
Metabones®

Introduces a New Series of Speed Booster® for BMPCC 4K Camera

Press Release

- **Los Angeles, CA, USA, July 31, 2019:** Caldwell Photographic Inc. and Metabones® are pleased to announce a new series of Speed Booster for Blackmagic Design Pocket Cinema Camera 4K (BMPCC4K).

The BMPCC4K Speed Booster ULTRA 0.71x and XL 0.64x are similar to the standard m43 Speed Booster adapters, but the optics have been re-designed to optimize for the filter stack thickness of the Blackmagic cameras, which is substantially thinner than that of standard m43 cameras.

The thickness of the camera's filter stack is an important component of the overall optical design, and the re-designed optics ensure that both versions can achieve the same high performance as the Speed Booster versions for standard m43. This is especially critical at the extremely large apertures made possible by Speed Booster technology.

In addition to the new optical designs, the new series of Speed Boosters also features a longer tripod mount to perfectly match the height of the BMPCC4K camera body. This way the camera and the Speed Booster can be mounted firmly on the same quick release plate.

Both versions – the Speed Booster ULTRA 0.71x and XL 0.64x – are available with Nikon G lens mount, with Canon EF lens mount and with Canon EF CINE lens mount. The ARRI PL lens mount is available in ULTRA 0.71x version only. The Canon EF CINE lens mount creates a positive lock for a secure electronic connection, and together with the matching length of new the tripod mount, allows for a rock-solid mechanical setup, which is important when using follow focus attachments.

This new series of Metabones Speed Booster adapters is designed exclusively for Blackmagic Design Pocket Cinema Camera 4K (BMPCC4K). **They cannot be attached to any other m43 cameras such as JVC, Olympus or Panasonic cameras.**

Video Mode	Crop Factor on BMPCC4K		
	Metabones Plain Adapter	Metabones Speed Booster ULTRA 0.71x	Metabones Speed Booster XL 0.64x
4096 x 2160 4K DCI	1.9x	1.35x	1.22x
3840 x 2160 Ultra HD	2.03x	1.44x	1.3x
1920 x 1080 HD	2.03x	1.44x	1.3x
1920 x 1080 HD (Windowed)	4.05x	2.88x	2.6x

* Calculations based on the width of sensor in relation to a full-frame sensor.

Metabones Speed Booster ULTRA 0.71x for BMPCC4K:

The new Speed Booster ULTRA 0.71x for BMPCC4K uses an advanced 6-element 4-group optical design incorporating ultra-high index tantalum-based optical glass. The new design is specifically optimized to bring the same level of astonishing performance as the ULTRA Speed Boosters for Micro Four Thirds to users of the Blackmagic Pocket Cinema Camera 4K.

In particular, the Speed Booster ULTRA 0.71x is optimized to correctly account for the BMPCC4K camera's specific filter stack located near the sensor surface. This is especially critical at the extremely large apertures made possible by Speed Booster technology. As a result of this careful optimization, an enormous range of full-frame optics, ranging from vintage film lenses to the latest digital designs, will function flawlessly when adapted to BMPCC4K bodies.

The Speed Booster ULTRA 0.71x reduces the crop factor of the BMPCC4K camera as shown in the above table. The new design for BMPCC4K makes very effective use of exotic materials at the furthest limit of glassmaking technology, and as a result is almost perfectly corrected for use with all full-frame SLR lenses regardless of aperture or exit pupil distance. The Speed Booster ULTRA 0.71x will also work extremely well with many DX and APS-C format lenses, provided the image circle provided by the lens is large enough. Optical performance of the new Speed Boosters is so good that the MTF of any lens attached to it will be improved. Even the latest generation of ultra-high performance SLR lenses such as the Zeiss Otus series can be improved by adding a Speed Booster ULTRA 0.71x.

Figures 1 through 3 below show MTF at 10, 20, and 40 lp/mm as a function of image height for output apertures of f/0.9, f/1.0, and f/2.0, respectively¹. At the maximum aperture of f/0.90 (i.e., with an f/1.2 master lens) the sharpness and contrast are extraordinary across the entire image circle. At just one-third stop down to f/1.0 the performance is equal to or better than the best photographic lenses used at their optimum apertures. An additional stop down to f/2.0 yields performance that is rarely encountered in photographic optics. In practice, what all of this means is that the new Speed Boosters will always enhance and never degrade the performance of the attached master lens.

