

For current pricing, please see our website.

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SECTIONS

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Visible Achromatic Doublets (Page 1 of 2)

Specifications

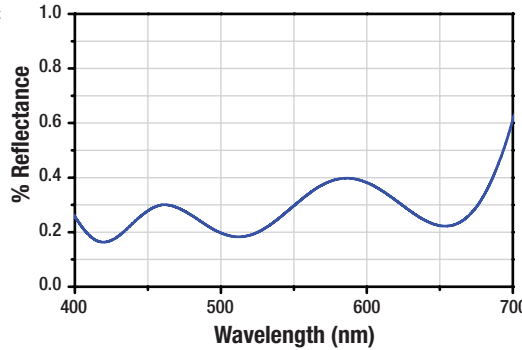
- **Design Wavelengths:** 486.1, 587.6, and 656.3 nm
- **Diameter Tolerance:** +0.00/-0.10 mm
- **Focal Length Tolerance:** ±1%
- **Surface Quality:** 40-20 Scratch-Dig
- **Surface Power:** $3\lambda/2$
- **Surface Irregularity:** $\lambda/4$
- **Centration:** ≤ 3 arcmin
- **Clear Aperture:** >90% of Diameter
- **Coating:** $R_{avg} < 0.5\%$ from 400 - 700 nm (A Coating Range)
- **Operating Temperature:** -40 to 85 °C
- **Damage Threshold:** 0.5 J/cm² (532 nm, 10 ns, 10 Hz, Ø0.566 mm)



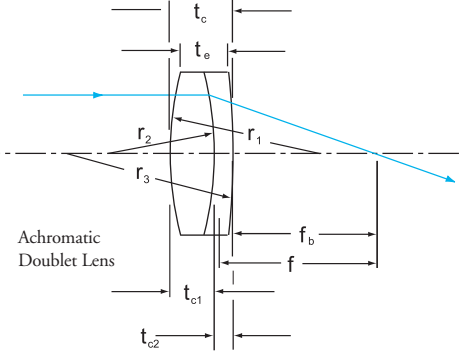
Most visible achromatic doublets use the helium "D" line (587.6 nm, yellow), hydrogen "F" (486.1 nm, blue/green), and hydrogen "C" (656.3 nm, red) lines to represent the visible spectrum and define the Abbe number V of a material for achromatic optimization.

These cemented doublets are computer-optimized to provide excellent performance in the visible region. When chromatic aberration must be controlled, a doublet is typically employed. Frequently, a diffraction-limited spot may be achieved when using a monochromatic source such as a laser.

Achromatic Doublet Visible Antireflection Coating



Please contact your local Thorlabs office for custom optical scans.



Please refer to our website for complete models and drawings.

