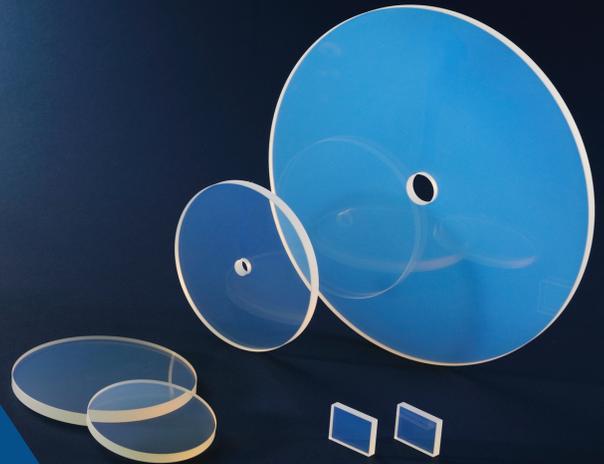


The Future Made Clear

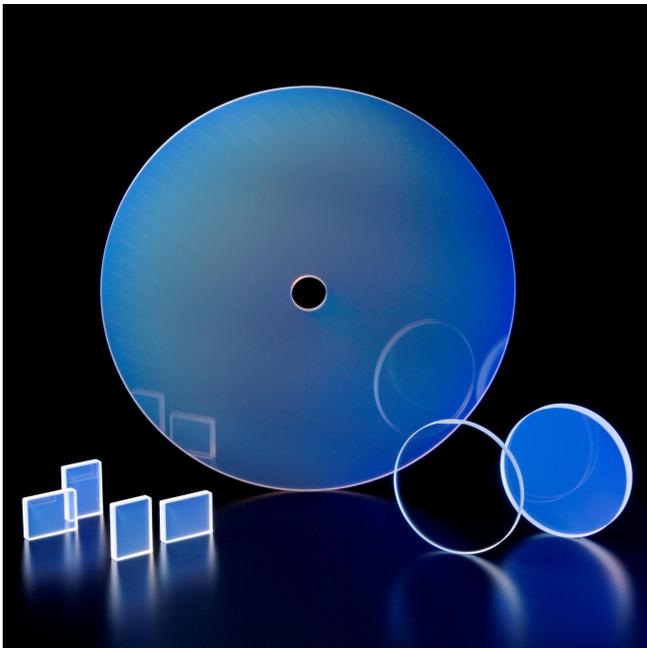


GLASS-CERAMIC SUBSTRATES FOR DWDM THIN FILM FILTERS (WMS™-15)



WMS™-15

Ohara's WMS™-15 glass-ceramic substrates will enable manufacturers to produce leading edge DWDM and Gain-Flattening Filters. Our WMS™ substrates will facilitate the production of filters with extremely low thermal wavelength drift and low insertion loss values. WMS™-15 has improved internal transmittance and exceptionally low surface roughness values.



Advantages

- High Coefficients of Thermal Expansion (CTE)
- Suitable for producing low thermal drift filters
- Low surface roughness & flatness values
- High transmission helps to provide low insertion loss
- Superior machining - less edge chipping on the filters
- Excellent physical properties & chemical durability
- Available as polished substrates - from 1" to 12" diameter

GET IN TOUCH

www.oharacorp.com

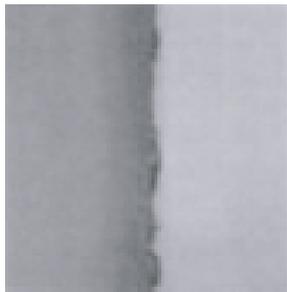
50 Columbia Road
Branchburg, NJ 08876
Tel: (908) 218-0100
Fax: (908) 218-1685

23141 Arroyo Vista #200
Rancho Santa Margarita, CA 92688
Tel: (949) 858-5700
Fax: (949) 858-5455

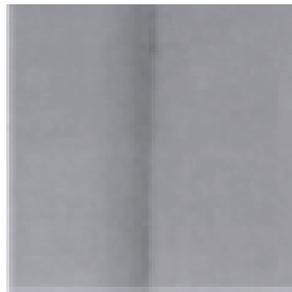
Properties of WMS™-15

Properties	WMS™-15
Material Type	Glass-ceramics
Specific Gravity	2.5
Young's Modulus (GPa)	96
Vickers Hardness	800
Abrasion Aa*	31
Heat Resistance (°C)	650
Thermal Conductivity (W/(mK))	1.9
CTE (-30~70°C (10 ⁻⁷ /K)	114
Water Resistance* RW(P)	1
Acid Resistance* RA(P)	1
Internal Transmittance (%) 1550nm 1mm thick	99.9
Refractive Index 1550nm (calculated)	1.524
$\Delta n/\Delta T$ -30~70°C (10 ⁻⁶ /K) 1550 nm	-2.1

* Is based on JOGIS (Japan Optical Glass Industry Association standard).
 CTE=114 x10⁻⁷/K(-30~70°C): Standard material, Please consult us for higher CTE requirements.
 All properties are measured at room temperature except for CTE and $\Delta n/\Delta T$.
 Refractive Index and $\Delta n/\Delta T$ is calculated value.
 Please note there is a tolerance on the CTE values. Properties subject to change without notice.

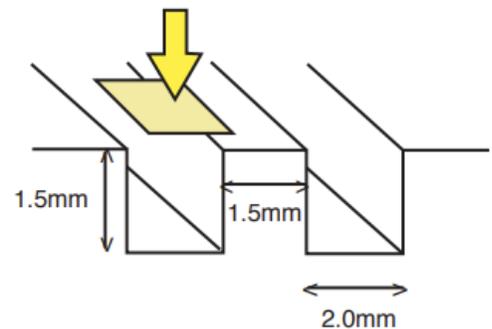


Glass



WMS-15

The WMS-15 glass ceramic substrates are less prone to edge chipping than amorphous glass substrates.



Diamond #600 (Metal Bond)
 Wheel dia 100mm (2400 rpm)
 Machine speed 4mm/min