And other aspects of optical performance haven't been sacrificed in order to obtain high MTF, either. Figure 4 shows that there is less than 1 stop of corner illumination falloff even wide-open at f/0.9. There is no vignetting at all after the output aperture reaches f/2.8². Figure 5 shows that rectilinear distortion added by the Speed Booster ULTRA is negligible at less than 0.7%. All of the charts below show the optical performance of the Speed Booster ULTRA 0.71x when mounted behind an ideal "perfect" lens.

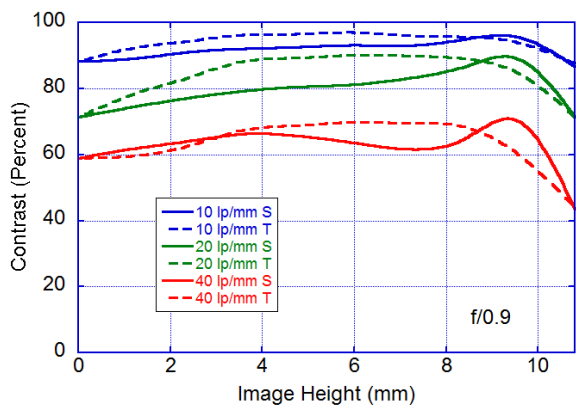


Figure 1: MTF at 10, 20, and 40 lp/mm for f/0.90

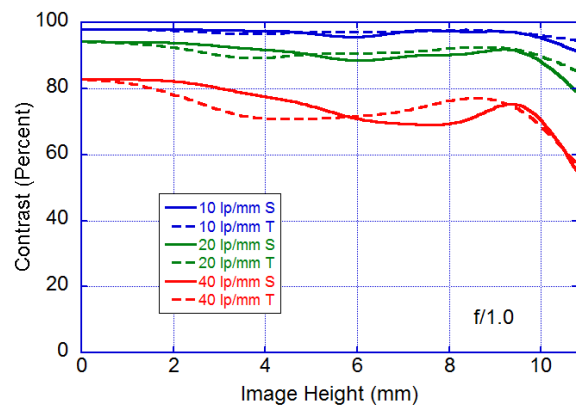


Figure 2: MTF at 10, 20 and 40 lp/mm for f/1.0

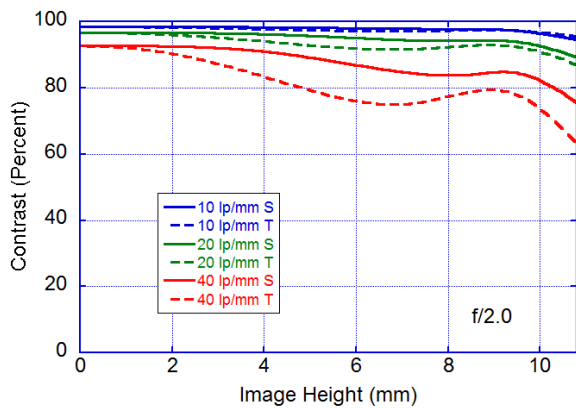


Figure 3: MTF at 10, 20, and 40 lp/mm for f/2

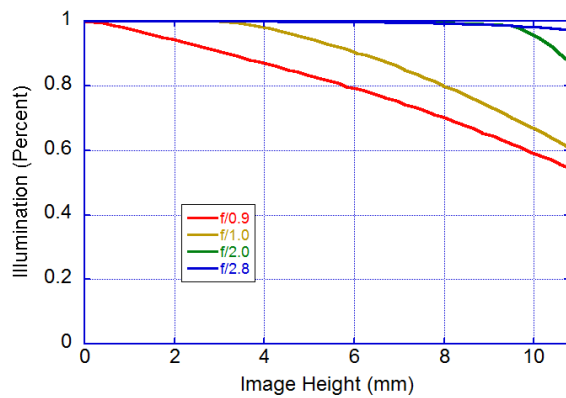


Figure 4: Relative illumination

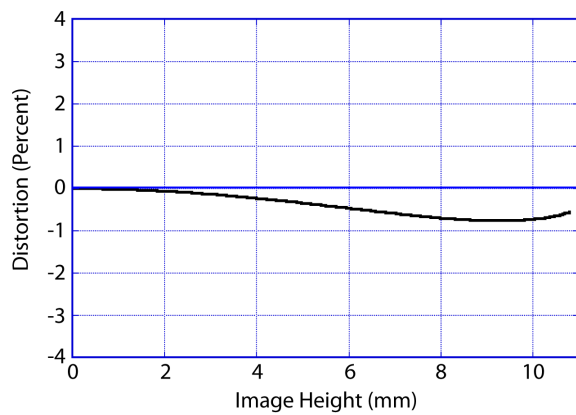


Figure 5: Distortion

Metabones Speed Booster XL 0.64x for BMPCC4K:

Also this Speed Booster XL 0.64x adapter has been designed exclusively for the Blackmagic Pocket Cinema Camera 4K, with a magnification of 0.64x. The Speed Booster XL 0.64x uses an advanced 7-element optical design to achieve extraordinary optical performance at apertures up to an incredible f/0.80.

