

NOTE

- 1. DUST/SCRATCH COUNT 20 $\mu$ m MAX(A-ZONE)
- 2. FOREIGN MATERIAL TO REMOVE BY BLOWING IS ACCEPTABLE

MODIFICATION						
	CHANGE		DATE	DRAWN	CHECKED	APPROVED
	NAME 17.80SQX0.55GLASS LID		TOLERANCES UNLESS OTHERWISE SPECIFIED		DRAWN	CHECKED
	SCALE	MATERIAL			K.WAKAMATSU	
	FREE	D-263			APPROVED	DATE
						JUL.13'01
KYOCERA CORPORATION KYOTO JAPAN			DWG NO.		KE-94293	



# GLASS MATERIAL DATA

## ■ *Technical Data of Optical Glass(D263,CG-1)*

\*Reference Data

- Mechanical properties, Thermal properties, Electrical properties

Code name				D263	CG-1
Material				Borosilicate glass	Borosilicate glass
Item	Unit	Note			
Mechanical properties	Density	g/cm <sup>3</sup>		2.51	2.44
	Young's modulus	kN/mm <sup>2</sup>		72.9	71.1
	Modulus of rigidity	kN/mm <sup>2</sup>		30.1	29.2
	Poisson's ratio	-		0.21	0.22
	Knoop hardness	kN/mm <sup>2</sup>		5.78	5.29
Thermal properties	Thermal expansion	x10 <sup>-7</sup> /deg.C		72	67
			Measured temp(deg.C)	20/300	30/300
	Specific heat	J/(g*deg.C)		-	0.745/1.047
			Measured temp(deg.C)	-	20/200
	Thermal conductivity	W/(m*deg.C)		-	1.13/1.34
			Measured temp(deg.C)	-	20/200
	Transformation point	deg.C		557	540
	Sag point	deg.C		-	600
	Strain point	deg.C	10 <sup>14.5</sup> poise	529	500
Annealing point	deg.C	10 <sup>13</sup> poise	557	515	
Softening point	deg.C	10 <sup>7.6</sup> poise	736	730	
Electrical properties	Volume resistivity	Ω*cm		1.6x10 <sup>8</sup> /3.5x10 <sup>6</sup>	6.22x10 <sup>14</sup> /3.02x10 <sup>11</sup> /4.33x10 <sup>8</sup>
			Measured condition	A.C.50Hz,250deg.C/A.C.50Hz,350deg.C	20deg.C,500V/100deg.C,500V/200deg.C,500V
	Dielectric constant	-		6.7	5.14/5.29/5.63
			Measured condition	1MHz	20deg.C,1MHz/100deg.C,1MHz/200deg.C,1MHz
Dielectric loss factor		-		tanδ	5.0x10 <sup>-3</sup> /5.9x10 <sup>-3</sup> /3.1x10 <sup>-2</sup>
			Measured condition	1MHz	20deg.C,1MHz/100deg.C,1MHz/200deg.C,1MHz

