



# PEBBLE PLACE

REVIEWS - Medium Format - Mamiya 645M 200mm F2.8 APO Telephoto Lens

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## MAMIYA 645M 200MM F2.8 TELEPHOTO LENS

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Updated June 19, 2018

Production	Early 1980's to 2002
Lens Composition	7 Elements in 5 Groups
Floating Element	No
Angular Field of View	20° at infinity
Actual Field of View	124mm (35mm Equivalent, on a 645 film negative)
Minimum Focus	2.5 Meters / 8.2 Feet
Aperture	8 Blades, Octagonal
F-Stop Scale	F2.8 to F22; full stop detents
Filter Size	77mm
Lens Cap	77mm
Lens Hood	Built-in (slides into place) plus Screw-on Extension
Weight	1107 Grams / 2.43 pounds (without caps)
Lens Size	91mm Wide x 143.5mm Long

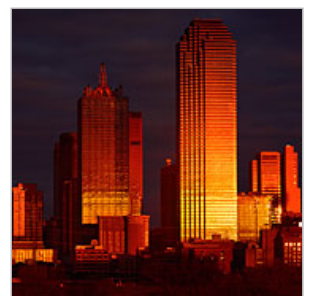
### OVERVIEW

The Mamiya 645M 200mm F2.8 APO was designed for use on the Mamiya M645, M645-1000S, M645 J 645 Super and M645 PRO. While those cameras are long since discontinued, the Mamiya 200mm F2.8 APO's mounts directly to today's modern Mamiya / Phase One 645AF bodies. These days I use the Mamiya 200mm F2.8 APO via the [Leica S-Adapter Mamiya](#) on the Leica S Typ 006, and have found the Mamiya 200mm APO to be outstanding portrait lens and equally adept as a landscape lens.

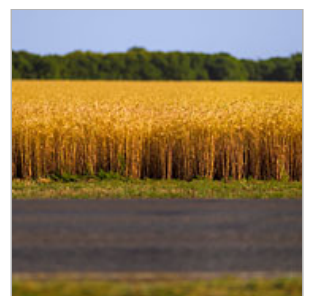
On medium format digital back like the Phase One IQ160, the Mamiya 200mm APO's field of view is ~124mm, so its field of view and depth of field are similar to a [Canon 135mm F2 L USM](#) on the [Canon 5DS R](#). Via an adapter, the Mamiya 200mm APO can fit any dSLR and most 645 medium format systems. For a medium format lens, the 200mm has a particularly fast aperture, making the lens unique amongst the medium format lens options. Whereas for dSLR shooters, there are many 200mm choices, such as Canon IS zooms and primes. If shooting sports or action, a dSLR and auto-focus make more sense; therefore, I consider the Mamiya 200mm a medium format lens for medium format cameras.



Mamiya 645M 200mm F2.8 APO  
Phase One P65+ • F8 • 4-Sec • ISO 50



Mamiya 645M 200mm F2.8 APO  
Phase One P65+ • F8 • 1/125 • ISO 50

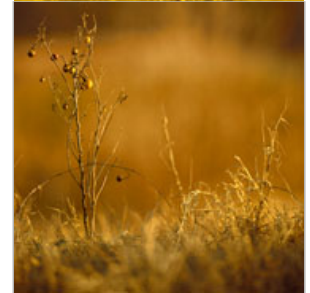


Mamiya 645M 200mm F2.8 APO  
Leica S2 • F2.8 • 1/4000 • ISO 160

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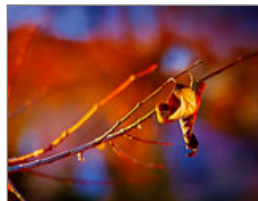
Mamiya 645M 200mm F2.8 APO  
Leica S2 • F2.8 • 1/4000 • ISO 160



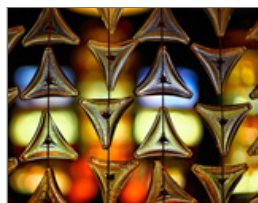
Mamiya 645M 200mm F2.8 APO  
Phase One P65+ • F2.8 • 1/160 • ISO 50