Positive Visible Achromats: Infinite Conjugate Ratio

ITEM #	DIA (mm)	f (mm)	f _b (mm)	r ₁ (mm)	r ₂ (mm)	r ₃ (mm)	t _{c1} (mm)	t _{c2} (mm)	t _c (mm)	MATERIALS	\$	£	€	RMB
AC050-008-A	5.0	7.5	5.2	5.3	-3.9	-17.1	2.8	1.7	3.7	N-BAF10/N-SF6HT	\$ 42.50	£ 30.60	€ 36.98	¥ 338.73
AC050-010-A	5.0	10.0	7.9	6.6	-4.3	-15.4	2.5	1.9	3.7	N-BAK4/SF5	\$ 42.00	£ 30.24	€ 36.54	¥ 334.74
AC050-015-A	5.0	15.0	13.6	12.5	-5.3	-12.1	2.7	2.1	4.3	N-BK7/SF2	\$ 42.00	£ 30.24	€ 36.54	¥ 334.74
AC060-010-A	6.0	10.0	7.9	6.2	-4.6	-19.6	2.5	1.5	3.0	N-BAK4/SF5	\$ 42.75	£ 30.78	€ 37.19	¥ 340.72
AC064-013-A	6.35	12.7	10.3	7.1	-6.0	-40.4	2.5	1.5	3.1	N-BAK4/SF5	\$ 42.50	£ 30.60	€ 36.98	¥ 338.73
AC064-015-A	6.35	15.0	13.0	8.8	-6.6	-21.7	2.5	1.5	3.2	N-BK7/SF2	\$ 42.50	£ 30.60	€ 36.98	¥ 338.73
AC080-010-A	8.0	10.0	6.7	7.1	-5.3	-22.7	4.5	2.0	4.9	N-BAF10/N-SF6HT	\$ 43.75	£ 31.50	€ 38.06	¥ 348.69
AC080-016-A	8.0	16.0	13.9	11.0	-9.2	-46.8	2.5	1.5	3.1	N-BAF10/N-SF6HT	\$ 43.50	£ 31.32	€ 37.85	¥ 346.70
AC080-020-A	8.0	20.0	17.8	11.1	-9.2	-34.8	2.5	1.5	3.0	N-BK7/SF2	\$ 43.00	£ 30.96	€ 37.41	¥ 342.71
AC127-019-A	12.7	19.0	15.7	12.9	-11.0	-59.3	4.5	1.5	4.0	N-BAF10/N-SF6HT	\$ 48.40	£ 34.85	€ 42.11	¥ 385.75
AC127-025-A	12.7	25.0	21.5	18.8	-10.6	-68.1	5.0	2.0	5.6	N-BAF10/SF10	\$ 48.40	£ 34.85	€ 42.11	¥ 385.75
AC127-030-A	12.7	30.0	27.5	17.9	-13.5	-44.2	3.5	1.5	3.4	N-BK7/SF2	\$ 48.40	£ 34.85	€ 42.11	¥ 385.75
AC127-050-A	12.7	50.0	47.2	27.4	-22.5	-91.8	3.5	1.5	4.0	N-BK7/SF2	\$ 48.40	£ 34.85	€ 42.11	¥ 385.75
AC127-075-A	12.7	75.0	72.9	41.3	-34.0	-137.1	2.5	1.5	3.4	N-BK7/SF2	\$ 48.40	£ 34.85	€ 42.11	¥ 385.75
AC254-030-A	25.4	30.0	22.2	20.9	-16.7	-79.8	12.0	2.0	8.7	N-BAF10/N-SF6HT	\$ 77.00	£ 55.44	€ 66.99	¥ 613.69
AC254-035-A	25.4	35.0	27.3	24.0	-19.1	-102.1	12.0	2.0	9.6	N-BAF10/N-SF6HT	\$ 77.00	£ 55.44	€ 66.99	¥ 613.69
AC254-040-A	25.4	40.0	33.4	23.7	-20.1	-57.7	10.0	2.5	7.4	N-BK7/SF5	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-045-A	25.4	45.0	40.2	31.2	-25.9	-130.6	7.0	2.0	5.7	N-BAF10/N-SF6HT	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-050-A	25.4	50.0	43.4	33.3	-22.3	-291.1	9.0	2.5	8.7	N-BAF10/SF10	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-060-A	25.4	60.0	54.3	41.7	-25.9	-230.7	8.0	2.5	8.2	E-BAF11/FD10	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-075-A	25.4	75.0	70.3	46.5	-33.9	-95.5	7.0	2.5	6.9	N-BK7/SF5	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-100-A	25.4	100.0	97.2	62.8	-45.7	-128.2	4.0	2.5	4.6	N-BK7/SF5	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-150-A	25.4	150.0	146.1	91.6	-66.7	-197.7	5.7	2.2	6.6	N-BK7/SF5	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-200-A	25.4	200.0	194.0	77.4	-87.6	-291.1	4.0	2.5	5.7	N-SSK5/LAFN7	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-250-A	25.4	250.0	246.7	137.1	-111.5	-459.2	4.0	2.0	5.2	N-BK7/SF2	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-300-A	25.4	300.0	297.0	165.2	-137.1	-557.4	4.0	2.0	5.4	N-BK7/SF2	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-400-A	25.4	400.0	396.0	219.8	-181.6	-738.5	4.0	2.0	5.5	N-BK7/SF2	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC254-500-A	25.4	500.0	499.9	337.3	-186.8	-557.4	4.0	2.0	5.6	N-BK7/SF2	\$ 71.30	£ 51.34	€ 62.03	¥ 568.26
AC300-050-A	30.0	50.0	44.3	34.0	-29.4	-161.5	8.5	2.0	6.3	N-BAF10/N-SF6HT	\$ 80.80	£ 58.18	€ 70.30	¥ 643.98
AC300-080-A	30.0	80.0	74.3	56.0	-44.2	-219.8	8.5	2.0	7.9	N-BAF10/N-SF6HT	\$ 80.80	£ 58.18	€ 70.30	¥ 643.98
AC300-100-A	30.0	100.0	96.4	70.0	-57.0	-284.4	5.0	2.0	5.0	N-BAF10/N-SF6HT	\$ 80.80	£ 58.18	€ 70.30	¥ 643.98