The new Speed Booster XL 0.64x reduces the full-frame crop factor of the BMPCC4K as shown in the table further above. In addition, the speed of any attached lens is increased by $1\frac{1}{3}$ stops, with a maximum output aperture of f/0.80 when an f/1.2 lens is used. For example, a 50mm f/1.2 becomes a 32mm f/0.80, which is the fastest aperture available for Blackmagic cameras.

Perhaps most exciting of all, in addition to increasing lens speed and field of view, the Speed Booster XL 0.64x offers amazingly high image quality even at extremely large apertures. Figures 1 through 3 below show MTF at 10, 20, and 40 lp/mm as a function of image height for output apertures of f/0.8, f/1.1, and f/1.8¹. At f/0.80 (i.e., with an f/1.2 master lens) the sharpness and contrast are extraordinary out to an image height of 5.1 mm, which is the limiting image height of the BMPCC4K camera's FHD video mode. Beyond 5.1 mm the performance drops gracefully, but remains very good even in the extreme corner of the full Blackmagic sensor. Note that as the master lens aperture is reduced to f/1.8 and then f/2.8 (corresponding to output apertures of f/1.1 and f/1.8, respectively) the performance improves everywhere, especially in the extreme corners.

And other aspects of optical performance haven't been sacrificed in order to obtain high MTF, either. Figure 4 shows that there is only about 1 stop of corner illumination falloff even at f/0.8. There is no vignetting at all after the output aperture reaches f/3.4². Figure 5 shows that rectilinear distortion added by the Speed Booster XL 0.64x is negligible at less than 0.8%.