# GLASS MATERIAL DATA

## ■ *Technical Data of Optical Glass(D263,CG-1)*

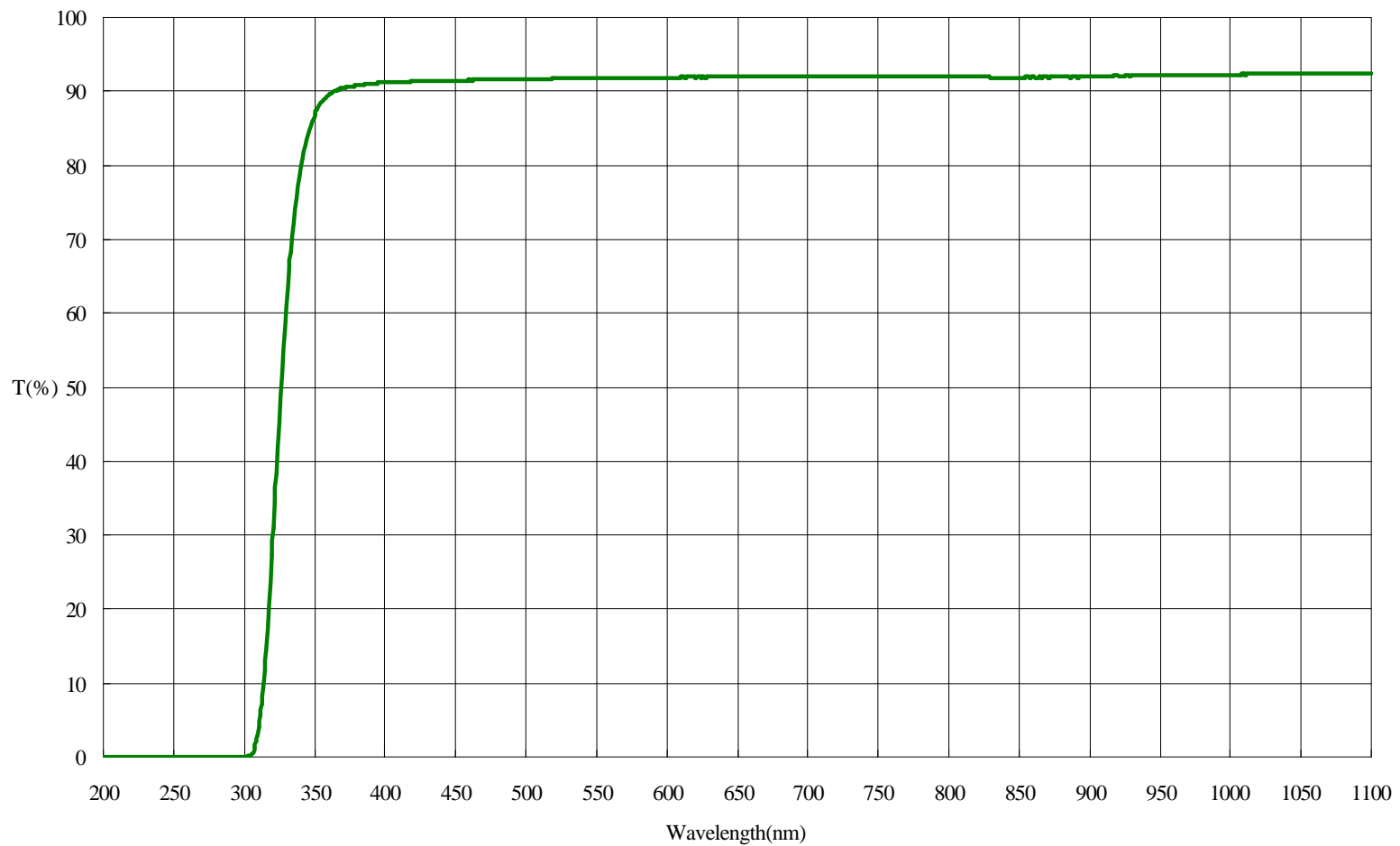
\*Reference Data

### ● Optical properties,Others

Code name				D263	CG-1
Material				Borosilicate glass	Borosilicate glass
Item	Unit	Note			
Optical properties	Refractive indices	-	$n_F(\lambda=486.1nm)$	1.5300	-
		-	$n_e(\lambda=546.1nm)$	1.5255	-
		-	$n_d(\lambda=587.6nm)$	1.5231	1.5060
		-	$n_D(\lambda=589.3nm)$	1.5230	-
		-	$n_C(\lambda=656.3nm)$	1.5204	-
	Abbe value	-	$v_e=(n_e-1)(n_F-n_C)$	55	-
		-	$v_d=(n_d-1)(n_F-n_C)$	-	63
		-	$v_D=(n_D-1)(n_F-n_C)$	-	-
	Spectral transmittance	%	200nm	0	0
		%	300nm	0	90.3
		%	400nm	91.2	91.8
		%	500nm	91.7	92.0
		%	600nm	91.9	92.2
		%	700nm	92.0	92.4
		%	800nm	92.0	92.3
%		900nm	92.0	92.2	
%		1000nm	92.3	92.5	
	mm	1100nm	92.5	92.7	
		Measured glass thickness	0.55	0.9	
Others	Glass thickness	mm		0.5/1.0	0.5/2.0