Have you seen our...

532 nm Air-Spaced Doublets



See page 708

Visible Achromatic Doublets (Page 2 of 2)

Positive Visible Achromats: Infinite Conjugate Ratio (Continued)

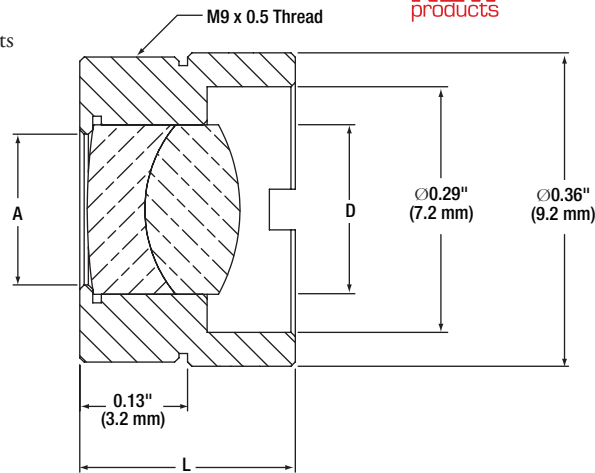
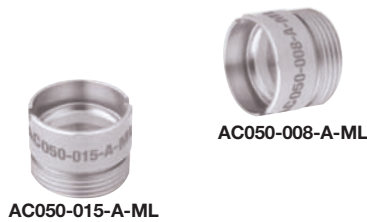
ITEM #	DIA (mm)	f (mm)	f _b (mm)	r ₁ (mm)	r ₂ (mm)	r ₃ (mm)	t _{c1} (mm)	t _{c2} (mm)	t _c (mm)	MATERIALS	\$	£	€	RMB
AC508-075-A	50.8	75.0	61.8	50.8	-41.7	-247.7	20.0	3.0	14.9	E-BAF11/N-SF11	\$ 113.10	£ 81.43	€ 98.40	¥ 901.41
AC508-080-A	50.8	80.0	69.9	54.9	-46.4	-247.2	16.0	2.0	10.5	N-BAF10/N-SF6HT	\$ 113.10	£ 81.43	€ 98.40	¥ 901.41
AC508-100-A	50.8	100.0	89.0	71.1	-44.2	-363.1	16.0	4.0	14.4	N-BAF10/SF10	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26
AC508-150-A	50.8	150.0	140.4	83.9	-72.1	-247.7	12.0	3.0	9.7	N-BK7/SF5	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26
AC508-200-A	50.8	200.0	193.7	109.9	-93.1	-376.3	8.5	2.0	6.7	N-BK7/SF2	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26
AC508-250-A	50.8	250.0	244.6	137.1	-111.7	-459.2	7.5	2.0	6.4	N-BK7/SF2	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26
AC508-300-A	50.8	300.0	295.4	161.5	-134.0	-580.8	6.0	2.0	5.4	N-BK7/SF2	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26
AC508-400-A	50.8	400.0	396.1	219.8	-186.8	-760.0	5.0	2.0	5.1	N-BK7/SF2	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26
AC508-500-A	50.8	500.0	495.8	272.9	-234.3	-970.0	5.0	2.0	5.5	N-BK7/SF2	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26
AC508-750-A	50.8	750.0	746.5	417.8	-336.0	-1330.5	4.5	2.0	5.5	N-BK7/SF2	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26
AC508-1000-A	50.8	1000.0	994.6	738.5	-398.1	-1023.3	4.0	2.0	5.2	N-BK7/SF2	\$ 97.90	£ 70.49	€ 85.17	¥ 780.26

