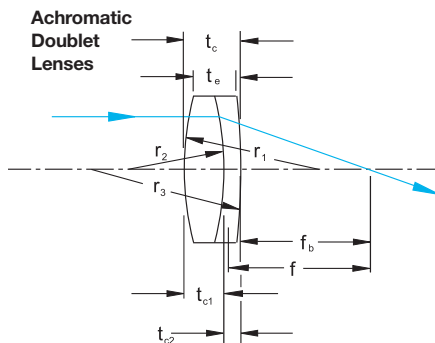


Near IR Achromatic Doublets (Page 1 of 2)

Specifications

- **Design Wavelengths:** 706.5, 855, and 1015 nm
- **Diameter Tolerance:** +0.00/-0.10 mm
- **Focal Length Tolerance:** ±1%
- **Surface Quality:** 40-20 Scratch-Dig
- **Centration:** ≤3 arcmin
- **Clear Aperture:** >90% of Diameter
- **Coating:** $R_{avg} < 0.5\%$ from 650-1050 nm (B Coating Range)
- **Operating Temperature:** -40 to 85 °C



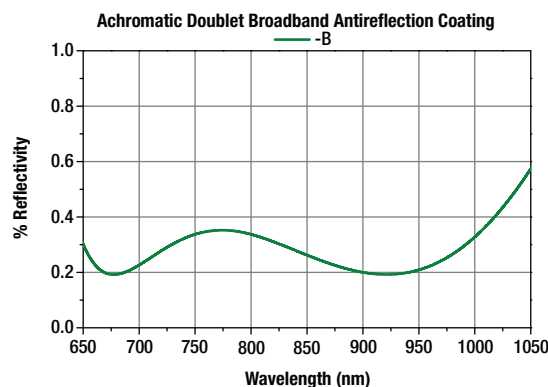
Please refer to our website for complete models and drawings.



Using design wavelengths at 706.5, 855, and 1015 nm, these achromatic doublets are computer optimized at infinite conjugate ratios for applications in the near IR.

In many of the designs, diffraction-limited spots can be achieved if these doublets are used with a monochromatic light source. Please visit our website, www.thorlabs.com, to see individual specification sheets and Zemax® files.

Zemax® is the registered trademark of Zemax Development Corporation.



Please contact your local Thorlabs office for custom optical scans.