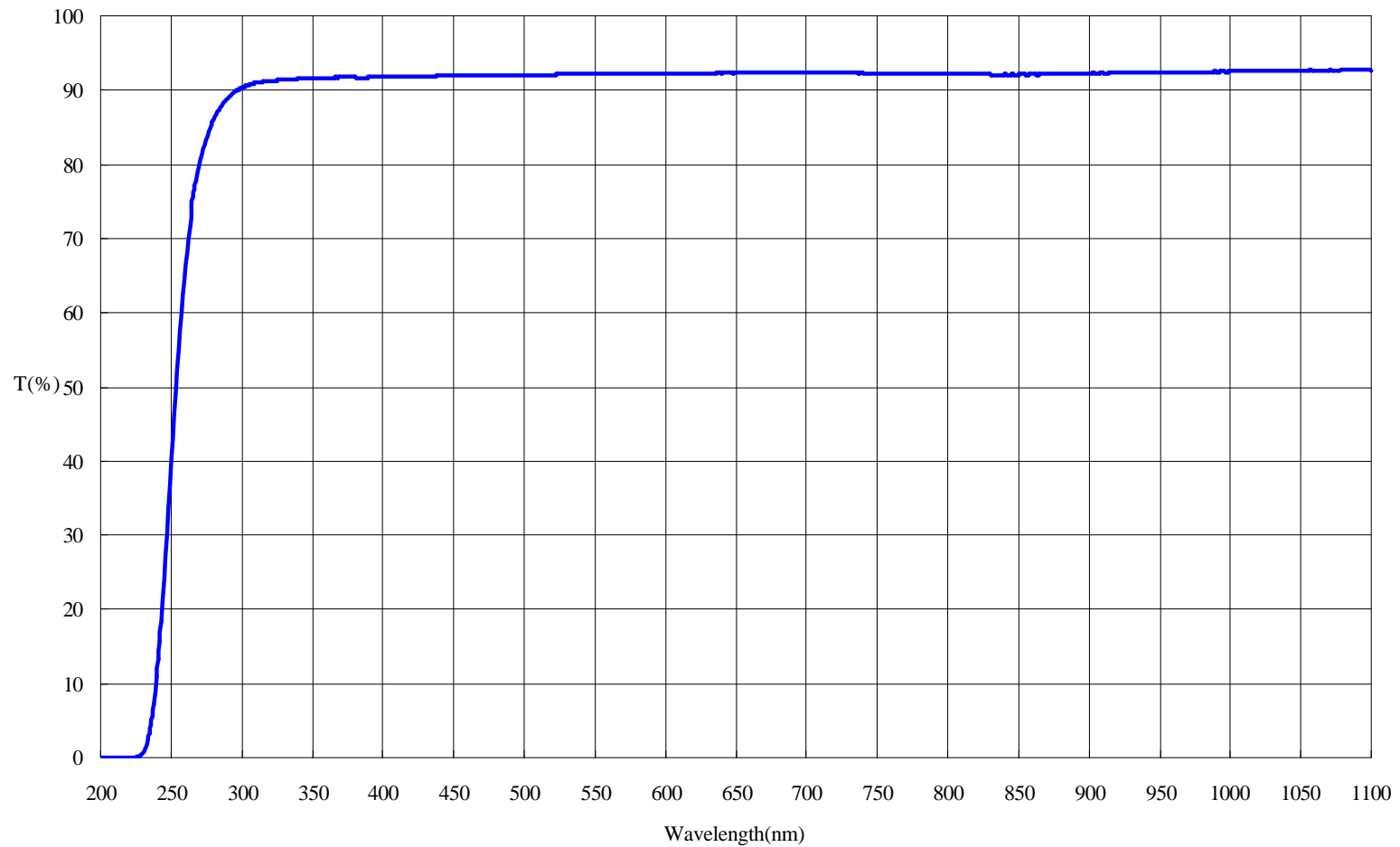
# GLASS MATERIAL DATA

- *Technical Data of Optical Glass(D263)*
  - Transmittance
- \*Reference Data (t=0.55)



