Digitar lens so that the right lens is identified from the outset.



Table Stand

Each of the Cine-Digitar lenses includes 1.33x in the name of the lens. This refers to the horizontal expansion factor. When combined with a 1.78:1 original image, the Cine-Digitar lenses expand the wide dimension by a factor of 1.33. So 1.78:1 x 1.33 is 2.37:1, right in the middle of 2.35:1 and 2.40:1 ratios of some of the biggest, literally, movies ever made.

Accessories that came with the Cine-Digitar lens were: the Kino-Torsion MX, a motorized lens-positioning device that rotates the lens in and out of position (MSRP \$2,682); the Universal Mount, a stout 90-degree arm that grabs the center post of many ceiling mounts (including Chief mounts) to hold the Kino-Torsion MX unit in front of the projector (MSRP \$1,319); and the Kino-Torsion Table Stand, a beefy plate with a vertical bracket that mounts the Kino-Torsion MX device for projectors that are right-side up on a table or rack shelf (MSRP \$297). Schneider has other accessories and options, including the Kino-Linear motorized positioning device that moves the lens left-right to get it in and out of the optical.

The motorized positioning accessories both operate from the 12 VDC trigger that is present on most projectors and on some video processors. When you select the vertical stretch mode on these projectors, they typically will provide a 12 VDC trigger specifically for use with external anamorphic lenses. Unfortunately, each projector manufacturer seems to flip a coin to determine whether the 12 VDC trigger happens when you select the vertical stretch mode or when you de-select the vertical stretch mode. For now, Schneider is addressing this problem by offering the motorized lens-positioning devices two ways... the default trigger and the reversed trigger. If you happen to get a motorized positioner that doesn't do the right things at the right times, Schneider will swap units for you at no charge. To make this problem even easier to live with, if you change projectors in the future and trigger polarity is wrong with the new projector, ship your motorized transport to Schneider and they will re-wire it for “reverse” operation at no charge.

While I don't use a ceiling mount, Schneider Optics sent their Universal Mount, an impressively engineered arm that will clamp to the round center post most ceiling mounts (including Chief mounts) use to hang the projector mount from the ceiling. The arm suspends the motorized Kino-Torsion MX motorized positioning unit in front of the projector so the

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projector position adjustments within the ceiling mount remain completely independent from the adjustments to the Kino-Torsion MX and the lens itself. This may not be the least expensive way to attach a motorized positioner to a ceiling-mounted projector, but it is certainly an impressive product with plenty of “beef,” and all the adjustments you’ll ever need. Possibly the most surprising feature is the sheer weight of the Universal Mount... this is a seriously heavy mounting arm. The horizontal beam slides in and out to get the position of the Kino-Torsion MX (or Kino-Linear motorized transport) in the correct position relative to the front of the projector. The vertical beam moves up and down, to facilitate alignment with the projector lens. If you’re thinking about a mount for a ceiling-mounted projector... this one is as good as it gets.

With all the variables and options, Schneider prefers to have each customer contact either their Schneider dealer or Schneider directly before committing to any purchase. Schneider wants to be sure each owner gets exactly what they need and want in whatever configuration is correct for their system and projector mounting.

Setup

Documentation is a little disjointed, with some things not mentioned at all, but it turns out those unmentioned things aren’t that critical (like how close the back of the Cine-Digitar lens should be to the projector lens)—answer... as close as you can get them without touching, but half an inch or even a little more clearance isn’t a problem. For my setup with the JVC projector on the top shelf of a tall rack, I used the Kino-Torsion Table Stand to hold the Kino-Torsion MX rotary lens positioner. A threaded adapter ring for the Cine-Digitar 1.33x M lens screws on to the back of the lens to match the threads in the Kino-Torsion MX lens-mounting bracket. Two screws mount the Kino-Torsion MX unit to the table stand. Position the Cine-Digitar lens so that it is close to the projector and centered on the lens top-bottom and left-right. You want the beam from the projector to hit the center of the Cine-Digitar lens.