Near IR Achromats: Infinite Conjugate Ratio

ITEM#	DIA (mm)	f (mm)	r1 (mm)	r2 (mm)	r3 (mm)	tc1 (mm)	tc2 (mm)	te (mm)	MATERIALS	\$	£	€	RMB
AC050-008-B	5.0	7.5	4.61	-3.90	-35.95	2.8	1.8	3.8	N-BAF10-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC050-010-B	5.0	10.0	6.55	-5.25	-24.89	2.2	1.6	3.2	N-LAK22-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC050-015-B	5.0	15.0	10.28	-7.59	-32.14	2.3	1.7	3.6	N-LAK22-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC060-010-B	6.0	10.0	7.08	-5.25	-19.54	2.5	1.5	2.3	N-LAK22-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC064-013-B	6.35	12.7	8.60	-6.67	-28.97	2.5	1.4	3.1	N-LAK22-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC064-015-B	6.35	15.0	10.28	-7.75	-32.89	2.4	1.5	3.2	N-LAK22-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC080-010-B	8.0	10.0	7.55	-4.61	-30.62	4.5	1.3	4.4	N-LAK10-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC080-016-B	8.0	16.0	11.02	-8.60	-35.81	2.5	1.5	3.0	N-LAK22-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC080-020-B	8.0	20.0	13.53	-10.59	-47.75	2.3	1.3	2.8	N-LAK22-N-SF6HT	\$ 41.00	£ 28.50	€ 36.50	¥ 346.30
AC127-019-B	12.7	19.0	12.16	-10.59	-77.40	4.5	1.5	3.9	N-BAF10-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
AC127-025-B	12.7	25.0	16.18	-13.31	-68.54	5.0	2.0	5.4	N-LAK22-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
AC127-030-B	12.7	30.0	19.82	-16.18	-79.08	3.5	1.5	3.7	N-LAK22-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
AC127-050-B	12.7	50.0	24.20	-26.79	250.00	3.5	1.5	4.2	N-BAF10-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
AC127-075-B	12.7	75.0	36.22	-40.36	398.10	2.5	1.5	3.5	N-BAF10-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
AC254-030-B	25.4	30.0	21.09	-16.18	-79.08	12.0	1.5	8.2	N-BAF10-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-035-B	25.4	35.0	23.99	-18.62	-97.27	10.5	1.5	7.5	N-BAF10-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-040-B	25.4	40.0	26.12	-21.28	-137.09	10.0	2.5	8.6	N-BAF10-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-045-B	25.4	45.0	29.38	-25.05	-127.06	7.8	1.6	5.9	N-LAK22-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-050-B	25.4	50.0	33.55	-27.05	-125.60	7.5	1.8	6.2	N-LAK22-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-060-B	25.4	60.0	39.48	-33.00	-165.20	6.0	1.7	5.1	N-LAK22-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-075-B	25.4	75.0	36.90	-42.17	417.80	5.0	1.6	4.5	N-BAF10-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-100-B	25.4	100.0	66.68	-53.70	-259.41	4.0	1.5	4.0	N-LAK22-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-150-B	25.4	150.0	83.60	-89.33	-1330.50	4.0	3.5	6.5	N-LAK22-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-200-B	25.4	200.0	106.41	-96.61	2000.00	4.0	4.0	7.3	N-LAK22-SF10	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-250-B	25.4	250.0	52.00	-65.31	111.51	4.0	1.5	4.7	SF5-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-300-B	25.4	300.0	62.40	-77.40	134.00	4.0	2.0	5.3	SF5-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-400-B	25.4	400.0	83.60	-106.41	181.55	3.5	1.8	4.8	SF5-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC254-500-B	25.4	500.0	60.60	-62.75	87.57	4.0	2.0	5.6	SF10-N-SF6HT	\$ 83.00	£ 57.60	€ 73.70	¥ 700.90
AC300-050-B	30.0	50.0	30.76	-27.86	-272.90	9.5	2.0	7.2	N-BAF10-N-SF6HT	\$ 87.00	£ 60.40	€ 77.30	¥ 734.70
AC300-080-B	30.0	80.0	52.48	-42.69	-216.30	6.5	2.0	5.8	N-LAK22-N-SF6HT	\$ 87.00	£ 60.40	€ 77.30	¥ 734.70
AC300-100-B	30.0	100.0	49.09	-55.34	557.40	6.0	2.0	5.9	N-BAF10-N-SF6HT	\$ 87.00	£ 60.40	€ 77.30	¥ 734.70

Near IR Achromatic Doublets (Page 2 of 2)

Near IR Achromats: Infinite Conjugate Ratio (Continued)

ITEM#	DIA (mm)	f (mm)	r ₁ (mm)	r ₂ (mm)	r ₃ (mm)	t _{c1} (mm)	t _{c2} (mm)	t _c (mm)	MATERIALS	\$	£	€	RMB
AC508-075-B	50.8	75.0	51.80	-93.11	-291.07	12.0	5.0	9.2	N-LAK22-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-080-B	50.8	80.0	51.80	-44.60	-312.60	16.0	2.0	10.3	N-BAF10-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-100-B	50.8	100.0	65.77	-55.98	-280.55	13.0	2.0	8.7	N-LAK22-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-150-B	50.8	150.0	112.21	-95.94	-325.10	8.2	5.0	9.3	N-LAK22-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-200-B	50.8	200.0	134.00	-109.20	-515.20	8.2	5.0	10.1	N-LAK22-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-250-B	50.8	250.0	121.22	-146.14	1235.90	6.6	2.6	6.8	N-BAF10-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-300-B	50.8	300.0	201.80	-161.50	-760.00	6.6	2.6	7.2	N-LAK22-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-400-B	50.8	400.0	280.55	-208.00	-859.00	4.5	2.6	5.6	N-LAK22-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-500-B	50.8	500.0	346.70	-259.41	-1132.40	4.5	2.6	5.9	N-LAK22-N-SF6HT	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-750-B	50.8	750.0	376.80	-291.07	2910.00	4.2	2.5	6.0	N-BAF10-SF10	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60
AC508-1000-B	50.8	1000.0	494.30	-398.10	3440.00	4.2	2.8	6.4	N-BAF10-SF10	\$ 125.00	£ 86.70	€ 111.00	¥ 1,055.60