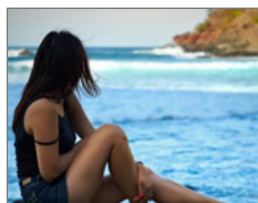
review  
Leica 35mm 'Lux M ASPH



review  
Leica 35mm 'Lux FLE



review  
Leica 50mm Noctilux ASPH



review  
Leica 50mm 'Lux M ASPH



review  
Leica 50mm 'Cron APO M



review  
Leica 75mm Summilux M

**BUILD QUALITY**

The Mamiya 200mm APO is well built with all metal construction. The focus ring is not as dampened as a Leica M or R lens, but the 200mm APO is still nice to use. The aperture ring clicks in 1-stop increments. I prefer half-stop exposure steps, but when shooting via stop-down metering, the 1-stop aperture rings are easier to count-off. The Mamiya 200mm APO's hood is built-in. It slides into position and with a twist, it locks in place. A secondary lens hood screws in as an extension; I usually do not use the secondary hood.

Over the years I have owned five Mamiya 200mm APO's. All have performed well, so the lens seems durable. My only gripe is the sliding hood. When pulling the lens out of the camera bag, the only place to grab the lens is by the hood. Of course the hood slides to its extended position. If in a hurry, this all happens fast and the hood comes to an abrupt stop when its extension is reach. It is a somewhat jarring and probably not good for the lens. Also, with a sudden shift in balance, I have come close to dropping the lens several times. So, I wish the hood twisted into a locked closed position as well. It is difficult to describe this in words, so just be sure to take care when pulling the lens out of the camera bag or picking it up off a desk (by the hood).

**ADAPTERS**

Weighing 2.45 pounds, the Mamiya 200mm APO is a moderately heavy lens and needs a quality adapter that can support the weight. The inexpensive Canon / Mamiya adapters typically found on Ebay for \$39-\$49 are not up to the task. While the barrel portion is solid enough, locking mechanism is an issue.



Cheap Ebay Adapter



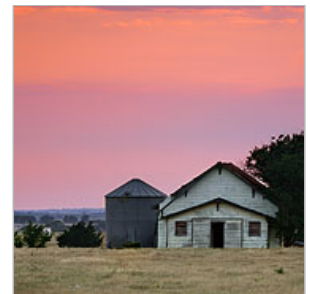
Mid-Grade Kipon Adapter

Note the silver tab on the inside of the "cheap" adapter. When the adapter is locked into place, the silver tab rests against a shaft that links to the lens' aperture mechanism. The adapter uses this shaft to keep the adapter from over rotating. Should this tab get bent, then the "lock" on the opposite side does not line up correctly, thus allowing the lens to rotate relative to the adapter and potentially spinning off the adapter. Also, it cannot be a good idea to put pressure against the shaft since it is part of the aperture mechanics. I used these "cheap" adapters with the Mamiya 645M 300mm F2.8 APO, the tab bent out of position and the 300mm F2.8 APO fell off the camera. Fortunately I was using a tripod at the time and able to catch everything.

For the Canon 1Ds3 I used a Kipon adapter with a Dandelion focus confirmation chip (I glued the chip into place). The Kipon adapter is very solid and easily handles the weight, and I used the same Kipon adapter with the much heavier Mamiya 300mm F2.8 APO as well. The Kipon is a totally different design (than the "cheap" adapters) and very well built. The Kipon adapter usually costs \$120-\$150 on Ebay, and I can say in this case you do get what you pay for.



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F2.8 • 1/250 • ISO 160



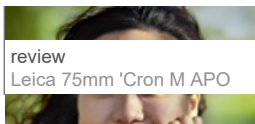
Mamiya 645M 200mm F2.8 APO  
Leica S2 • F5.6 • 1/750 • ISO 160



