

Sharp Eyes for Large Format Photography



The lens is a primary link in the quality chain that begins with the initial conception and ends with the printed page. Sinar supplies lenses under its own trademark Sinaron that are designed specifically for its camera system and manufactured by the Rodenstock Precision Optics Works. These lenses are subjected to strict inspection controls at Sinar and then mounted with exacting care on lens boards, either with between-the-lens shutters, or with automatic aperture control for the DB version of behind-the-lens shutters.

In lenses for 35 mm and for medium format photography, aperture is often regarded as a primary criterion, but in lenses for large format photography it is more the image circle on the focusing screen and the angle subtended by that image circle that matters. The larger that circle, the greater the freedom for camera adjustments. This becomes a decisive factor especially for the larger camera formats. The Sinar assortment of lenses includes the following types of lenses:

- **Sinaron-S Lenses:** Standard lenses that feature an enlarged image circle with an angle of view of 72°, which allows greater freedom for camera adjustments than conventional normal focal lengths that have an angle of view of only 53°.

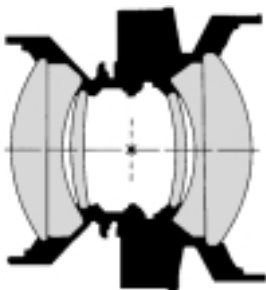
- **Sinaron-SE Lenses:** This design represents state of the art technology, incorporating significant improvements over earlier comparable lens types in terms of image quality, especially in the close-up range. Stray light within the lens amounts to less than one percent, producing better contrast in the images. The angle of view subtended by its image circle was increased to 75°. Color correction was improved still further by the use of ED glass types.

- **Sinaron-W Lenses:** Professional lenses with an especially large image circle or angle of view of 100°. The six-element designs with focal lengths of 90, 115, 155 and 200 mm have a maximum aperture of f/6.8, and the eight-element designs with focal

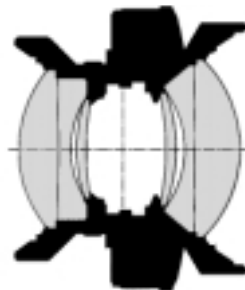
lengths of 65, 75 and 90 mm have a maximum aperture of f/4.5. They produce a very bright focusing image with uniform illumination all the way into the corners.

- **Sinaron-WE Lenses:** These eight-element lenses with extremely short focal lengths have a picture angle of 110° at f/16 and they are available in DB Auto Aperture Mounts and also with a recessed plate and a Copal between-the-lens shutter. As is the case with Sinaron-SE lenses, their apochromatic correction ensures the highest imaging quality across the entire image circle. Sinaron-WE lenses are available with focal lengths of 45 and 55 mm, with a maximum aperture of f/4.5.

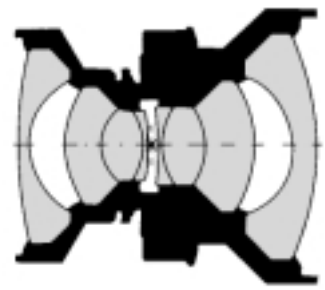
- **Apo-Sinaron Lenses:** When objects are to be reproduced in actual size, the Apo-Sinaron lenses are recommended for the best performance. Apo-Sinaron lenses are available with focal lengths of 240, 300, 360, 480 and 600 mm, all with a maximum aperture of f/9.



Sinaron-S



Sinaron-SE



Sinaron-W

● **Macro-Sinaron Lenses:** The primary concern in close-up photography is not the image circle or angle of view, but image quality. The 180 mm Macro-Sinaron lens is optimally corrected for reproduction ratios ranging from 2:1 to 1:5.

● **Sinaron Digital Lenses:** Digital photography with CCD area sensors requires special lenses that are designed for optimal performance, in terms of focal lengths and resolution, with the small image format with a diagonal in the range of 35 to 55 mm. In order not to restrict camera adjustment capabilities, these lenses are mounted on the back of the lens standard, inside of the camera bellows.