# GLASS MATERIAL DATA

- **Technical Data of Optical Glass(CG-1)**
  - Transmittance
- \*Reference Data (t=0.9)



No.	KSD-248-0105-5
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( 1/2 )

**TECHNICAL SHEET**  
**Data Reference**

KYOCERA CORPORATION KOKUBU PLANT  
COMMUNICATION COMPONENTS DIVISION

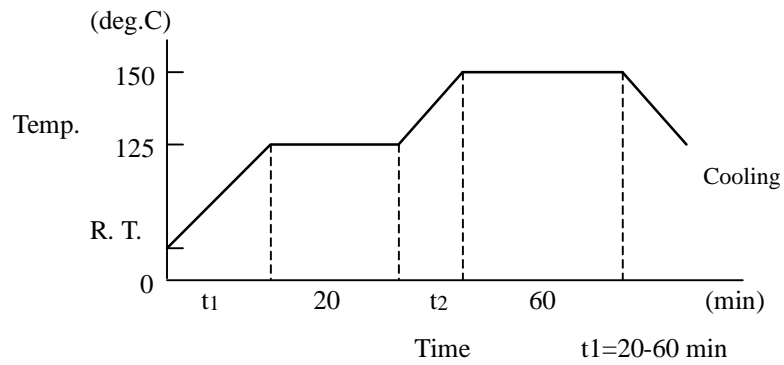
SEALANT	NCO - 150SZ
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1	Physical Property		
	Item	Unit	Data
	Color	-	White
	Specific Gravity	-	1.8
	Shear Strength(NOTE.1)	MPa	30.40
	Coefficient of Thermal Expansion	1/deg.C x 10E-5	7
	Glass Transition Point	Deg.C	160
	Water Absorption	%	0.75 MAX
	Dielectric Constant	Epsilon( MHz )	6.90
	Loss Factor	Tan delta( 1MHz )	0.045
	Thermal Conductivity	W/m*K	0.47
	Surface Resistivity	Ohm	3.5 x 10E14
Note	(NOTE.1)Curing Sample = Ceramic / Ceramic		

2	Reliability ( Judgement =Gloss Leak Test )			
	Test Item	MIL-STD 883E	Condition	Judge(pcs)
	Temperature Cycle	1010-COND C	-65/150deg.C (40Cycles)	0/100
	Thermal Shock	1011-COND A	0/100deg.C (40Cycles)	0/100
	Impact Resistance	2002-COND B	14700m/s <sup>2</sup> , 0.5ms, 5Times	0/100
	High Temp Storage	1008-COND C	150deg.C/1000Hr	0/100
	Low Temp Storage	-	-65deg.C/1000Hr	0/100
	High Temp & Humidity	-	85deg.C/85%RH, 1000Hr	0/100
	Pressure Cooker	-	121deg.C, 0.21Mpa, 50Hr	0/100
Note	Ceramic Curing ( 18.0mm SQ=Sealing Width 1.0mm )			

NCO-150SZ

3	Curing Condition
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\*Temp. is at CAP Surface (=Epoxy resin).

Recommendable Loading : 98 K

\*Please reconfirm the sealing completely done at pilot test.

4	Shelf Life(under the packing sealed conditions)			
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Temperature	0-5deg.C	6-20deg.C	21-27deg.C	28-35deg.C
Humidity	Less than 60%			
Duration	18 months	12 months	6 months	3 months

Shelf life shall be counted from shipping Date.

Storage Condition:

1. Kyocera recommend to store the product under the unpacking condition at 1-5 deg C (prohibited in freezer).
2. When using of the product,Kyocera recommend baking for removal moisture out by heat Treatment at 80deg.Cx30 minutes.
3. As for the product left over one week after opening,Kyocera recommend to store it at room temperature and humidity of 10% Max.