Mamiya 645M 200mm F2.8 APO  
Phase One P65+ • F8 • 1/160 • ISO 50



Mamiya 645M 200mm F2.8 APO  
Phase One P56+ • F8 • 1/320 • ISO 50



review  
Leica 75mm 'Cron M APO



review  
Zeiss 85mm F2 Sonnar ZM



review  
Leica 90mm 'Cron APO M



review  
Canon 100mm F2 LTM



review  
Contax 100mm F2 Planar



review  
Zeiss 100mm Planar ZE



review  
Hasselblad 110mm F2



review  
Canon 135mm F2 L

No adapter is needed if using the Mamiya 200mm F2.8 APO with a Phase One / Mamiya 645 camera body. The M645 lenses mount directly, though there is no auto aperture support. For the Leica S2 and S Typ 006, I use the Leica made Leica S-Adapter Mamiya. While the Leica adapter is very expensive, it is well made and everything mounts for smoothly. The Mamiya 645M lenses feel solidly connected to the Leica S camera body. I have used the Mamiya 645M 300mm F2.8 APO with the Leica S2 and had no concerns with the adapter's strength or connection to the lens or camera.

**MODIFICATION FOR PHASE ONE XF CAMERA BODY**

If planning to use the Mamiya 200mm F2.8 APO with the Phase One XF camera body, the Mamiya's mount needs a minor modification. A black lip protrudes past the Mamiya's mount; this interferes with the Phase One XF's added row of lens contact pins. To resolve this, unscrew the three screws holding the silver mount rings on the Mamiya lens. Remove the ring and then lift out the black section - this just comes out and in no way effects any of the lens elements. From there I cut off the black tube with a Dremel cutting tool, using the flange on the black tube as a physical guide.



*Phase One XF Modification - Black Inner Lip Removed from the Lens Mount*

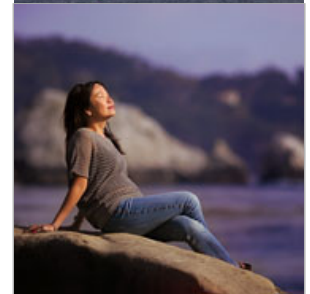
Sounds scary, but very easy to do provided you have a Dremel tool with a metal cutting disk. The Mamiya black tube is made of soft aluminum, so it cuts easily. Total modification took ~10 minutes.

**USING THE MAMIYA 200MM F2.8 APO ON THE HASSELBLAD X1D**

When Hasselblad updated the X1D's firmware with the Electronic Shutter (ES) feature, that offered a way to use non-leaf shutter on the X1D. The situation is not ideal because it takes ~300 milliseconds for the X1D to read the entire sensor, but tripod use with relatively non-moving subject matter is possible. Kipon offers the "Kipon Mamiya-X1D" adapter for ~\$180 US on Ebay. The Mamiya 200mm F2.8 APO is a heavier lens and the Kipon adapter does not have a tripod foot, so improvisation was needed. I purchased a Novoflex ASTAT-SL tripod collar for ~\$140 and then 3D printed a spacer (via www.shapeways.com) to fit around the lens and inside the Novoflex collar.



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F5.6 • 1/250 • ISO 50



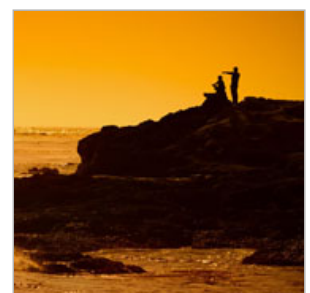
Mamiya 645M 200mm F2.8 APO  
Leica S2 • F2.8 • 1/3000 • ISO 160



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F2.8 • 1/2000 • ISO 160



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F5.6 • 1/500 • ISO 160



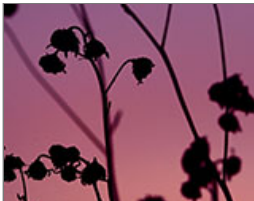
Mamiya 645M 200mm F2.8 APO  
Leica S2 • F11 • 1/750 • ISO 160