When the hardware is assembled and in place, you connect the power cord and the trigger cable and you’re ready to roll. If the trigger polarity is correct, when you select the vertical stretch/anamorphic mode on your projector, the Kino-Torsion MX unit will swing the lens into place in front of the lens. When you de-select the vertical stretch mode, the Kino-Torsion MX device rotates the lens away from the projector lens, much like opening a door. The Cine-Digitar lens just hangs out there in space when it is not in use. Positioning is fairly quick, just a couple of seconds to move the lens into position or out of position. No remote control is provided to control the lens. Currently, the only control over positioning is the trigger voltage from the projector. For those who might be wondering, the JVC DLA-RS60 projector requires a motorized positioning mechanism with reversed trigger polarity. You need about 10 inches of clear space in front of the projector to clear the Kino-Torsion unit with the lens in the “open” position (out of the optical path). With a big projector like the JVC, you need a shelf that’s about 25 inches deep to support the projector and Kino-Torsion Table Stand (plus another 5 inches or so of space in front of the shelf to clear the lens when it is in the “open” position).

With the lens in position, the first adjustment is to get the rotation of the lens correct. At first glance, the Cine-Digitar lenses seem to have

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Cylindrical lens shape
Lockable focus adjustment
Motorized rotating lens positioning option: Kino-Torsion MX
Linear Motorized lens positioning option: Kino-Linear
Static stand optional (no moving parts)
“M” Lens commonly used with mid-sized zoom lenses found on many projectors
Full 1920x1080 resolution is retained in stretched images
Universal ceiling mount arm for Chief and other similar ceiling mounts using a tube to support the mount, optional extra cost item
Optional table/shelf stand for mounting Kino-Linear or Kino-Torsion MX motorized positioning devices, used when projector is mounted on a table or shelf/rack
2-D and 3-D compatible

Specifications

Lens body dimensions - 5 1/8 diameter; 3 1/4 long (in inches)
Lens Weight - 4.6 lbs
Optical elements - 4 cylindrical elements in 2 groups
Light transmission - greater than 96.5 percent
Motorized lens transport mechanism weight - 7 lbs
Warranty - 1 year, parts and labor
MSRP - Cine-Digitar 1.33x M lens \$8,356; Kino-Torsion MX lens positioner \$2,682; Universal mount \$1,319; Kino-Torsion Table Stand \$297

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Kino-Torsion MX Motorized Lens Positioner

horizontal masks covering part of the surface of the lens. Once you read the instructions, you realize those are *not* intended to be horizontal. Instead, they are intended to be oriented vertically. When you display the projector’s zoom or focus pattern, you can rotate the lens in the Kino-Torsion (or –Linear) mounting bracket. When you rotate the lens and view the focus or zoom grid pattern, you’ll notice that when the lens is not rotated correctly, there will be some trapezoidal distortion on-screen. When the rotation of the lens is perfect, the trapezoid distortion is completely gone. After setting up everything, focus the projector with the

Cine-Digitar lens out of the optical path.

When the projector focus is correct, move the Cine-Digitar lens into position, loosen the knurled lock screw on the barrel of the lens, and focus the Cine-Digitar lens. When the pixels are as sharp as they can be, you have found the best focus setting for the Cine-Digitar lens. The focus adjustment

isn’t particularly sensitive, so you don’t have to worry about this particular adjustment being a pain. It’s really fairly simple, especially if you have a helper to focus the lens while you watch the individual pixels on the screen. When you find the best focus setting, tighten the knurled thumbscrew to lock the focus ring in place so it can’t be moved by accident. There’s also a tilt adjustment available that controls how the lens is tilted in relationship to the path of the beam passing through the lens. I found the factory setting was as good as it was going to get, but you may have different results in a different setup.

Measurements

As with the previously reviewed Panamorph DC-1 anamorphic lens, trying to get contrast ratio or black-level measurements with the JVC projector is just impossible. The black levels of this projector are just



Manual (Non Motorized) Kino Torsion, mounted on the Universal Mount

too low to measure, even with a relatively sensitive incident light meter.

The calibrated gray scale with this setup produced dEs below 1 for all steps from 20 to 100 percent without the Cine-Digital lens in the optical path. I then moved the Cine-Digital lens into the optical path and re-measured the gray scale. The dEs were now in the range of 3.3 to 6.9, a jump that's large enough to cause visible errors in moving video images. Most dEs were in the range of 4.0 to 5.5. These

aren't what I'd call serious errors. In fact, some would argue that a dE really has to be in the range of 4 or 5 to begin to be visible in moving video images. Yes, you can see smaller errors with special content and/or test patterns and training. But the typical, untrained (but still critical) viewer probably would have a hard time finding dE errors in the range of 4 to 5 without some help. Using a different memory of the Lumagen Radiance XE 3D processor with a separate gray scale calibration for the Cine-Digital lens again produced gray scale dEs that were all below 1 for 20 to 100 percent. Almost all the errors were a result of minus blue errors with the Cine-Digital lens in the optical path.