Lenses supplied by Sinar are available in four different mounts. Auto Aperture Mounts DB, DBM and DBS offer the greatest ease of operation because of automatic aperture control, while Copal between-the-lens shutters are cost-efficient entry solutions on which all settings are manual.

● **Auto Aperture Mount DB:** Most convenient to operate, with automatic aperture control up to f/128 with the Sinar Expolux Shutter, and up to f/45 with the Sinar Auto Aperture Shutter. Existing lenses can be fitted with Auto Aperture Mount DB by means of the appropriate conversion kit. Auto Aperture Mount DB is the standard mount for all Sinaron lenses.

● **Auto Aperture Mount DBM:** In addition to its automatic function, this mount has



Sinaron lenses are available in various versions and focal lengths. Auto Aperture (DB) is the standard mount for all Sinaron lenses.

manual aperture settings for f-stops smaller than f/45. Existing lenses can be fitted with Auto Aperture Mount DBM by means of the appropriate conversion kit.

● **Auto Aperture Mount Special DBS:** Preserves complete wide angle camera adjustment capabilities, especially with the Expolux Shutter. Precludes any danger of vignetting by the shutter with 155 and 200 mm Sinaron-W lenses and with 165 and 210 mm Super Angulon lenses. Existing lenses can be fitted with Auto Aperture Mount DBS at the Sinar factory.

● **Copal between-the-lens Shutter:** Of course, Sinaron lenses can also be fitted with Copal between-the-lens shutters. It should be remembered, however, that every shutter functions within certain individual tolerances, which can manifest themselves as exposure variations in critical photographic situations when lenses are changed. One also has to do without the operating convenience provided by Sinar behind-the-lens shutters.

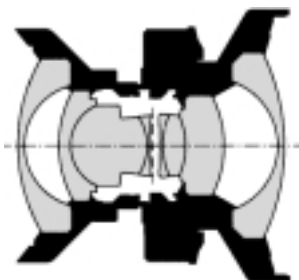
Full concentration on the photograph: The following procedure has to be observed when working with lenses equipped

with Copal between-the-lens shutters: The shutter and the aperture have to be opened manually for focusing. Just before the exposure is made, the shutter and the aperture have to be closed again by hand, the shutter has to be cocked and the shutter speed has to be set. Now everything is ready

for the actual exposure to be made. For checking the focus between exposures, the shutter and the aperture have to be opened and closed manually.

The procedure is different with lenses in (DB) auto-aperture mounts. Thanks to the automatic aperture and film holder features of Sinar behind-the-lens shutters (also see Chapter 5) the intermediate shutter manipulations are eliminated. The working aperture and the shutter speed are set at the beginning and the camera does the rest. The photographer is free to devote his full attention to the subject.

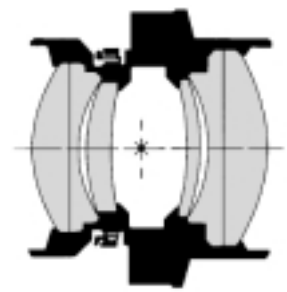
The quality chain – from camera to lens, filters, stray light protection, film holders, all the way to the film itself – is only as strong as its proverbial weakest link. Sinar has always strived to eradicate the weakest spots. Not only were all Sinar products rigorously reviewed to that effect, but stricter demands were also placed on suppliers of components. In recent years, advances in computerized lens design using new types of optical glass and in multiple coating techniques have led to significant improvements in the quality of lenses.



Sinaron-W



APO-Sinaron



Macro-Sinaron

SINARON LENSES IN AUTO APERTURE MOUNTS (DB) ON LENS BOARDS

446.85. ...

Lenses fitted with Auto Aperture Mounts (DB) with automatic aperture control. The aperture is controlled automatically by behind-the-lens shutters Sinar Expolux 522.21.001, Sinar Auto Aperture 521.31 and Sinar Digital 522.11.

