RODENSTOCK

LENSES
FOR ENLARGING & REPRODUCTION

To reproduce a photograph as a picture on paper requires two optical imaging processes: One to put the image onto the film and one to enlarge the image onto the paper. The second image reproduction process is no less important for the quality of the final result than the first. When selecting your enlarging lens, you therefore need to be just as critical as when you purchase your high-quality taking lens. In both cases, only the best can be good enough.

Modern cameras, films and processing methods provide a good basis for excellent photographs. Even though photographic equipment and materials already had a very high performance standard, over the past few years it has been possible to extend this standard even further - with visible results. This high quality level must also be maintained in the developing process.

In the transfer "chain" from the negative or transparency to the paper photograph, the most important quality link is the lens. It has to transfer the information contained in the film image onto paper - ideally without any loss at all. Although the laws of physics mean that this demand can only be met approximately, it still remains Rodenstock's objective in the development of new lenses.

Only a lens which has been designed specifically to meet the different demands (film size, enlarging factor, etc.) and which reproduces the image with as little loss as possible can guarantee convincing photographic results in the enlargement - with all the details which your

high-quality taking lens has captured on the film.

The efforts made by Rodenstock are reflected in a variety of quality features which offer practical benefits in the use of the lenses:

- All lenses are eminently suitable for photographs in black and white or colour,
- The reproduction quality is even over the entire film area - right up to the edges and the corners and not just in the picture centre.
- The high reproduction quality is maintained without visible loss even at high scale ranges.
- The high speed (as the full aperture is popularly called) allows problem-free focusing.
- The almost complete elimination of flare ensures high-contrast reproduction.
- The lack of vignetting at the working aperture (depending on the lens approx. 2 stops from the full aperture) guarantees a very uniform illumination distribution right up to the edges.
- Distortion is corrected so well that it is no longer visible in practice.
- The minimal focal length spread (well below 1%) means that the lenses can be used without problems in units with automatic focus or in printers.

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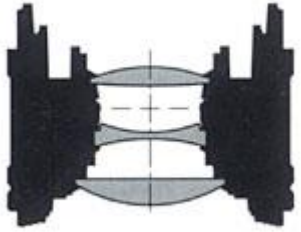
Rogonar | The low-priced starter for the amateur dark room

The Rogonar forms a solid base for the "first steps" in amateur developing. This lens is already a standard feature of many low-price enlarging units.

With 3 free elements the lens has a relatively simple optical design. But when used for a relatively small scale range and at a working aperture of 11, it still offers good results.

The high full aperture for a 3 element lens ensures simple and precise focusing.

Optical design: 3 elements / 3 groups (Rogonar 50mm f/2,8)



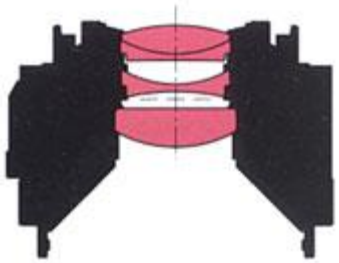
For technical data see **Table 1**

Rogonar-S | The lens with the optimal price performance ratio for standard prints

The universal lens Rogonar-S has a relatively simple optical design and so a very attractive price. But the very high performance capability of this lens make it ideal for the high requirements of demanding amateurs or professional developing labs.

The main application area of the Rogonar-S is enlargement in the scale range required for photographs in the standard formats. In this range the lens with 4 elements in 3 groups provides high-quality results with only low light fall-off to the picture margin.

Optical design: 4 elements / 3 groups (Rogonar-S 50mm f/2,8)



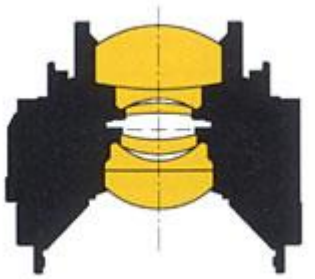
For technical data see **Table 1**

Rodagon | The all-round lens for professional quality in the developing lab

The lens type Rodagon, with brilliant reproduction over the whole scale range of conventional enlargers, has become the universal workhorse of both demanding amateurs and professionals in practical use.

The 6 element design guarantees the resolution of the finest details while maintaining a uniformly high contrast from the picture centre to the edges. As the lens is nearly independent with regard to scale, top quality is ensured from mini-prints right up to high enlargements.

Optical design: 6 elements / 4 groups (Rodagon 50mm f/2,8)



For technical data see **Table 1**

Rodagon-WA | Professional quality with a clearly smaller projection distance

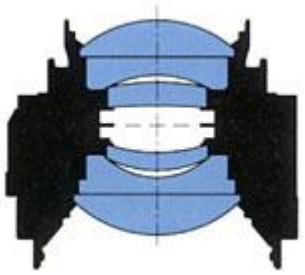
The Rodagon-WA has a shorter focal length and a large angle of view and achieves a 70% larger projection area than conventional enlarging lenses with standard focal lengths. It is therefore eminently suitable for section enlargements on units with short columns. Clumsy wall or floor projections can so be avoided.

Thanks to the shorter projection distance the negative carrier and the filter adjustment controls can still be operated easily when high enlargements are required.