Near IR Negative Achromats: Infinite Conjugate Ratio

ITEM#	DIA (mm)	f (mm)	r ₁ (mm)	r ₂ (mm)	r ₃ (mm)	t _{c1} (mm)	t _{c2} (mm)	t _c (mm)	MATERIALS	\$	£	€	RMB
ACN127-020-B	12.7	-20.0	-12.34	14.03	152.76	1.5	3.0	6.4	N-BAF10-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
ACN127-025-B	12.7	-25.0	-13.58	17.13	-859.00	1.5	2.8	5.9	N-BAF10-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
ACN127-030-B	12.7	-30.0	-19.25	18.41	106.41	1.5	2.5	5.3	N-LAK22-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
ACN127-050-B	12.7	-50.0	-24.43	30.41	-291.07	1.5	2.0	4.3	N-BAF10-N-SF6HT	\$ 54.00	£ 37.50	€ 48.00	¥ 456.00
ACN254-040-B	25.4	-40.0	-24.43	27.86	332.30	2.0	4.0	9.8	N-BAF10-N-SF6HT	\$ 81.00	£ 56.20	€ 72.00	¥ 684.00
ACN254-050-B	25.4	-50.0	-27.05	33.91	-1330.50	2.0	4.0	9.1	N-BAF10-N-SF6HT	\$ 81.00	£ 56.20	€ 72.00	¥ 684.00
ACN254-075-B	25.4	-75.0	-37.15	46.40	-494.30	2.0	3.8	7.9	N-BAF10-N-SF6HT	\$ 81.00	£ 56.20	€ 72.00	¥ 684.00
ACN254-100-B	25.4	-100.0	-48.75	59.02	-580.80	2.0	3.4	6.9	N-BAF10-N-SF6HT	\$ 81.00	£ 56.20	€ 72.00	¥ 684.00

Mounted Near IR Achromatic Doublets

Thorlabs now offers its Ø12.7 mm, Ø25.4 mm, and Ø50.8 mm doublets in convenient SM series lens cells. The internal and external SM series threads allow the mounted lenses to be easily integrated into standard optomechanics.

- Engraving Includes Part Number, Focal Length, and Coating
- SM05, SM1, or SM2 Thread Sizes



