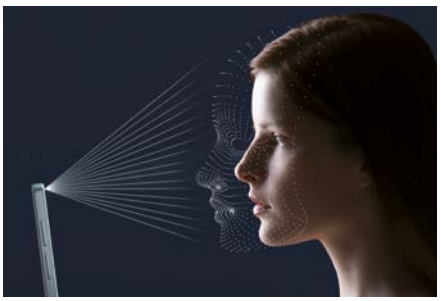
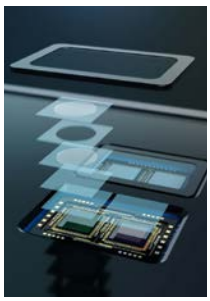
SCHOTT Specialty Thin Glass for 3D Imaging and Sensing

Product Information

SCHOTT has a long and rich history of providing glasses used in photographic imaging and sensing. To support the broader applications of 3D imaging and sensing, SCHOTT has creatively introduced specialty thin glass varieties with excellent optical, mechanical, and thermal characteristics for components required in these applications. These thin glasses are based on SCHOTT's unique down-drawn and microfloat glass production technology.





The uniqueness of SCHOTT Specialty Thin Glass

- High quality enabled by down-draw melting and microfloat process in high volume mass production.
- Variable thickness and tight thickness tolerance.
- Low total thickness variation (TTV).
- Excellent optical properties featuring excellent transmission characteristics in both the visible and infrared spectra.
- High stability and reliability. SCHOTT specialty thin glass is highly temperature resistant, chemically stable with good mechanical strength.
- Excellent properties for coating, processing and assembly operations.
- Environmentally friendly (complies with the regulations of EU-RoHS and EU-REACH).

Applications

SCHOTT specialty thin glass can be used in the solutions of Time of Flight (ToF), Structured Light and Stereo Vision for 3D imaging and sensing. Specialty thin glasses have many applications in components for consumer electronics, automotive, industrial, medical, scientific, and space applications.

SCHOTT Specialty Thin Glass applications in 3D imaging and sensing

- CMOS Image Sensor Cover
- Wafer Level Packaging (WLP)
- Wafer Level Optics (WLO)
- IR-cut Filter
- Narrow Band Filters
- Diffractive Optics Element (DOE) and Diffuser
- Spacer

Properties		D 263® Family	AF 32® eco	MEMpax®	BOROFLOAT® 33
Optical properties					
Refractive index n_D		1.5231	1.5100	1.4715	1.4714
Luminous Transmittance τ_{vD65} (at thickness)	%	91.7	92.1	92.8	92.7
Abbe value ν_e		55	62.4	65.4	65.4
Thermal properties					
CTE α (20 °C, 300 °C)	$10^{-6} \cdot K^{-1}$	7.2	3.2	3.26	3.25
Transformation temperature T_g	°C	557	717	532	525
Mechanical properties					
Density ρ *(annealed at 40 °C/h)	g/cm³	2.51	2.43	2.22	2.23
Young's modulus E	kN/mm²	72.9	74.8	62.7	64
Knoop hardness	HK 0.1/20	470	490	430	480
Chemical properties					
Hydrolytic resistance acc. to ISO 719	Class	HGB 1	HGB 1	HGB 1	HGB 1
Acid resistance acc. to DIN 12116	Class	S 2	S 4	S 1	S 1
Alkali resistance acc. to DIN ISO 695	Class	A 2	A 3	A 2	A 2
Electric properties					
Dielectric constant ε_r	5 GHz	6.3	5.1	4.4	4.5
Dissipation factor tan δ	5 GHz	$101 \cdot 10^{-4}$	$49 \cdot 10^{-4}$	$73 \cdot 10^{-4}$	$73 \cdot 10^{-4}$
Geometrical properties					
Thickness (mm)	mm	0.1 – 1.1	0.1 – 1.1	0.1 – 0.55	0.4 – 3.0
Dimensions* (round or square)	mm	100 – 300			
Thickness tolerance	µm	standard: ± 10 – 30 / advanced: ± 5			
TTV (Total Thickness Variation)	µm	standard: ≤ 10 – 25 / advanced: ≤ 5			

*other dimensions on request

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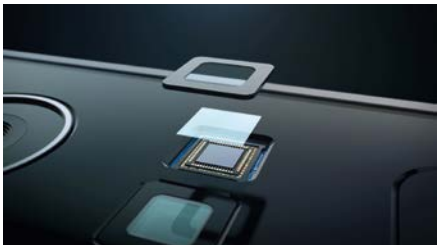
glass made of ideas

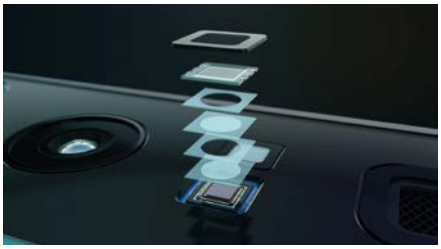
SCHOTT Specialty Thin Glass for 3D Imaging and Sensing

SCHOTT Specialty Thin Glass enables various solutions for 3D imaging and sensing components

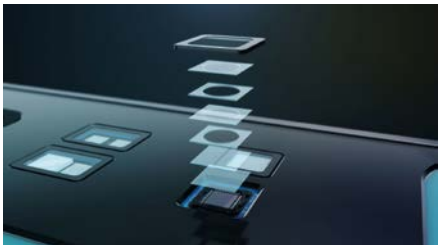
Flood Illumination



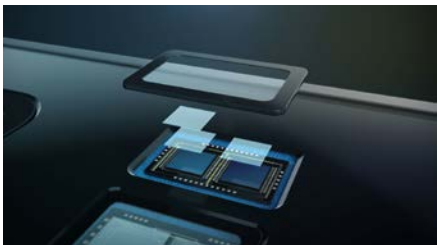
DoT Projector



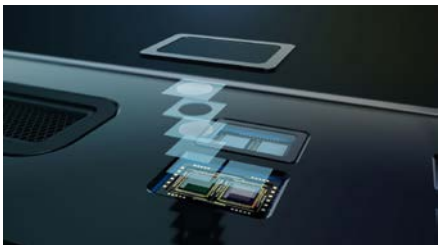
Infrared Camera



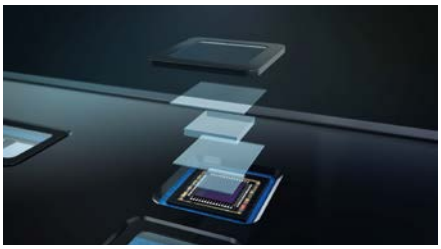
Proximity Sensor



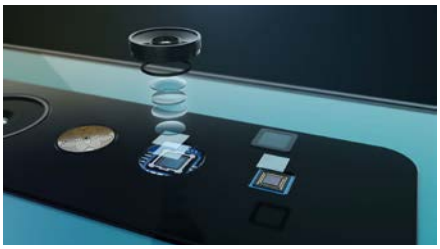
ToF Sensor



Ambient Light Sensor



Depth Camera and Lidar



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