This does away with time-consuming manual settings.



AUTO APERTURE MOUNT (DB) CONVERSION KIT ON LENS BOARD

446.75. ...

For do-it-yourself fitting of an existing lens with Auto Aperture Mount DB. Supplied complete with assembly instructions.

- When ordering, please provide accurate information about the brand, type, focal length and mount of the lens that is to be converted.



SINARON LENSES IN AUTO APERTURE MOUNTS WITH MANUAL OVERRIDE (DBM) ON LENS BOARDS

446.86. ...

Same as 446.85. ..., but with added manual override (especially with apertures smaller than f/45 with the mechanical behind-the-lens shutter Sinar Auto Aperture Shutter 521.31).

- Not necessary for Sinar Expolux Shutter 522.21.001, because this shutter automatically sets apertures all the way down to f/128 (depending on the particular lens being used).



AUTO APERTURE MOUNT WITH MANUAL OVERRIDE (DBM) CON- VERSION KIT ON LENS BOARD

446.76. ...

For do-it-yourself fitting of an existing lens with an Auto Aperture Mount with Manual Override DBM that also works for apertures smaller than f/45 with the mechanical behind-the-lens shutter Sinar Auto Aperture Shutter 521.31.

Supplied complete with assembly instructions.

- Not necessary for Sinar Expolux Shutter 522.21.001, because this shutter automatically sets apertures all the way down to f/128 (depending on the particular lens being used).

- When ordering, please provide accurate information about the brand, type, focal length and mount of the lens that is to be converted.



SINARON LENSES IN SPECIAL AUTO APERTURE MOUNTS (DBS) ON LENS BOARDS

446.81. ...

SPECIAL AUTO APERTURE MOUNT (DBS) CONVERSION KIT ON LENS BOARD

446.71. ...

Lenses fitted with Special Auto Aperture (DBS) Mounts and Conversion Kit for existing lenses, respectively. Permits the use of Sinar Expolux Shutter as a between-the-lens shutter. Prevents vignetting of large image circles with short focal lengths.

The two parts of the DBS board are joined by a hinge. The lens standard with the shutter is placed between the two parts. Shortest exposure time: $\frac{1}{8}$ sec. (except for 210 mm f/8 Super Angulon: $\frac{1}{500}$ sec.) This Special Auto Aperture Mount (DBS) is suitable for the following lenses:

- 200 mm f/6.8 Sinaron-W
- 155 mm f/6.8 Sinaron-W
- 165 mm f/8 Super Angulon
- 210 mm f/8 Super Angulon

- Conversions and calibrations to be performed at the Sinar factory in Switzerland.



Technical details and order numbers for Sinaron lenses are listed in the tables on pages 4-5 to 4-7.

SINARON LENSES IN COPAL SHUTTERS ON LENS BOARDS

441.83. ...

Sinaron Lenses in Copal between-the-lens shutters. These lenses can also be used with a Sinar behind-the-lens shutter (see page 5-5).

- Subsequent conversion to an Auto Aperture Mount (DB) or (DBM) is possible at any time.

