GASIR®1 - Infrared transmitting Glass

GASIR®1/1001

Physical Data & Typical Characteristics

Mechanical

Density	4,40(±0,01)x10^3	kg/m^3
Compression resistance	161	MPa
Young's modulus	17,89	GPa
Torsion modulus	6,98	GPa
Flexion resistance	17,2	MPa
Poisson's ratio	0.28	
Vickers hardness	170	HV

Thermal

Glass temperature	565	K
Upper use temperature	523	K
Specific heat	0,36	$J.g^{-1}.K^{-1}$
Thermal expansion coefficient (300K)	17 x 10^{-6}	K^{-1}
Thermal conductivity (288 – 307K)	0,28	W/m.K
Heat Capacity	0,36	$J.g^{-1}.K^{-1}$
Dielectric constant	> 20 MΩ (insulant)	

Optical

Refractive index n (293K)	λ (µm)	Refractive Index
	1,54	2,5424
	2	2,5267
	3	2,5148
	3.5	2,5120
	4	2,5100
	4.5	2,5085
	5	2,5071
	6	2,5047
	7	2,5024
	8	2,4999
	9	2,4973
	10	2,4944
	11	2,4911
	12	2,4874
	13	2,4834
	14	2,4787

Temperature coefficient of refractive index dn/dt @ 293 K

λ (µm) = 1.06 µm	8,4 x 10^{-5} K^{-1} (@ 293 K)	10.1 x 10^{-5} K^{-1} (@t 373 K)
λ (µm) = 10.66 µm	5,5 x 10^{-5} K^{-1} (@ 293 K)	6,7 x 10^{-5} K^{-1} (@t 373 K)

Refractive index variation between different lots < 6 x 10^{-4}

Umicore Electro-Optic Materials is ISO certified: ISO 9001 & ISO 14001

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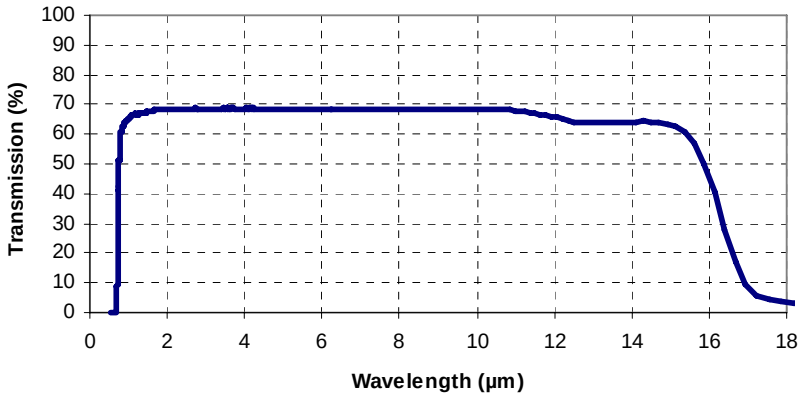
Transmission

λ (µm)	Transmision %	Absorption coefficient (cm^{-1})
0.8	59	
1	65	
1,3	67,7	
1,54	68,4	
2	68,5	
3	68,5	0,005 – 0,0095
4	68,5	0,006 – 0,008
5	68,5	0,03 – 0,035
6	68,5	< 0,001
7	68,5	< 0,001
8	68,5	0,002 – 0,006
9	68,5	0,003 – 0,005
10	68,5	0,007 – 0,009
11	68,5	0,03 – 0,035
12	66,0	0,14 – 0,2
13	64,0	0,3 – 0,4
14	64,0	

Uncoated plano disc polished both side, thickness 2.0 mm, double beam IR spectrometer Perkin Elmer 882, air reference method, slit dimension: diameter 8 mm



Formats

Disks, blanks

Moulded spherical, aspherical and diffractive lenses

For coating options, please consult our data sheets on www.optics.umicore.com

Sizes

Diameters up to 190 mm

Additional Information

Special demands outside the scope of above-mentioned specifications and limits upon request

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