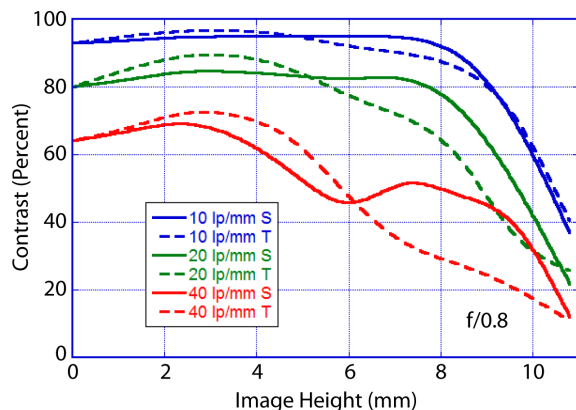


Figure 1: MTF at 10, 20, and 40 lp/mm for f/0.80

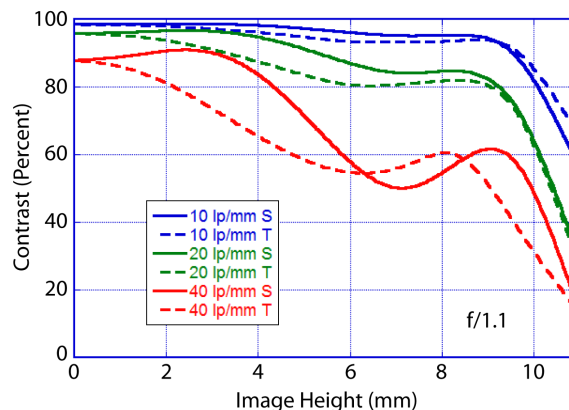


Figure 2: MTF at 10, 20 and 40 lp/mm for f/1.1

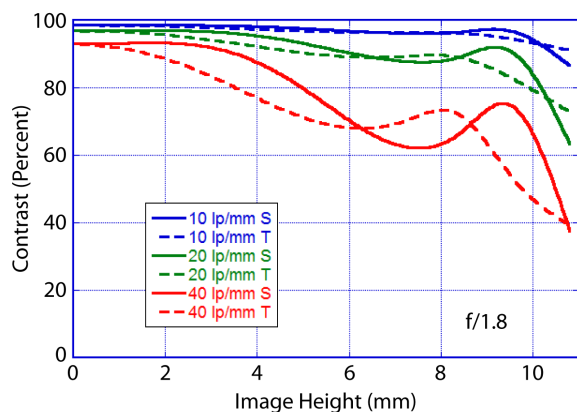


Figure 3: MTF at 10, 20, and 40 lp/mm for f/1.8

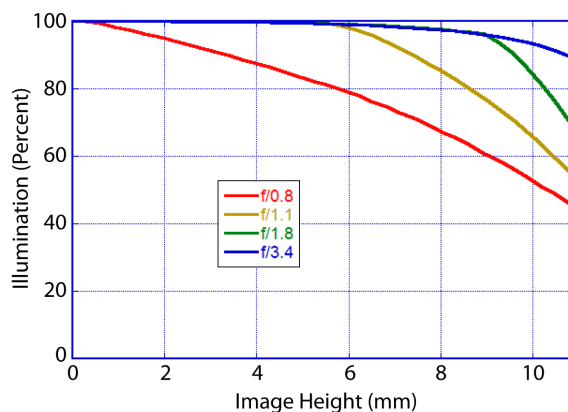


Figure 4: Relative illumination

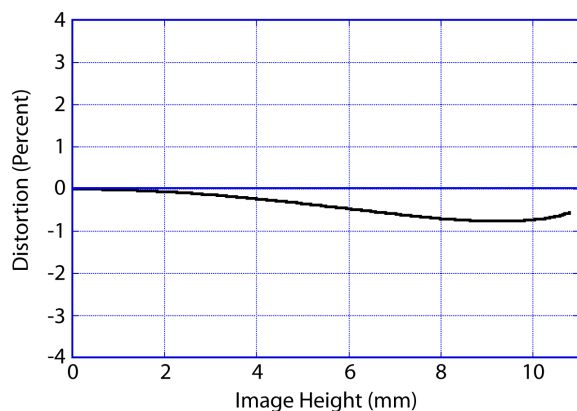


Figure 5: Distortion

Just like the Metabones Speed Booster ULTRA 0.71x for BMPCC4K, the Speed Booster XL 0.64x is optimized to correctly account for the BMPCC4K camera's specific filter stack located near the sensor surface. This is especially critical at the extremely large apertures made possible by Speed Booster technology. As a result of this careful optimization, an enormous range of full-frame optics, ranging from vintage film lenses to the latest digital designs, will function flawlessly when adapted to BMPCC4K bodies. In fact, most lenses will have significantly improved MTF when used with the Speed Booster, compared to using them with a plain (i.e. "glassless") adapter on Blackmagic cameras.

■ Availability:

The BMPCC4K Speed Booster adapters will be available starting in July 31st, 2019 from the Metabones webstore and its worldwide network of resellers.

■ Specifications:

Product name: Canon EF to BMPCC4K T Speed Booster® ULTRA 0.71x

Model Code: MB_SPEF-m43-BT8

Color: Black Satin exterior; Black Matte interior

Magnification: 0.71x

Dimensions: H 82.0mm x W 72.4mm x D 31.4mm

Weight: 176 grams

Retail Price: USD 649.00 (excl. tax & shipping)

Product Page: http://www.metabones.com/products/details/MB_SPEF-m43-BT8



Product name: Canon EF to BMPCC4K T Speed Booster® XL 0.64x

Model Code: MB_SPEF-m43-BT9

Color: Black Satin exterior; Black Matte interior

Magnification: 0.64x

Dimensions: H 82.0mm x W 72.4mm x D 30.9mm

Weight: 174 grams

Retail Price: USD 649.00 (excl. tax & shipping)