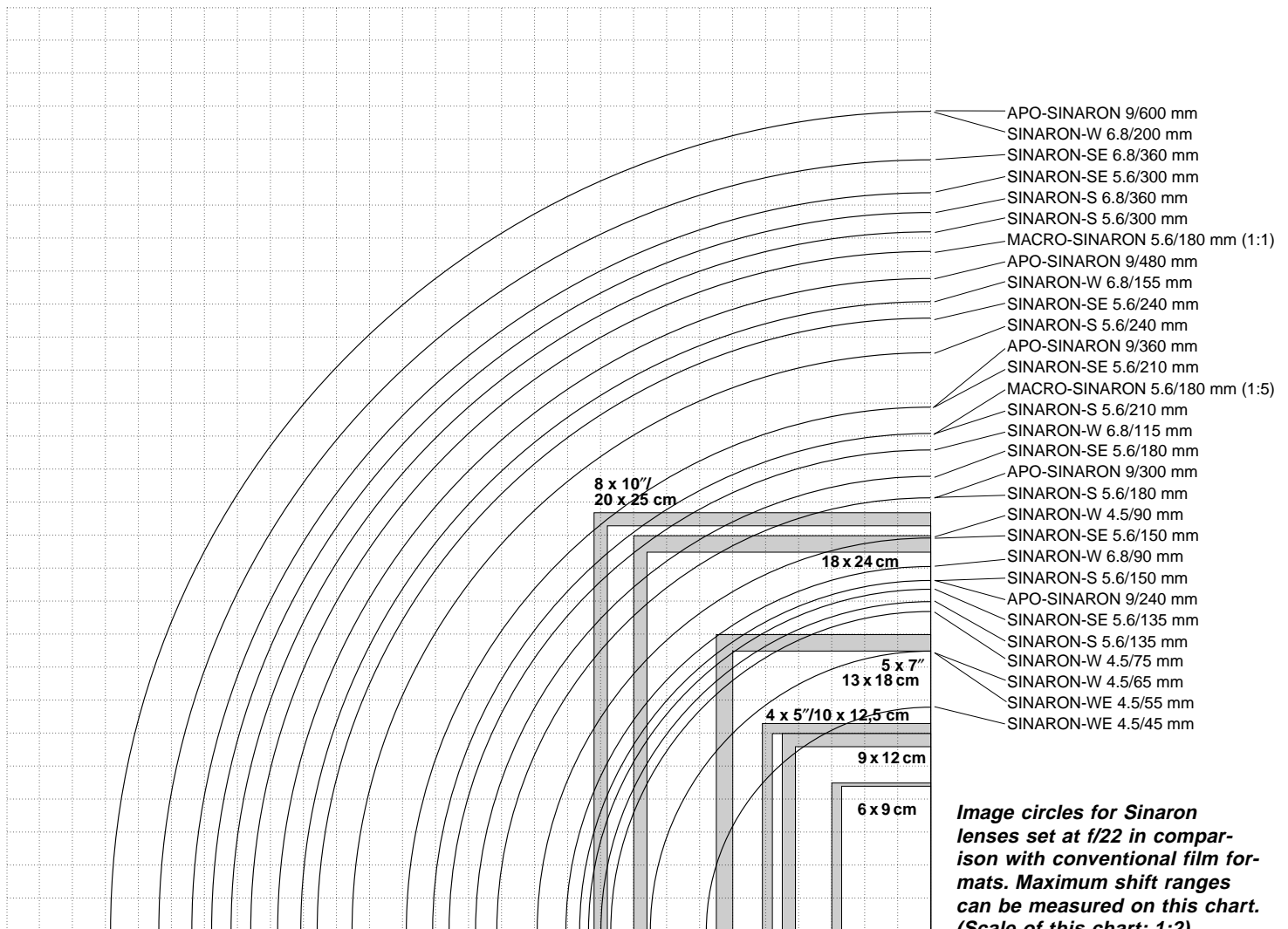


LENS BOARD READY TO MOUNT LENS

441.50. ...

With appropriate opening and tube for mounting assorted lenses, for use with between-the-lens shutters.

- When ordering a lens board, please provide accurate information about the type, focal length and mount of the lens to be mounted.