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F8 • 1/1000 • ISO 160



review  
Leica 135mm Telyt M APO



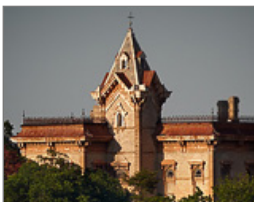
review  
Canon 135mm F3.5 LTM



review  
Leica 135mm Tele Elmar M



review  
Mamiya 200mm F2.8 APO



review  
Canon 200mm F2.8 L



review  
Olympus Zuiko 200mm F4



review  
Komura 2X for Leica M



*Mamiya 645M 200mm F2.8 APO Mounted on the Hasselblad X1D via a Kipon Adapter*

The 3D print is made of Shapeways' "Strong and Flexible" nylon plastic and only cost ~\$24. The ring is plenty strong for this task. Purely for aesthetic reason the ring was printed red. The design process was not very difficult; I used an on-line application provided by AutoCad - tinkercad.com. I tried a couple different FPA prints and the result was disappointing. The SLS print quality was much, much better (ie - Shapeways' "Strong and Flexible" nylon plastic print). If you would like to make your own 3D print, it is available here at [Shapeways](https://www.shapeways.com). I have not added any mark-up to the price and I do not receive any type of commission from Shapeways.

### HANDLING

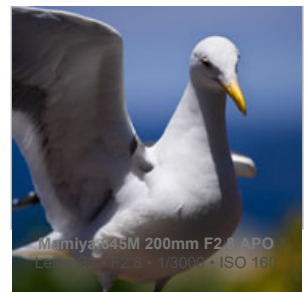
Mamiya described the Mamiya 200mm f/2.8 APO as a high-speed, hand-holdable, compact telephoto lens for existing light photography. Plausible, but... The Mamiya 200mm APO is large and weighs 1107 grams. With the camera + lens + monopod, it is difficult to call this a hand-holdable set-up. Factor in the lens adapter and the lens hood extension and the kit is even bigger. There is not a tripod collar, so all the weight is supported by the camera body. I would not recommend the Mamiya 200mm APO on a small camera like a Sony NEX because I think all the suspended weight could damage the mount and bayonet (just my opinion). Hand holding and trying to "nail" focus at F2.8 is very challenging, so I use the 200mm APO with either a Monopod or Tripod.

Nailing focus is tricky, particularly on the Phase One and Mamiya 645AFD / DF. My keeper in-focus rate benefited radically by using a monopod paired with the Really Right Stuff MH-01 Monopod Head. Using a tripod helps even more. With the Leica S2 the in-focus keeper rate has been surprisingly good with [Leica's Microprism Split Screen](#). The Leica S2's viewfinder is larger and brighter compared to the Mamiya / Phase One bodies. Whereas the keeper rate on the Canon 1Ds Mark III has been mixed. The Canon 1-Series "S" focus screen helps, but it is not perfect. Live View is the best bet, but framing, focusing and catching "the moment" with Live View is not easy. If using the Mamiya 2X Teleconverter or Mamiya Extension Tubes, I would consider a tripod as mandatory.

The Mamiya 200mm F2.8 APO requires stop-down metering on all cameras except the original Mamiya 645M bodies. Dialing in focus at F2.8 takes time. Stopping down the lens to the desired F-stop adds more time, especially if re-checking focus and depth of field. Thus, the Mamiya 200mm is best suited for landscapes, portraits, still life and (very) slow paced activities. The minimum focus distance is 2.5 meters, so it is not a close-up lens. With an Mamiya extension tube the minimum focus distance can be shortened. Adding the Mamiya 2X Teleconverter or the extension tubes will add to the lens' overall bulk and weight. With the 2X teleconverter and the full 2-piece hood set-up, the whole kit is very large.

### OPTICAL PERFORMANCE

APO is an abbreviation for Apochromatic. An apochromatic lens brings the RGB wavelengths to a common focal plane. Bringing the RGB wavelengths into



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F5.6 • 1/3000 • ISO 160



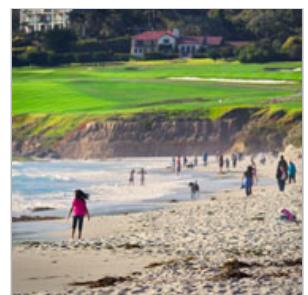
Mamiya 645M 200mm F2.8 APO  
Leica S2 • F5.6 • 1/350 • ISO 160



Mamiya 645M 200mm F2.8 APO  
Leica S-006 • F8 • 1/1500 • ISO 100



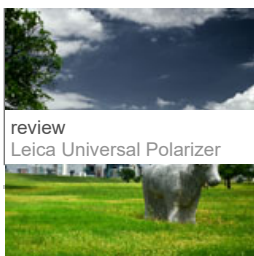
Mamiya 645M 200mm F2.8 APO  
Leica S-006 • F8 • 1/750 • ISO 100



