

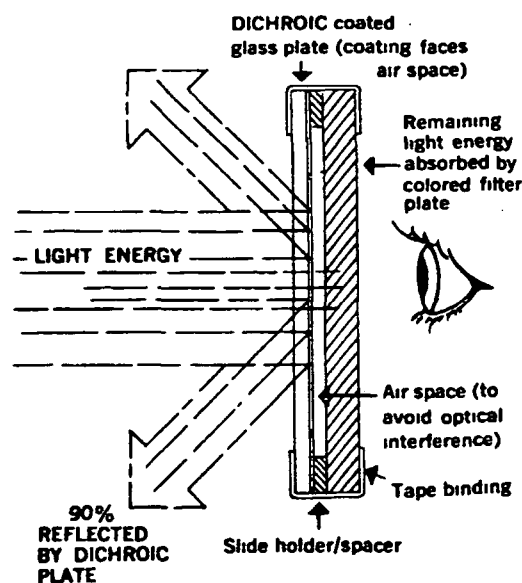
Personal Protective Equipment

TABLE 38-A
TRANSMITTANCES AND TOLERANCES IN TRANSMITTANCE OF VARIOUS
SHADES OF FILTER LENSES

Shade No	Optical Density			Luminous Transmittance			Maximum Infrared Transmittance	Maximum Spectral Transmittance in the Ultraviolet and Violet for Four Wavelengths (millimicrons)			
	Min	Std	Max	Max	Std	Min		313	334	365	405
				per cent	per cent	per cent	per cent	per cent	per cent	per cent	per cent
15	0.17	0.214	0.26	67	61.1	55	25	0.2	0.8	25	65
17	0.26	0.300	0.36	55	50.1	43	20	0.2	0.7	20	50
20	0.36	0.429	0.54	43	37.3	29	15	0.2	0.5	14	35
25	0.54	0.643	0.75	29	22.8	18.0	12	0.2	0.3	5	15
30	0.75	0.857	1.07	18.0	13.9	8.50	9.0	0.2	0.2	0.5	6
40	1.07	1.286	1.50	8.50	5.18	3.16	5.0	0.2	0.2	0.5	1.0
50	1.50	1.714	1.93	3.16	1.93	1.18	2.5	0.2	0.2	0.2	0.5
60	1.93	2.143	2.36	1.18	0.72	0.44	1.5	0.1	0.1	0.1	0.5
70	2.36	2.571	2.79	0.44	0.27	0.164	1.3	0.1	0.1	0.1	0.5
80	2.79	3.000	3.21	0.164	0.100	0.061	1.0	0.1	0.1	0.1	0.5
90	3.21	3.429	3.64	0.061	0.037	0.023	0.8	0.1	0.1	0.1	0.5
100	3.64	3.857	4.07	0.023	0.0139	0.0085	0.6	0.1	0.1	0.1	0.5
110	4.07	4.286	4.50	0.0085	0.0052	0.0032	0.5	0.05	0.05	0.05	0.1
120	4.50	4.714	4.93	0.0032	0.0019	0.0012	0.5	0.05	0.05	0.05	0.1
130	4.93	5.143	5.36	0.0012	0.00072	0.00044	0.4	0.05	0.05	0.05	0.1
140	5.36	5.571	5.79	0.0004	0.00027	0.00016	0.3	0.05	0.05	0.05	0.1

NOTE The values given apply to class I filter glass. For class II filter lenses, the transmittances and tolerances are the same with the additional requirement that the transmittance of 589.3 millimicrons shall not exceed 15 per cent of the luminous transmittance. Some of the headings in this table have been changed to conform with NBS Letter Circular LC857.

Spectral-Transmissive Properties and Use of Eye-Protective Glasses. Reprinted from National Bureau of Standards Circular 471, 1948.



eyes, and therefore require special attention.

Ultraviolet rays can produce cumulative destructive changes in the structure of the cornea and lens of the eye. Short exposures of intense ultraviolet radiation or prolonged exposures to ultraviolet radiations of low intensity will produce painful, but ordinarily self-repairing corneal damage.

Radiations in the visible light band, if too intense, can cause eyestrain and headache, and can destroy the tissue of the retina.

Infrared radiations transmit large amounts of heat energy to the eye, causing discomfort. The damage produced is superficial.

The filtering properties of filter lenses have been established by the National Bureau of Standards. The percentage transmittance of radiant energies in the three bands—ultra-

FIG 38-18 — Diagram shows how "antilaser eyeshield" deflects laser beam.