Sinar Lenses for Large Format Photography

Lens Type	1) Order Number (last 3 digits)	Focal Length in mm	Angle of View at f/22	Circle in mm at f/22	Smallest Aperture	6) Shutter Size (Copal)	Fitted with: ● = DB ■ = DBM ▲ = DBS	Conver- sion Kit: ● = DB ■ = DBM ▲ = DBS	Filter Thread (mm)	Mount Ø front/rear (mm)	Shift range in mm for horizontal format (for vertical format reverse the numbers)								Remarks
											6x9cm		4x5"		13x18cm		8x10"		
											↔	↕	↔	↕	↔	↕	↔	↕	
Sinaron-S 1:5.6	558	135	72°	200	64	0	●	●	40.5 x 0.5	42 / 40.5	52	62	28	32	–	–	–	–	
	560	150	72°	214	64	1	●	●	49 x 0.75	51 / 42	59	70	36	41	2	3	–	–	
	562	180	72°	262	64	1	●	●	58 x 0.75	60 / 51	84	95	62	68	30	38			
	564	210	72°	301	64	1	●	●	67 x 0.75	70 / 60	104	116	83	90	52	63	–	–	
	566	240	72°	350	45	3	●	●	77 x 0.75	80 / 70	129	141	108	116	79	92	23	28	
	568	300	72°	425	64	3	■	■	86 x 1	90 / 80	167	180	147	156	118	134	67	77	
1:6.8	570	360	64°	435	64	3	■	■	105 x 1	110 / 80	172	185	152	161	123	139	72	83	
Sinaron-SE 1:5.6	658	135	75°	208	64	0	●	●	49 x 0.75	51 / 48	56	66	32	37	–	–	–	–	
	660	150	75°	231	64	0	●	●	49 x 0.75	51 / 51	68	79	45	50	12	16	–	–	
	662	180	75°	276	64	1	●	●	67 x 0.75	70 / 60	91	103	69	76	38	47	–	–	
	664	210	75°	316	64	1	●	●	72 x 0.75	75 / 65	112	124	91	98	60	72	2	3	
	666	240	75°	372	45	3	●	●	86 x 1	90 / 80	140	153	120	128	90	104	36	43	
	668	300	75°	448	64	3	■	■	100 x 1	105 / 80	178	192	159	168	130	146	79	91	
1:6.8	670	360	68°	468	64	3	■	■	112 x 1.5	117 / 80	188	202	169	178	140	157	90	102	
Sinaron-W 1:4.5	514	65	105°	170	45	0	●	●	58 x 0.75	60 / 51	36	45	10	12	–	–	–	–	2), 3) 2) 2)
	516	75	105°	195	45	0	●	●	67 x 0.75	70 / 60	49	59	25	29	–	–	–	–	
	518	90	105°	236	45	1	●	●	82 x 0.75	85 / 70	71	81	48	54	16	20	–	–	
	538	90	102°	221	45	0	●	●	67 x 0.75	70 / 60	63	73	40	45	7	9	–	–	
	540	115	104°	291	45	1	●	●	82 x 0.75	85 / 70	99	111	77	85	47	57	–	–	
	544	155	102°	382	45	1	▲	▲	105 x 1	110 / 90	145	158	125	133	95	110	42	50	
546	200	102°	495	64	3	▲	▲	135 x 1	140 / 115	200	212	178	188	154	171	105	118		
Sinaron–WE 1:4.5	502	45	110°	131	32	0	● 7)	–	67 x 0.75	60 / 60	15	20	–	–	–	–	–	–	at f/16
	504	55	110°	163	45	0	● 7)	–	67 x 0.75	70 / 60	32	40	5	7	–	–	–	–	
Apo-Sinaron 1:9	618	240	48°	212	90	1	■	■	49 x 0.75	51 / 37.5	58	68	35	39	1	2	–	–	8) 4)
	620	300	48°	264	90	1	■	■	49 x 0.75	51 / 37.5	85	96	63	70	32	40	–	–	
	622	360	48°	318	90	3	■	■	58 x 0.75	60 / 58	113	125	92	99	61	73	3	4	
	626	480	46°	396	90	3	■	■	67 x 0.75	70 / 60	152	165	132	141	103	118	50	59	
	628	600	46°	496	90	– ⁹⁾	– ⁹⁾	– ⁹⁾	95 x 1	105 / 90	202	216	183	193	155	172	106	119	
Macro-Sinaron-SE 1:5.6	590	180	70°	1:5 ⁵⁾ 302	64	1	●	●	67 x 0.75	70 / 54	104	116	83	90	52	63	–	–	
			60°	1:1 415							161	174	142	150	113	128	61	70	

1) Complete order number for a lens in a Copal between-the-lens shutter: 441.83. + these last 3 digits.