Mounted Positive Near IR Achromats: Infinite Conjugate Ratio

ITEM#	DIA (mm)	f (mm)	r ₁ (mm)	r ₂ (mm)	r ₃ (mm)	t _{c1} (mm)	t _{c2} (mm)	t _c (mm)	MATERIALS	\$	£	€	RMB
AC127-019-B-ML	12.7	19.0	12.16	-10.59	-77.40	4.5	1.5	3.9	N-BAF10-N-SF6HT	\$ 79.00	£ 54.80	€ 70.20	¥ 667.10
AC127-025-B-ML	12.7	25.0	16.18	-13.31	-68.54	5.0	2.0	5.4	N-LAK22-N-SF6HT	\$ 73.40	£ 50.90	€ 65.20	¥ 619.80
AC127-030-B-ML	12.7	30.0	19.82	-16.18	-79.08	3.5	1.5	3.7	N-LAK22-N-SF6HT	\$ 73.40	£ 50.90	€ 65.20	¥ 619.80
AC127-050-B-ML	12.7	50.0	24.20	-26.79	250.00	3.5	1.5	4.2	N-BAF10-N-SF6HT	\$ 79.00	£ 54.80	€ 70.20	¥ 667.10
AC127-075-B-ML	12.7	75.0	36.22	-40.36	398.10	2.5	1.5	3.5	N-BAF10-N-SF6HT	\$ 73.40	£ 50.90	€ 65.20	¥ 619.80
AC254-030-B-ML	25.4	30.0	21.09	-16.18	-79.08	12.0	1.5	8.2	N-BAF10-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-035-B-ML	25.4	35.0	23.99	-18.62	-97.27	10.5	1.5	7.5	N-BAF10-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-040-B-ML	25.4	40.0	26.12	-21.28	-137.09	10.0	2.5	8.6	N-BAF10-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-045-B-ML	25.4	45.0	29.38	-25.05	-127.06	7.8	1.6	5.9	N-LAK22-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-050-B-ML	25.4	50.0	33.55	-27.05	-125.60	7.5	1.8	6.2	N-LAK22-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-060-B-ML	25.4	60.0	39.48	-33.00	-165.20	6.0	1.7	5.1	N-LAK22-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-075-B-ML	25.4	75.0	36.90	-42.17	417.80	5.0	1.6	4.5	N-BAF10-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-100-B-ML	25.4	100.0	66.68	-53.70	-259.41	4.0	1.5	4.0	N-LAK22-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-150-B-ML	25.4	150.0	83.60	-89.33	-1330.50	4.0	3.5	6.5	N-LAK22-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-200-B-ML	25.4	200.0	106.41	-96.61	2000.00	4.0	4.0	7.3	N-LAK22-SF10	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-250-B-ML	25.4	250.0	52.00	-65.31	111.51	4.0	1.5	4.7	SF5-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-300-B-ML	25.4	300.0	62.40	-77.40	134.00	4.0	2.0	5.3	SF5-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-400-B-ML	25.4	400.0	83.60	-106.41	181.55	3.5	1.8	4.8	SF5-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC254-500-B-ML	25.4	500.0	60.60	-62.75	87.57	4.0	2.0	5.6	SF10-N-SF6HT	\$ 103.00	£ 71.50	€ 91.50	¥ 869.80
AC508-075-B-ML	50.8	75.0	51.80	-93.11	-291.07	12.0	5.0	9.2	N-LAK22-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-080-B-ML	50.8	80.0	51.80	-44.60	-312.60	16.0	2.0	10.3	N-BAF10-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-100-B-ML	50.8	100.0	65.77	-55.98	-280.55	13.0	2.0	8.7	N-LAK22-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-150-B-ML	50.8	150.0	112.21	-95.94	-325.10	8.2	5.0	9.3	N-LAK22-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-200-B-ML	50.8	200.0	134.00	-109.20	-515.20	8.2	5.0	10.1	N-LAK22-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-250-B-ML	50.8	250.0	121.22	-146.14	1235.90	6.6	2.6	6.8	N-BAF10-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-300-B-ML	50.8	300.0	201.80	-161.50	-760.00	6.6	2.6	7.2	N-LAK22-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-400-B-ML	50.8	400.0	280.55	-208.00	-859.00	4.5	2.6	5.6	N-LAK22-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-500-B-ML	50.8	500.0	346.70	-259.41	-1132.40	4.5	2.6	5.9	N-LAK22-N-SF6HT	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-750-B-ML	50.8	750.0	376.80	-291.07	2910.00	4.2	2.5	6.0	N-BAF10-SF10	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90
AC508-1000-B-ML	50.8	1000.0	494.30	-398.10	3440.00	4.2	2.8	6.4	N-BAF10-SF10	\$ 155.00	£ 107.50	€ 137.70	¥ 1,308.90