

Neutral Density Filter

ND-50

Catalog Thickness $t = 2.5$ mm

Reflection Factor $P_d = 0.922$

Diagram-6

Transmittance (T) & Internal Transmittance (τ) units : (%)

λ_{nm}	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350	360	370	380	390	400	410	420	430	440
T													$6 \cdot 10^{-3}$.02	1.2	8.6	20.2	27.6	22.8	38.8	46.5	46.6	45.8	47.3	47.3
τ													$6 \cdot 10^{-3}$.02	1.3	9.3	21.9	29.9	24.7	42.1	50.4	50.5	49.7	51.3	51.3
λ_{nm}	450	460	470	480	490	500	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	690
T	48.5	51.2	51.9	51.9	51.4	51.3	51.3	51.5	51.8	52.2	52.3	52.3	52.0	51.2	50.5	50.1	50.1	50.1	49.7	49.4	48.8	48.6	48.8	49.5	49.9
τ	52.6	55.5	56.3	56.3	55.7	55.6	55.6	55.9	56.2	56.6	56.7	56.7	56.4	55.5	54.8	54.3	54.3	54.3	53.9	53.6	52.9	52.7	52.9	53.7	54.1
λ_{nm}	700	710	720	730	740	750	800	850	900	950	1,000	1,100	1,200	1,300	1,400	1,500	1,600	1,700	1,800	1,900	2,000	2,100	2,200	2,300	2,400
T	50.1	49.9	49.5	48.5	47.6	46.6	40.8	36.0	32.2	29.3	27.1	24.9	26.0	30.0	35.5	42.0	45.6	47.1	48.3	50.1	51.7	53.4	53.3	55.1	54.5
τ	54.3	54.1	53.7	52.6	51.6	50.5	44.3	39.0	34.9	31.8	29.4	27.0	28.2	32.5	38.5	45.6	49.5	51.1	52.4	54.3	56.1	57.9	57.8	59.8	59.1

Refractive Indices

Symbol	i	h	g	F'	F	e	d	D	C'	C	r	A'	t
λ_{nm}	365.0	404.7	435.8	480.0	486.1	546.1	587.6	589.3	643.8	656.3	706.5	768.2	1,014.0
n	1.524	1.517	1.514	1.510	1.509	1.506	1.504	1.504	1.501	1.501	1.500	1.498	1.493

Abbe-Number

$$\nu_d = \frac{n_d - 1}{n_F - n_C} = 62$$

Color Specifications

	x	y	Y	λ_d	P_e
A	.445	.412	51.1	546	2
C	.310	.323	51.3	550	2
D ₆₅	.313	.336	51.4	554	2

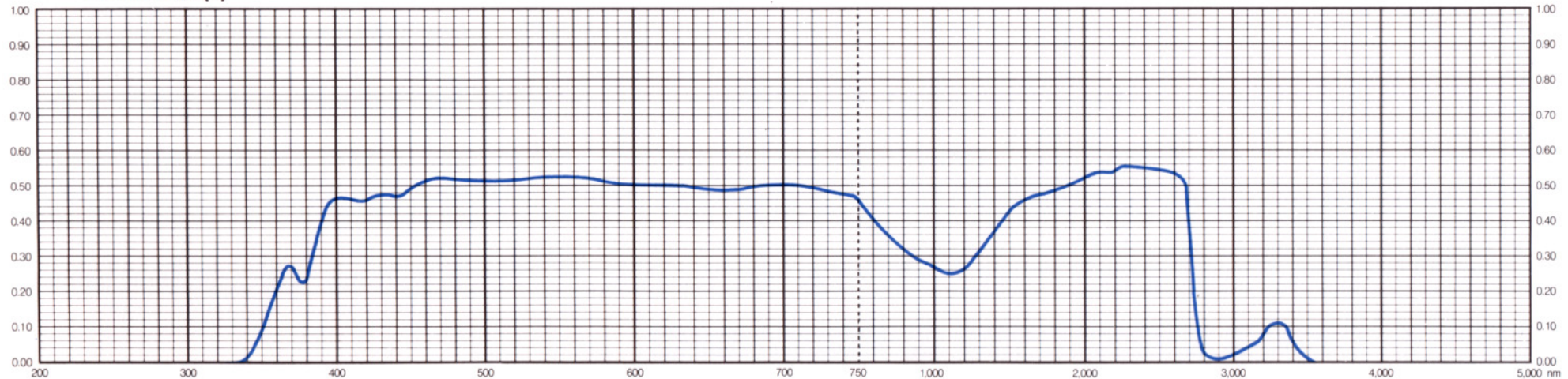
Properties

Chemical		Thermal				Mechanical		Other
D _w	D _A	T _g	T _s	$\alpha_{-30/70}$	$\alpha_{100/300}$	H _K	F _A	S
2	4	495	555	62	66	550	90	2.42

Tolerances of Transmittance (T)

Average Transmittance at 400 nm-700 nm	Average Optical Density
T _{av} (%)	D _{av}
50 ± 5	0.30

Transmittance (T)



All data are mean values of various melts.

HOYA 8304E