

Variety and characteristic of Antireflection coating

Our standard antireflection coating are single layer coating of MgF_2 .
There are multi layers coating for wide band or etc.

A single layer coating

Standard established wavelength for single layer coating of MgF_2 is following four wavelength.

1550nm
1310nm
980nm
780nm

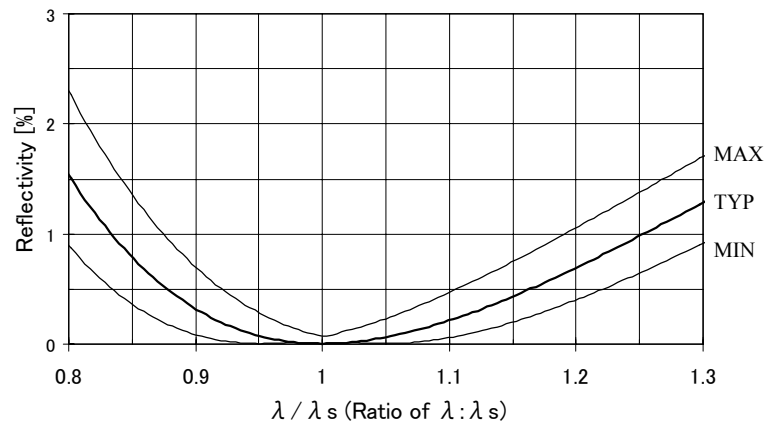
MgF_2 is the most general material for antireflection coating, because MgF_2 has low refractive index and is stable.

A relation of refractive index between MgF_2 coating and SFS01 glass have best combination for minimum reflection.

The following is a chart about spectrum reflectivity of each side for a single layer coating lens. Besides, the chart is standardized.

A line of TYP means a designed property and each lines of MAX and MIN show tolerance of production.

Spectrum Reflectivity (each side)



The following table shows each side reflectivity (calculated) in main using wavelength at single layer coating in standard established wavelength (λ_s).

λ_s (nm)		using wavelength λ [nm]							
		670	780	850	980	1310	1480	1550	1650
780	MAX	1.27	0.07	0.43	1.46	3.96	4.88	5.19	5.59
	TYP	0.73	0.01	0.18	1.05	3.53	4.50	4.84	5.26
	MIN	0.32	0.01	0.04	0.70	3.11	4.12	4.48	4.93
980	MAX	5.82	2.45	1.12	0.07	1.96	3.03	3.42	3.93
	TYP	4.70	1.66	0.61	0.01	1.53	2.58	2.98	3.51
	MIN	3.58	0.98	0.25	0.01	1.14	2.16	2.56	3.10
1310	MAX	9.76	8.54	6.81	3.59	0.07	0.63	0.95	1.44
	TYP	9.75	7.66	5.73	2.65	0.01	0.34	0.60	1.04
	MIN	9.43	6.59	4.58	1.79	0.01	0.14	0.33	0.70
1550	MAX	8.69	9.58	9.40	7.27	1.42	0.26	0.07	0.30
	TYP	7.39	9.58	8.96	6.24	0.84	0.06	0.01	0.10
	MIN	5.74	9.34	8.19	5.11	0.40	0.01	0.01	0.01

Note

1480nm of using wavelength is recommended antireflection coating of 1550nm(λ_s).

Multi Layers coating

As a multi layers coating, for example,

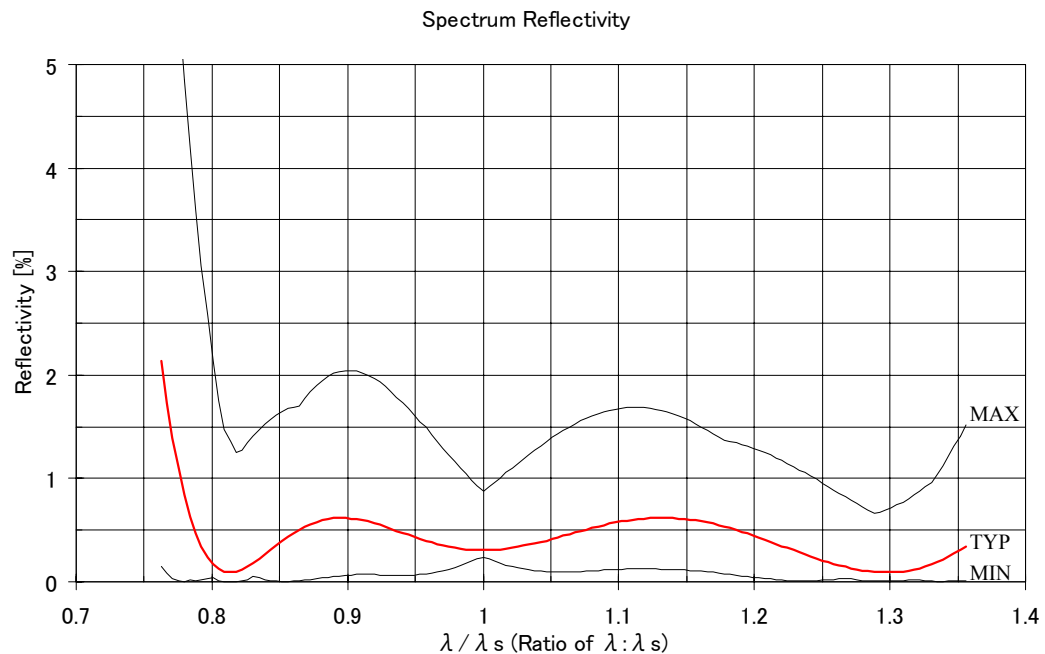
- Wide band coating by which reflectivity at two wavelength is decreased and transmissivity is improved.
- High reliability coating by which weatherability is improved further than single layer coating.

Wide band anti-reflection coating

The following is a chart about each side reflectivity chart of wide band coating that is adapted for two wavelength 980nm / 1550nm.

Wide band antireflection coating is limited and adapted to above wavelength.

Besides, this chart is standardized, and table of each side reflectivity is shown under the chart.



λ [nm]	Reflectivity [%]		
	MIN	TYP	MAX
980	0.06	0.18	1.47
1550	0.02	0.11	0.81

Besides the wide band anti-reflection coating introduced here, there is type which the lower refraction is achieved.

Please confirm it separately.

High reliability coating

High reliability coating is in preparation as a coating corresponding to the case to need high weatherability performance.

This coating can maintain high sticking strength under the severe condition.