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F8 • 1/750 • ISO 160



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F5.6 • 1/750 • ISO 160



alignment so that they intersect the focal plane at the same point reduces chromatic aberrations. This is additional level of optical correction is generally regarded as a sign of a higher quality lens. Reducing chromatic aberrations produces sharper images and reduces color fringing in high-contrast areas and in the bokeh. It is important to note that APO corrections REDUCE the fringing and may not fully eliminate it. Most APO lenses will have various amounts of color fringing in their bokeh. [Wikipedia](#) offers some additional insight:

*“Apochromatic designs require optical glasses with special dispersive properties to achieve three color crossings. This is usually achieved using costly fluoro-crown glasses, abnormal flint glasses, and even optically transparent liquids with highly unusual dispersive properties in the thin spaces between glass elements. The ‘APO’ designation is used rather loosely by some photographic lens manufacturers to describe the color accuracy of their lenses, as comparable lenses have shown superior color accuracy even though they did not carry the ‘APO’ designation.”*

There is not a recognized certification board that deems a lens as APO corrected. Manufacturers call their lenses as APO as they see fit, thus the degree of "APO-ness" varies. I have found the Mamiya 200mm APO's to be very well corrected with minimal chromatic aberrations. And the Mamiya 200mm APO should be good considering its price tag. Mamiya's telephoto lenses were extremely expensive when new; the US list prices were ~\$4,123 for the 200mm F/2.8 APO, \$12,000 for the 300mm F/2.8 APO and \$18,000 for the 500mm F/2.8 APO. Mamiya's marketing literature emphasized their focus on high quality materials and processes:

*“Mamiya manufactures their own glass and coated the lens elements using Mamiya's proprietary multi-coating process, increasing light transmission, dramatically reducing flare, and ensuring crisp, clean whites and vibrant natural colors. The Mamiya 200mm F/2.8 APO exhibits optimal correction for chromatic aberration even at wide open aperture.”*

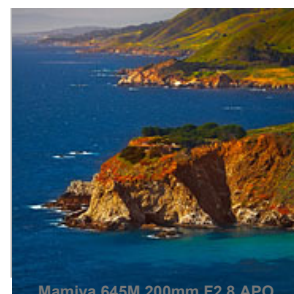
The Mamiya 200mm APO is very sharp wide open, and when the light is right, it renders a nice 3-D feel. The background blur (bokeh) is wonderful and similar to a Canon 135mm L F2 on a full frame Canon dSLR. On a full frame digital back like the Phase One IQ160, the Mamiya 200mm F2.8 APO field of view is almost 135mm (relative to a full-frame dSLR). The 200mm bokeh can be smoother, and more abstracted due to the compression of 200mm vs 135mm.

The Mamiya 200mm's minimum focus distance is 2.5 meters (about 8 feet), which is about the right distance for head shots. If a shorter focus distance is needed, the Mamiya 200mm APO can be used with extension tubes, but keep in mind that the tube(s) really limits the focus range and you might be taking the tube on and off repeatedly during a shoot. I have also used the Mamiya 2X Teleconverter, which turns the Mamiya 200mm APO into a 400mm F5.6 field of view. The converter works fine, but image quality is degraded - some sharpness and contrast are lost, the bokeh shows some double-imaging and can have a smear-like effect in the blurring. The 2X adds some distortion too.

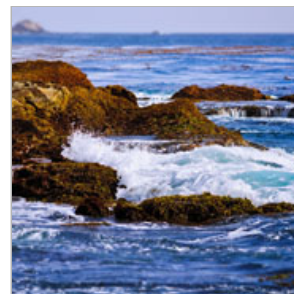
On a full-size 645 sensor, the distance to the subject needs to be shorter in order to fill the frame compared to a full-sized dSLR sensor (like the Canon 1Ds Mark III). The shorter focus distance shortens the depth of field, thus amplifying the background blur and the magic of medium format begins to take shape. Whereas when used a full-frame dSLR like the Canon 1Ds Mark III, the Mamiya 200mm APO is just another sharp lens -- the medium format "fingerprint" is lost.