Complete order number for a lens in Auto Aperture Mount (DB=●): 446.85. + these last 3 digits.

Complete order number for a lens in Auto Aperture Mount (DBM=■): 446.86. + these last 3 digits.

Complete order number for a lens in Special Auto Aperture Mount (DBS=▲): 446.81. + these last 3 digits.

Complete order number for a conversion kit for Auto Aperture Mount (DB=●): 446.75. + these last 3 digits.

Complete order number for a conversion kit for Auto Aperture Mount (DBM=■): 446.76. + these last 3 digits.

Complete order number for a conversion kit for Special Auto Aperture Mount (DBS=▲): 446.71. + the last 3 digits.

2) Maximum aperture is f/5.6 when used with Sinar Auto Aperture behind-the-lens Shutter 521.31.

3) In Auto Aperture Mount (DB), this lens can only be focused at ∞ when used with Wide Angle Bellows 2.

4) With manually set aperture.

5) Image circle for reproduction ratios 1:5 and 1:1.

6) Shutter speeds, size 0: 1/500–1 sec; size 1: 1/400–1 sec; size 3: 1/125–1 sec.

7) Identical to Sinaron Digital Lens (See page 4-5). Center Filters can not be used.

8) The largest possible aperture in DB Auto Aperture Mounts is f/11.

9) The aperture is set manually.

Sinaron Digital Lenses

SINARON DIGITAL LENSES IN AUTO APERTURE (DB) MOUNTS ON LENS BOARDS

446.85.119 – 164

Sinaron Digital Lenses with Auto Aperture Mounts (446.85.119–164) were designed for use with digital single-chip CCD backs. Resolving power and selection of focal lengths are tailored specifically to the small size of the CCD array. In order to reduce stray light and to maintain the best possible camera adjustment capabilities, these lenses are mounted inside the camera.



Sinaron Digital Lenses in DB¹

For use with the Sinarcam2, the Aperture Control Sinarcam 1 and also with Sinar Expolux shutters on Sinar view cameras.

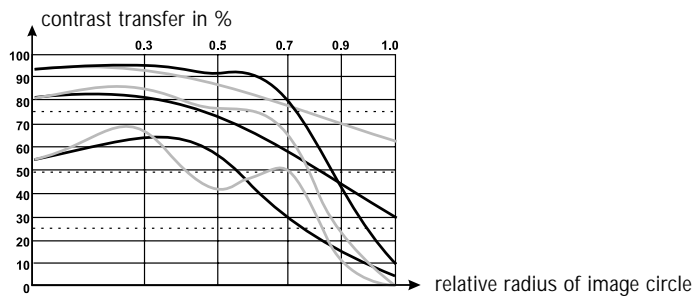
Lens Type	Order Nr.	Compar- able Focal Length ³ with 4×5″	Angle of View	Image Circle	Shift Range ³	Aperture Range (in Sinar Auto Aper- ture Mount)	Scale of Reproduction		
			Stopped down 2f-Stops (at 1:∞)				Opti- mum	Recommended Range	Maximum Range
Sinaron Digital 4.5/35 mm DB	446.85.119	120 mm	85°	67 mm	12 mm	4.5 – 32	1:30	from 1:5	1:∞
Sinaron Digital 4.5/45 mm DB	446.85.123	150 mm	82°	80 mm	22 mm	4.5 – 32	1:30	from 1:5	1:∞
Sinaron Digital 4.5/55 mm DB	446.85.125	210 mm	83°	101 mm	33 mm	4.5 – 32	1:30	from 1:5	1:∞
Sinaron Digital 4/80 mm DB	446.85.128	300 mm	58°	92 mm	28 mm	4 – 32	1:10	1:2 – 1:15	1:30
Sinaron Digital 5.6/90 mm DB	446.85.129	300 mm	76°	140 mm	53 mm	5.6 – 45	1:20	from 1:5	1:∞
Sinaron Digital 4/105 mm DB	446.85.130	360 mm	54°	107 mm	36 mm	4 – 32	1:6	1:2 – 1:15	1:30
Sinaron Digital 5.6/135 mm DB	446.85.133	480 mm	58°	150 mm	56 mm	5.6 – 64	1:10	from 1:5	1:∞
Sinaron Digital 4.8/180 mm DB ²	446.85.136	600 mm	50°	168 mm	67 mm	4.8 – 32	1:6	1:2 – 1:10	1:30
Sinaron Digital Macro 5.6/120 mm DB	446.85.131	400 mm	46°	122 mm 204 mm 305 mm	44 mm 85 mm 137 mm	5.6 – 45	1:5 1:1 2:1	1:5 – 2:1	1:5
Sinaron Digital HR 4.0/60 mm DB ⁴	446.85.164	210 mm	60°	70 mm	15 mm	4 – 32	1:30	from 1:10	1:∞