Negative Visible Achromats: Infinite Conjugate Ratio

ITEM #	DIA (mm)	f (mm)	f _b (mm)	r ₁ (mm)	r ₂ (mm)	r ₃ (mm)	t _{c1} (mm)	t _{c2} (mm)	t _c (mm)	MATERIALS	\$	£	€	RMB
ACN127-020-A	12.7	-20.0	-22.3	-13.5	14.3	87.9	1.5	3.0	6.3	N-BAF10/N-SF6HT	\$ 54.00	£ 38.88	€ 46.98	¥ 430.38
ACN127-025-A	12.7	-25.0	-27.0	-16.9	16.5	97.7	1.5	2.5	5.4	N-BAF10/N-SF6HT	\$ 54.00	£ 38.88	€ 46.98	¥ 430.38
ACN127-030-A	12.7	-30.0	-32.2	-16.2	16.5	154.2	1.5	2.3	5.2	N-BAK4/SF5	\$ 54.00	£ 38.88	€ 46.98	¥ 430.38
ACN127-050-A	12.7	-50.0	-52.3	-25.6	25.6	372.7	1.5	2.2	4.6	N-BAK4/SF5	\$ 54.00	£ 38.88	€ 46.98	¥ 430.38
ACN254-040-A	25.4	-40.0	-43.6	-27.1	27.1	189.2	2.0	5.0	10.6	N-BAF10/N-SF11	\$ 81.00	£ 58.32	€ 70.47	¥ 645.57
ACN254-050-A	25.4	-50.0	-53.1	-34.0	32.5	189.2	2.0	4.5	9.4	N-BAF10/N-SF6HT	\$ 81.00	£ 58.32	€ 70.47	¥ 645.57
ACN254-075-A	25.4	-75.0	-78.8	-39.0	39.2	489.8	2.0	4.3	8.6	N-BAK4/SF5	\$ 81.00	£ 58.32	€ 70.47	¥ 645.57
ACN254-100-A	25.4	-100.0	-103.6	-52.0	49.9	600.0	2.0	4.0	7.7	N-BAK4/SF5	\$ 81.00	£ 58.32	€ 70.47	¥ 645.57

M9-Threaded Mounted Visible Achromatic Doublets

- Holds Ø5.0 mm, Ø6.0 mm, and Ø6.35 mm Achromatic Doublets
- Cell Engraved with Part Number
- Easily Adaptable to SM Lens Tube Systems



NEW
products

ITEM #	D (mm)	f (mm)	L (mm)	A (mm)	MATERIALS	\$	£	€	RMB
AC050-008-A-ML	5.0	7.5	6.4	4.4	N-BAF10/N-SF6HT	\$ 62.50	£ 45.00	€ 54.38	¥ 498.13
AC050-010-A-ML	5.0	10.0	6.4	4.4	N-BAK4/SF5	\$ 62.00	£ 44.64	€ 53.94	¥ 494.14
AC050-015-A-ML	5.0	15.0	6.4	4.4	N-BK7/SF2	\$ 62.00	£ 44.64	€ 53.94	¥ 494.14
AC060-010-A-ML	6.0	10.0	6.4	5.5	N-BAK4/SF5	\$ 62.75	£ 45.18	€ 54.59	¥ 500.12
AC064-013-A-ML	6.35	12.7	5.7	5.8	N-BAK4/SF5	\$ 62.50	£ 45.00	€ 54.38	¥ 498.13
AC064-015-A-ML	6.35	15.0	5.7	5.8	N-BK7/SF2	\$ 62.50	£ 45.00	€ 54.38	¥ 498.13

Have you seen our...

Mounted Lens Adapters

See page 351

Thorlabs' lens adapters all convert the threading on our M9- and M12-threaded mounted achromats to SM05 or SM1 threading for easy integration into optical systems.

