



TRANSMISSIVE GLASS SCALE SPECIFICATIONS

METALLIZATION – 99.999% CHROME

SUBSTRATE - SODALIME GLASS

Optical density of metallization:	Density 1-5+
Standard density:	2.8d or 1000 angstroms
Top metallization:	High or low reflective coating.
Minimum feature size:	5um
Bar / Window Ratio (50/50)	+/- 2um
Maximum Length = 165 mm	Thickness - .012" - .250" (.30–6.35 mm)
Pattern to Scale Outline (scribe and break)	+/- 165um
Pattern to Scale Outline (saw)	+/- 5um
Edge chip specification:	Maximum .010" (250 um) / Special to 20um
Flatness over entire substrate:	15um, Special to 5um
Parallelism:	.001" over 4"

SODA LIME GLASS SUBSTRATE PROPERTIES

Refractive index-	1.523 (435nm), 1.513 (645 nm)
Thermal Conductivity:	0.937 W.m/m ² °C
Soda Lime TCE:	(0/300 °C): 8.6 x 10 ⁻⁶ /°C
Annealing point:	546 C / 1015 F
Strain point:	514 C / 957 F
Softening Point:	726°C/1340°F
Substrate density:	2.44 g/cm ³ @ 20 C / 68 F
Modulus of Elasticity (Young's):	7.2 x 10 ¹⁰ Pa
Modulus of Rigidity (Shear):	3.0 x 10 ¹⁰ Pa
Bulk Modulus:	4.3 x 10 ¹⁰ Pa
Poisson's ratio:	.22
Density (at 20 °C/68 °F):	2.44 g/cm ³
Hardness (Moh's Scale):	6 - 7
Knoop Hardness:	585 kg/mm ² ± 20
Specific Gravity:	2.53
Specific Heat:	0.21
Specific Weight:	2,483 g/cm ³