

# Neutral Density Filter

**ND-40**

Catalog Thickness t = 2.5 mm

Reflection Factor  $P_0 = 0.922$

Diagram-6

Transmittance (T) & Internal Transmittance ( $\tau$ ) units: (%)

$\lambda_{nm}$	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														$2 \cdot 10^{-3}$	.28	2.5	9.4	15.0	11.8	26.2	34.1	34.4	33.8	35.5	35.4
$\tau$														$2 \cdot 10^{-3}$	.30	2.7	10.2	16.3	12.8	28.4	37.0	37.3	36.7	38.5	38.4
$\lambda_{nm}$	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	36.9	40.2	41.1	41.1	40.7	40.5	40.7	41.1	41.4	41.9	42.0	42.0	41.8	41.2	40.6	40.5	40.6	40.9	40.8	40.5	40.5	40.6	41.1	42.1	43.1
$\tau$	40.0	43.6	44.6	44.6	44.1	43.9	44.1	44.6	44.9	45.4	45.6	45.6	45.3	44.7	44.0	43.9	44.0	44.4	44.3	43.9	43.9	44.0	44.6	45.7	46.7
$\lambda_{nm}$	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	43.5	43.8	43.6	43.2	42.5	41.8	37.3	33.1	29.6	27.0	24.8	22.9	24.2	28.3	33.9	40.5	43.9	45.4	46.7	48.4	50.4	52.1	51.9	54.0	53.3
$\tau$	47.2	47.5	47.3	46.9	46.1	45.3	40.5	35.9	32.1	29.3	26.9	24.8	26.2	30.7	36.8	43.9	47.6	49.2	50.7	52.5	54.7	56.5	56.3	58.6	57.8

Refractive Indices

Symbol	i	h	g	F'	F	e	d	D	C'	C	r	A'	t
$\lambda_{nm}$	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		1.518	1.514	1.510	1.510	1.506	1.504	1.504	1.502	1.502	1.500		

Abbe-Number

$$\nu_d = \frac{n_d - 1}{n_F - n_C} = 61$$

Color Specifications

	x	y	Y	$\lambda_d$	$P_e$
A	.449	.413	41.1	575	5
C	.315	.328	41.2	566	5
$D_{65}$	.317	.340	41.2	566	4

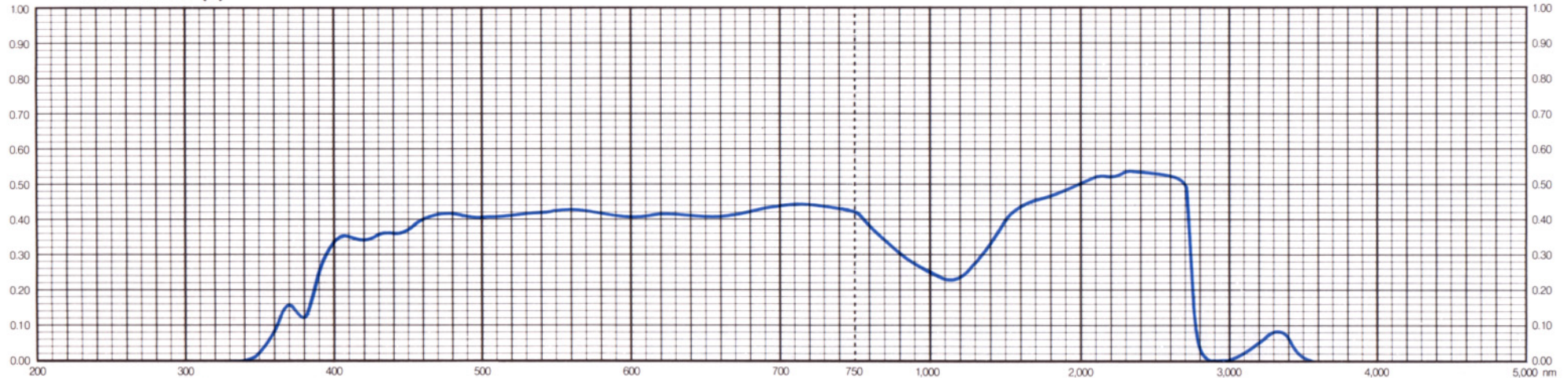
Properties

Chemical		Thermal				Mechanical		Other
$D_w$	$D_A$	$T_g$	$T_s$	$\alpha_{-30/70}$	$\alpha_{100/300}$	$H_K$	$F_A$	S
2	3	525	570	61	65	550	100	2.42

Tolerances of Transmittance (T)

Average Transmittance at 400 nm-700 nm	Average Optical Density
Tav (%)	Dav
40 ± 4	0.40

Transmittance (T)



All data are mean values of various melts.