¹ Not suitable for use with external filter wheels (vignetting).

² In order to attain reproduction ratios greater than 1:2 with the 180 mm lens, the Sinar e Digital Camera has to be used with Rail Clamp e 411.51.

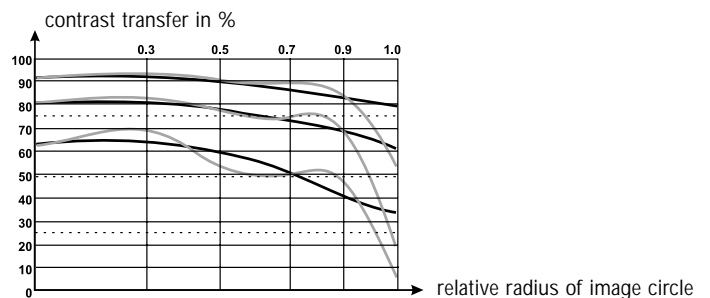
³ Valid for all professional digital backs with chip sizes of 24x36 mm or 30x30 mm. Adjustment ranges with Sinarback22 will be up to 6 mm larger.

⁴ Special lens with very high resolving power.



Conventional Lens

The MTF (modulation transfer function) curve shows the contrast transfer (in dependence of the image circle radius) of a 300 mm conventional view camera lens at (top to bottom) 5, 10 and 20 line pairs/mm.



Sinaron Digital Lens

This curve shows the contrast of an 80 mm Sinaron Digital lens (equivalent to 300 mm in 4x5") at 10, 20 and 40 line pairs/mm. Note that the digital lens performs better at 40 lp/mm than the conventional lens does at 20 lp/mm. Thanks to the better contrast and resolution Sinaron Digital lenses are best suited for digital photography.

SINARON DIGITAL LENSES WITH FOCUSING MOUNTS (EF) ON LENS BOARDS

445.83.103 – 113

Fast, contrasty and apochromatically corrected Sinaron Digital lenses optimized for digital imaging in focusing mounts for practical application on the compact versions of all Sinarcams.