The 6 element Rodagon-WA provides the same reproduction performance as the Rodagon lens type.

Optical design: 6 elements / 4 groups (Rodagon-WA 80mm f/4,0)

For technical data see **Table 1**



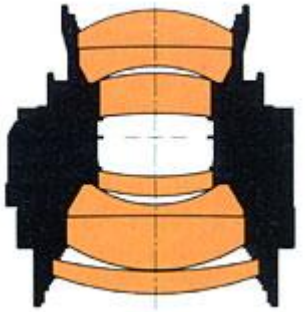
Apo-Rodagon-N | The unbeatable lens for the highest demands

The apochromatically corrected high-performance lenses of the Apo-Rodagon-N series guarantee perfect results which will satisfy the highest demands.

The correction of the 7 element lenses (6 elements for focal length 50 mm) was given highest priority and so ensures the full elimination of irritating visible colour fringes on high-contrast borders. All monochromatic imaging errors have also been greatly reduced to give this lens type its unsurpassed image reproduction performance.

Optical design: 7 elements / 5 groups (Apo-Rodagon-N 105mm f/4,0)

For technical data see **Table 1**

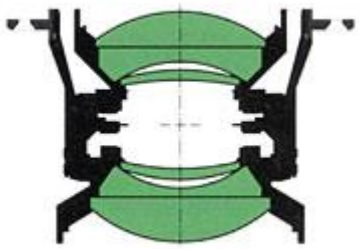


Rodagon-G | The special lens for large scales

For wall-size multi-roll enlargements and poster formats the Rodagon-G is the best choice: It has been optimised for extremely large reproduction scales and surpasses the quality of all conventional enlarging lenses for these scales. The 50 mm lens, for example, proves its superiority from scales of around 15:1, while the Rodagon-G lenses with longer focal lengths demonstrate their class from scales of around 10:1 or 8:1 (see table).

At these reproduction scales focusing is often difficult due to the low projection illumination. The very high contrast of the 6 element lens - even at full aperture - makes focusing much easier with this lens.

Optical design: 6 elements / 4 groups (Rodagon-G 210mm f/5,6)



For technical data see **Table 1**

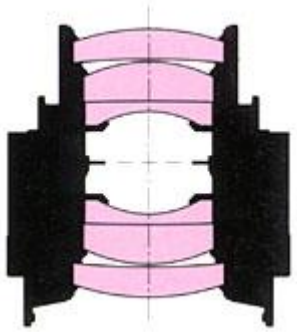
Apo-Rodagon-D | Duplication with practically no loss in quality

This lens is specialised for the duplication of transparencies or for macro photographs at a reproduction scale of around 1:1.

The Apo-Rodagon-D is characterised by superb reproduction performance. Reproduction without colour fringes right up to the picture corners and (thanks to the symmetrical design) absolute freedom of distortion at a scale of 1:1 make this 6 element lens the professional duplication solution.

The Apo-Rodagon-D also supplies fantastic results in conjunction with an extension bellows or helical focusing as a macro lens for the scale of 1:1 on reflex cameras.

Optical design: 6 elements / 4 groups (Apo-Rodagon-D 75mm f/4,0)



For technical data see **Table 1**

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TECHNICAL DATA OF THE LENSES - TABLE 1

1	Lens
2	Max. recommended film size
3	Recommended scale (optimal)
4	Lowest aperture
5	Pre-selection aperture
6	Click-stop disable
7	Illuminated stop display
8	Filter thread, mm
9	Flange focal length at infinity, mm
10	Overal length, mm
11	Maximum lens diameter, mm
12	Screw thread, mm
13	Contact area to rear edge, mm

(to get a tip move the mouse pointer to column number)

Rogonar												
1	2	3	4	5	6	7	8	9	10	11	12	13
50 mm f/2,8	24x36mm	2-8x (4x)	16			+	-	38,0	32,0	42,0	39,0	6,5
75 mm f/4,5	6x6cm	2-6x (4x)	16			+	-	63,1	32,0	42,0	39,0	6,5

Rogonar-S												
1	2	3	4	5	6	7	8	9	10	11	12	13
25 mm f/4,0	13x17mm	10-30x (20x)	16				30,5	23,0	28,0	40,5	32,5	4,5
35 mm f/4,0	18x24mm	10-30x (20x)	16				30,5	34,0	28,0	40,5	32,5	4,5
50 mm f/2,8	24x36mm	2-10x (4x)	16	+	+	+	40,5	47,0	37,5	50,0	39	6,5
60 mm f/4,5	40x40mm	2-10x (4x)	22	+	+	+	40,5	52,5	36,5	50,0	39	5,9
75 mm f/4,5	6x6cm	2-10x (4x)	22	+	+	+	40,5	65,5	36,5	50,0	39	5,9
90 mm f/4,5	6x7cm	2-8x (4x)	22	+	+	+	40,5	80,0	36,5	50,0	39	5,9
105 mm f/4,5	6x9cm	2-8x (4x)	22	+	+	+	40,5	95,0	36,5	50,0	39	5,9
135 mm f/4,5	9x12cm/4x5"	2-6x (4x)	32			+	52	129,5	38,0	60,0	50	11,3
150 mm f/4,5	9x12cm/4x5"	2-6x (4x)	32			+	52	138,0	36,8	60,0	50	9,8