Product Page: http://www.metabones.com/products/details/MB_SPEF-m43-BT9



Product name: Canon EF to BMPCC4K T CINE Speed Booster® ULTRA 0.71x

Model Code: MB_SPEF-m43-BTA

Color: Black Satin and Satin Chrome exterior; Black Matte interior

Magnification: 0.71x

Dimensions: H 90.3mm x W 86.0mm x D 31.8mm

Weight: 219 grams

Retail Price: USD 699.00 (excl. tax & shipping)

Product Page: http://www.metabones.com/products/details/MB_SPEF-m43-BTA



Product name: Canon EF to BMPCC4K T CINE Speed Booster® XL 0.64x

Model Code: MB_SPEF-m43-BTB

Color: Black Satin and Satin Chrome exterior; Black Matte interior

Magnification: 0.64x

Dimensions: H 90.3mm x W 86.0mm x D 31.2mm

Weight: 216 grams

Retail Price: USD 699.00 (excl. tax & shipping)

Product Page: http://www.metabones.com/products/details/MB_SPEF-m43-BTB



Product name: Nikon G to BMPCC4K Speed Booster® ULTRA 0.71x

Model Code: MB_SPNFG-m43-BM4

Color: Black Satin exterior; Black Matte interior

Magnification: 0.71x

Dimensions: H 80.7mm x W 68.2mm x D 34.0mm

Weight: 195 grams

Retail Price: USD 489.00 (excl. tax & shipping)

Product Page: http://www.metabones.com/products/details/MB_SPNFG-m43-BM4



Product name: Nikon G to BMPCC4K Speed Booster® XL 0.64x

Model Code: MB_SPNFG-m43-BM5

Color: Black Satin exterior; Black Matte interior

Magnification: 0.64x

Dimensions: H 80.7mm x W 68.2mm x D 33.6mm

Weight: 190 grams

Retail Price: USD 489.00 (excl. tax & shipping)

Product Page: http://www.metabones.com/products/details/MB_SPNFG-m43-BM5



Product name: ARRI PL to BMPCC4K T CINE Speed Booster® ULTRA 0.71x

Model Code: MB_SPPL-m43-BT2

Color: Black Satin and Satin Chrome exterior; Black Matte interior

Magnification: 0.71x

Dimensions: H 94.0mm x W 93.1mm x D 46.0mm

Weight: 428 grams

Retail Price: USD 719.00 (excl. tax & shipping)

Product Page: http://www.metabones.com/products/details/MB_SPPL-m43-BT2



Metabones

New Optimized Speed Booster® for Blackmagic Pocket Cinema Camera 4K

Optics designed by Caldwell Photographic (patented)



***Camera, lens and quick release plate are not included.*

Notes:

- 1) MTF data is a full diffraction-based calculation that assumes the Speed Booster is attached to a perfect master lens having an exit pupil distance of 100mm. Note that the MTF calculations do not take into account sensor-induced apodization effects, sometimes called "pixel vignetting" or "pixel shading", so actual results at large apertures are likely to be better than the calculations indicate.
- 2) Illumination data assumes a perfect master lens with an exit pupil distance of 100mm and zero vignetting. The slight falloff shown at f/2.8 is due to \cos^4 effects alone, as the mechanical vignetting is zero. Actual results will depend on the exit pupil distance and vignetting characteristics of the master lens used.

About Metabones

Metabones®, together with its allied partners Caldwell Photographic and WB Design, is the pioneer and leader of two key technologies which have catalyzed the transition from mirror to mirrorless. Speed Booster® (winner of the 2013 TIPA Best Photo Accessory Award) makes lenses brighter, wider and sharper, and Smart Adapter™ breaks the lens mount compatibility barrier by electronically integrating interchangeable single-lens reflex (SLR) lenses and mirrorless cameras. Metabones® offers a comprehensive range of adapters covering most popular lens mounts, as well as some rare and exotic ones. "Always at the forefront of innovation without ever setting aside practicality as a professional tool" perhaps best epitomizes Metabones' philosophy.