Sinaron Digital Lenses in EF*

For use on the compact versions of all Sinarcams

Lens Typ	Order Number	Focusing Range	Image Circle at f/11	Aperture Range	Scale of Reproduction			Filter Ø
					Optimum	Recomm. Range	Max. Range	
Sinaron Digital 4,5/45 mm EF	445.83.103	0.4 m – ∞	125 mm	4.5 – 32	1:30	from 1:5	1:∞	67 mm
Sinaron Digital 5,6/90 mm EF	445.83.109	1.3 m – ∞	140 mm	5.6 – 45	1:30	from 1:5	1:∞	67 mm
Sinaron Digital 5,6/135 mm EF	445.83.113	2.7 m – ∞	150 mm	5.6 – 64	1:30	from 1:5	1:∞	49 mm
Sinaron Digital Zoom 2.8/35-80 mm**	445.81.060	0.6 m – ∞	43 mm	2,8 – 22	–	from 1:15¹	1:∞¹	62 mm
					–	from 1:5²	1:∞²	
* EF = Focusing Mount. ** The respective lens board 556.63.011 has to be ordered separately.					¹ at 35 mm, ² at 80 mm			

LENS ADAPTER BOARDS FOR THE SINARCAM COMPACT

556.63.010 – 556.64.061

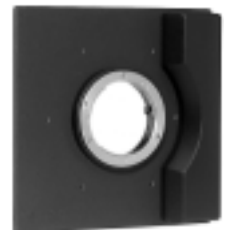
When the Sinarcam is used in its compact version, adapter boards permit the use of other lenses in addition to the Sinaron Digital Lenses, such as Hasselblad, Mamiya, Nikon, Olympus and Leica.

- Lens boards with automatic spring-loaded aperture control (auto) automatically stop the lens down to the preselected working aperture when the live focusing image is turned off, thus enhancing the ease of operating the Sinarcam Compact even further.

- A special shifting board that permits perspective correction is available for Hasselblad- and Mamiya 645 lenses.



digital man



digital auto



shift

Lens Adapter Boards		
For lenses by	Description	Order Number
Sinar	Sinaron Bayonet Board, digital man	556.63.010
	Sinaron Bayonet Board, digital auto	556.63.011
Nikon	Nikon Bayonet Board, digital auto	556.63.021
Leica	Leica R Bayonet Board, digital man	556.64.030
Hasselblad	Hasselblad Shift Board, digital man	556.64.051
Mamiya	Mamiya 645 Shift Board, digital man	556.64.061

GRADUATED FILTERS

(Center Filter)

440.99.214 – 244

Concentrically graduated neutral density filters whose density diminishes from the center towards the transparent edge. Recommended for use when short-focal-length Sinaron-W lenses are used with critical subjects (for instance with large uniformly colored area like a blue sky).



Lens Thread	Center Filter	Filter thread	Application
M58x0.75	440.99.236	M77x0.75	Sinaron-WE 4.5/45 mm (first serie) Sinaron-W 4.5/65 mm Sinaron-W 6.8/75 mm
M67x0.75	440.99.214	M86x1	Sinaron-WE 4.5/45 mm Sinaron-WE 4.5/55 mm Sinaron-W 4.5/75 mm Sinaron-W 6.8/90 mm
M82x0.75	440.99.218	M112x1.5	Sinaron-W 4.5/90 mm Sinaron-W 6.8/115 mm
M105x1	440.99.244	M127x1	Sinaron-W 6.8/155 mm

CODE SINARON DB/DBM

440.91. ... / 440.92. ...

LENS CODES FOR LENSES OTHER THAN SINARON LENSES

440.90.999

Code Plates for automatic recognition of Sinaron lenses with Aperture Mounts (DB/DBM) when used with a Sinar Expolux Shutter.

Order numbers for Code Plates for Sinaron lenses (DB/DBM):

440.91./440.92. plus the last three digits of the order number for the lens (see table on page 4-5).

- When ordering Code Plates for lenses other than Sinaron lenses, please provide accurate information about the type and the focal length of the lens.



LINHOF LENS BOARD ADAPTER

441.91

For using lenses mounted on Linhof lens boards on a Sinar camera (from Linhof Technika IV and V, Master Technika and Super Technika cameras). Cannot be combined with Sinar behind-the-lens shutters.



LENS BOARD HOLDER

531.41

To prevent the lens board from dropping out when the latch is released accidentally. For attaching to the frame of the lens standard.