Any discourse of a medium format look is highly subjective, but I have taken 1000's of pictures with the Mamiya 200mm on medium format and the Canon 135L on full-frame Canon dSLRs. If buying the Mamiya 200mm APO solely for its bokeh traits and to use a Canon full-frame dSLR, I wholeheartedly recommend the Canon 135mm F2 L USM instead ([Canon 135mm F2 L USM review](#)).

I really cannot think of anything negative to say about the Mamiya 200mm APO's optical performance. It is very sharp wide open with good contrast, colors are deep and rich and the lens is very well corrected. Resolution is impressive - even on a 60 megapixel digital back. The Mamiya 200mm F2.8 is sharper wide open than either the Canon 200mm F2.8 L USM Mark II or the Canon 135mm F2 L USM. I am referencing some 35mm SLR lenses, but do note that all the pictures in this



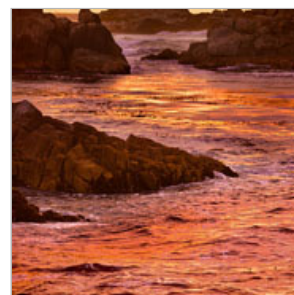
Mamiya 645M 200mm F2.8 APO  
Leica S2 • F8 • 1/180 • ISO 160



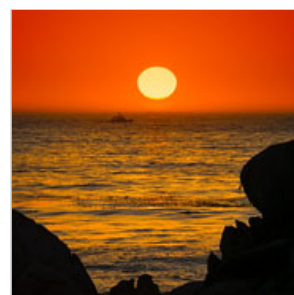
Mamiya 645M 200mm F2.8 APO  
Leica S2 • F4 • 1/750 • ISO 160



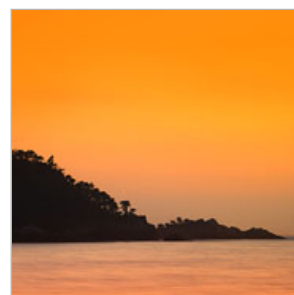
Mamiya 645M 200mm F2.8 APO  
Leica S2 • F8 • 1/350 • ISO 160



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F8 • 1/500 • ISO 160



Mamiya 645M 200mm F2.8 APO  
Leica S2 • F8 • 1/180 • ISO 160

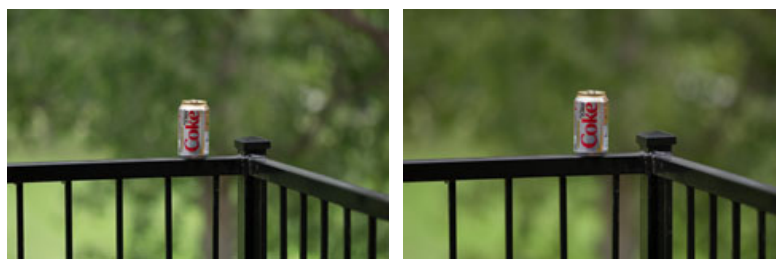


Mamiya 645M 200mm F2.8 APO  
Leica S2 • F22 • 16 Sec • ISO 160

review were taken with the Mamiya ZD, Phase One P25, Phase One P65+, Leica S2 and Leica S Type 006. In my opinion, the Mamiya 200mm APO is a medium format lens and best used on a medium format camera.

**CONCLUSION**

For medium format shooters, I consider the Mamiya 200mm APO a "must-have" lens. Secondhand prices are reasonable, typically in the \$750-\$1000 US range, which buys a sharp lens with a great fingerprint. The fast F2.8 aperture is unique amongst medium format lenses and makes for a bright viewfinder - particularly on the Leica S system. There are some downsides - manual exposure (e.g. stop-down-metering), manual focus, no EXIF and a tripod or monopod will be most likely be needed. If that is all okay, then happy hunting on Ebay. And for Leica S owners, here is a quick comparison of the [Leica APO-Tele-Elmar-S 180mm f/3.5 Lens](#) vs the Mamiya 200mm F2.8 APO, both shot wide open -