Rodagon												
1	2	3	4	5	6	7	8	9	10	11	12	13
28 mm f/4,0	18x24mm	5-30x (20x)	16				30,5	27,7	30,0	40,5	32,5	6,7
35 mm f/4,0	24x24mm	5-30x (20x)	16				30,5	35,6	32,5	40,5	32,5	9,0
50 mm f/2,8	24x36mm	2-15x (10x)	16	+	+	+	40,5	43,5	43,5	50,0	39,0	13,0
60 mm f/4,0	40x40mm	2-10x (10x)	22	+	+	+	40,5	56,0	41,0	50,0	39,0	10,0
80 mm f/4,0	6x7cm	2-10x (6x)	22	+	+	+	40,5	74,7	44,5	50,0	39,0	13,5
105 mm f/5,6	6x9cm	2-10x (6x)	32	+	+	+	40,5	99,5	41,0	50,0	39,0	10,5
135 mm f/5,6	9x12cm/4x5"	2-10x (6x)	32	+	+	+	40,5	128,0	45,5	50,0	39,0	14,5
150 mm f/5,6	9x12cm/4x5"	2-10x (6x)	45			+	52,0	146,0	49,8	60,0	50,0	20,1
180 mm f/5,6	13x18cm/5x7"	2-8x (5x)	45			+	58,0	177,0	59,8	60,0	50,0	24,6
210 mm f/5,6	13x18cm/5x7"	2-8x (4x)	45			+	67,0	201,0	67,2	70,0	58,0	28,1
240 mm f/5,6	18x24/8x10"	2-8x (4x)	45			+	77,0	230,0	77,0	80,0	72,0	30,0
300 mm f/5,6	18x24/8x10"	2-8x (4x)	45			+	86,0	283,0	93,0	90,0	72,0	8,5
360 mm f/6,3	24x30/10x12"	2-8x (2,5x)	45			+	95,0	300,0	110,6	100,0	90,0	9,5

Apo-Rodagon-N												
1	2	3	4	5	6	7	8	9	10	11	12	13
50 mm f/2,8	24x36mm	2-20x (10x)	16	+	+	+	40,5	46,0	46,5	50,0	39,0	15,7
80 mm f/4,0	6x7cm	2-15x (10x)	22	+	+	+	40,5	77,0	43,0	50,0	39,0	12,2
105 mm f/4,0	6x9cm	2-15x (6x)	22	+	+	+	40,5	99,1	54,3	50,0	39,0	18,0
150 mm f/4,0	9x12cm/4x5"	2-15x (6x)	32			+	67,0	144,5	78,2	70,0	50,0	28,8

Rodagon-WA												
1	2	3	4	5	6	7	8	9	10	11	12	13
40 mm f/4,0	24x36mm	4-20x (10x)	22	+	+	+	40,5	36,5	37,2	50,0	39,0	6,5
60 mm f/4,0	6x7cm	4-15x (8x)	22	+	+	+	40,5	55,5	41,0	50,0	39,0	10,0
80 mm f/4,0	6x9cm	4-15x (8x)	22	+	+	+	40,5	77,0	44,0	50,0	39,0	13,0
120 mm f/5,6	9x12cm/4x5"	4-15x (6x)	45			+	52,0	116,4	59,0	60,0	50,0	26,6

Rodagon-G												
1	2	3	4	5	6	7	8	9	10	11	12	13
50 mm f/2,8	24x36mm	15-50x (25x)	16	+	+	+	40,5	47,0	45,0	50,0	39,0	14,0
105 mm f/5,6	6x9cm	10-40x (20x)	45			+	40,5	100,3	38,0	60,0	50,0	14,3
150 mm f/5,6	9x12cm/4x5"	10-40x (20x)	45			+	49,0	141,8	50,6	60,0	50,0	20,5
210 mm f/5,6	13x18cm/5x7"	8-30x (20x)	45			+	67,0	179,5	65,9	74,5	72,0	8,5
240 mm f/5,6	13x18cm/5x7"	8-30x (20x)	45			+	77,0	230,6	76,9	80,0	72,0	32,2
300 mm f/5,6	18x24/8x10"	8-30x (20x)	45			+	86,0	253,3	93,5	93,5	90,0	11,5
360 mm f/6,8	18x24/8x10"	8-30x (20x)	45			+	105,0	304,2	116,5	110,0	90,0	12,2
480 mm f/8,4	24x30/10x12"	8-30x (20x)	64			+	112,0	412,0	146,8	115,0	110,0	17,7

Apo-Rodagon-D												
1	2	3	4	5	6	7	8	9	10	11	12	13
75 mm f/4,0	6x6cm	0,9-1,2 (1x)	22	+	+		40,5	136,7 (1:1)	53 0	50,0	39,0	18,7
	24x36mm	0,7-1,5x (1x)										
120 mm f/5,6		0,5-3x (2x)										

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Official Rodenstock web-site: www.rodenstockoptics.de

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