Calibrated color measurements produced dEs (dEuv) in the range of 1.7 (yellow) to 4.5 (magenta) for primary and complimentary colors. Color luminance errors were all smaller than +/- 1 percent. Moving the Cine-Digital lens into position and re-measuring produced dEs of 1.1 (green) to 12.6 (magenta). Color luminance errors with the Cine-Digital lens in position remained smaller than +/- 1 percent, except for blue, which was 2.4 percent dimmer than it should have been. Using the controls in the Lumagen Radiance XE 3D processor to correct colors as well as possible while the Cine-Digital lens was in the optical path produced results that were actually a little better than the results I got without the Cine-Digital lens in the optical path.

Since the errors introduced by the Cine-Digital lens aren't too large, I can't say that you really must have a custom calibration specifically for the Cine-Digital lens. On the other hand, the errors introduced are big enough and fixable enough that having a separate calibration to use with the Cine-Digital lens makes sense, especially when the cost of the calibration is going to be less than 10 percent of the purchase price of the least-expensive Cine-Digital lens.

In Use

The Cine-Digital's performance was excellent. I thought having the focus ability was an advantage over the previously reviewed Panamorph DC-1 anamorphic lens. With the Cine-Digital lens focused as precisely as was possible, there was so little difference in sharpness compared to the projector alone that it seemed there was no penalty in image sharpness at all with the Cine-Digital lens in the optical path. Individual pixels were very sharp and clean, with no detectable fill-in between pixels with the Cine-Digital in the optical path.

With a custom calibration for use with the Cine-Digital in the optical path, images looked great from any perspective. There was no detectable increase in black level, in fact, the black level goes down when image size goes up... but so does the level of 100 percent white. In a black room, the perceived contrast ratio seemed to be just as good as the projector itself. The difference in white level was easy to measure, but wasn't very obvious visually. Schneider says the 1.33x M lens transmits more than 96.5 percent of the light emitted by the projector.

Viewing *Pirates Of The Caribbean: At World's End* with the Cine-Digital providing horizontal stretch, images were vibrant and dimensional, with excellent sharpness and detail. Textures on wood and fabrics were excellent. Encrustations on various ships, especially Davey Jones' ship, and crew were all excellent. Contrast in bright scenes was excellent, with blacks appearing quite dark and bright areas remaining bright and crisp, with excellent highlight detail. The darkness of *Blade Runner* is often a challenge for projection systems, but the Cine-Digital lens did a great job of presenting this classic movie with the widescreen impact it deserves. I can't recall the cinematic experience being as good as the presentation here with the Cine-Digital lens. When scenes are as consistently dark as *Blade Runner*, the projection system must retain shadow detail to a very high standard, and the Cine-Digital had no trouble preserving all the shadow detail. Exterior shots of buildings and cityscapes were fabulous, as were interior details in walls, columns, and furnishings. Cigarette smoke came and went with excellent realism.

Pincushion distortion is the other anamorphic lens bug-a-boo. But this lens has less geometric distortion than any anamorphic lens I've seen so far. In this setup, with about 16 feet between the projector and the 8-foot wide screen, the top edge of the frame is perfectly straight (projector centered on the top edge of the screen). The left and right sides of the screen lean slightly inwards at the top, a negligible 1/16th of an inch on each side of the screen. But they are straight lines without visible pincushion. The bottom edge had three-eighths of an inch of pincushion. It was a simple task to hide the non-straight edges in the black velvet mask of the screen's frame. None of these distortions were ever noticeable in actual moving video images, not even the small amount of pincushion at the bottom. You can't even blame the Cine-Digital lens for all of this distortion since the projector alone produces about half of these geometric distortions when you measure things carefully. I'd call that excellent geometric performance for an anamorphic lens.

Summary

Going anamorphic with an accessory lens is never cheap. Total cost of the motorized setup I used was \$11,335, and that doesn't include the cost of a 2.35:1 or 2.40:1 screen, if you don't already have one. It may not be something you *need* but once you experience what it does, you find the mental wheels starting to turn towards ways to justify the cost. It's pretty cool to see the black bars disappear and the image expand to fill the screen with the touch of a button. And it's even cooler to see your nice big wide format screen completely filled with the best images Hollywood can produce. The Schneider Kreuznach Cine-Digital lens has performance that equals or exceeds the performance of other anamorphic lenses I've experienced. The Cine-Digital 1.33x M lens is highly recommended for its excellent optical performance and flexible mounting options. **WSR**

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