Leica 180mm Elmar S @ F3.5

Mamiya 200mm APO @ F2.8

In terms of bokeh and background blur, the Mamiya 200mm F2.8 APO has the advantage of 20mm more reach plus a 2/3-stop faster aperture. Both lenses are nearly identical in wide open sharpness at the center (and that is all I compared). Even when framing is normalized (the Mamiya 200 APO pulled back lightly), the Mamiya 200mm APO still has more (smoother) background blur. The Leica 180mm S has the edge in the minimum focus distance - 1.5 meters for the Leica vs 2.5 meters for the Mamiya. The Mamiya 200mm APO easily wins the 'bang-for-the-buck' contest, but the Leica 180mm S does offer auto focus, auto aperture and EXIF.

 <p>Canon EF 200mm f/2.8L II USM Lens \$749.00</p>	 <p>FotodioX Mamiya 645 Lens to Fujifilm G-Mou... \$111.97</p>	 <p>Fujifilm GFX 50S Medium Format Mirrorless ... \$5,849.95</p>
 <p>Leica S Adapter for Mamiya 645 Lens for S2... \$750.00</p>	 <p>Leica S (Typ 007) Medium Format DSLR Camer... \$19,995.00</p>	 <p>Metabones Mamiya 645 Lens to Leica S Camer... \$299.00</p>

For dSLR users, Canon makes great auto-focus lenses and the same money (or less) buys a brand new [Canon 200mm F2.8 L USM](#) or [Canon 135mm F2 L USM](#). Since these are auto-focus lenses, they are easier to shoot. And with Canon now using the LCD overlays in the viewfinder in most of the dSLRs, swapping the viewfinder screen to a micro-prism viewfinder screen is not possible, thus making manual focus less attractive. If a friend asked what to buy for their Canon dSLR, I would recommend a Canon lens over the Mamiya. As a Canon 1Ds Mark III owner, I use the dSLR for its speed and ease, and a fully manual 200mm telephoto is not in sync with those preferences. Nailing focus with the Mamiya 200mm APO @ F2.8 on the Canon 1Ds Mark III is not easy (at least not for me), and mis-focused pictures spoil most of the fun.

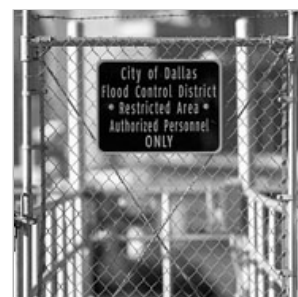
This is an easy review to wrap-up --- I like the Mamiya 200mm APO - it is that simple. I have tried other Mamiya M645 lenses, such as the 35/3.5, 45/2.8, 80/1.9, 110/2.8 and 150/2.8. Those lenses did little to impress me, but when when it comes to the Mamiya 645M 200mm F2.8 APO and Mamiya 645M 300mm F2.8



Mamiya 645M 200mm F2.8 APO  
Mamiya ZD • F2.8 • 1/220 • ISO 50



Mamiya 645M 200mm F2.8 APO  
Leica M-246 • F8 • 1/500 • ISO 1600



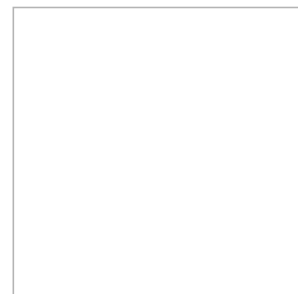
Mamiya 645M 200mm F2.8 APO  
Leica M-246 • F2.8 • 1/750 • ISO 640



Mamiya 645M 200mm F2.8 APO  
Leica M-246 • F8 • 1/1000 • ISO 2500



Mamiya 645M 200mm F2.8 APO  
Leica M-246 • F5.6 • 1/500 • ISO 2500



APO, their optical performance and character have proven to be worth the extra effort of a 100% manual lens. And with EVF based mirrorless medium format cameras like Fujifilm's [GFX 50S](#) coming to market, accurate focusing will be very easy.



Mamiya 645M 200mm F2.8 APO  
Leica M-246 • F8 • 1/750 • ISO 1250



Mamiya 645M 200mm F2.8 APO  
Leica M-246 • F8 • 1/750 • ISO 1250