

LiF Datasheet



KEY ADVANTAGES

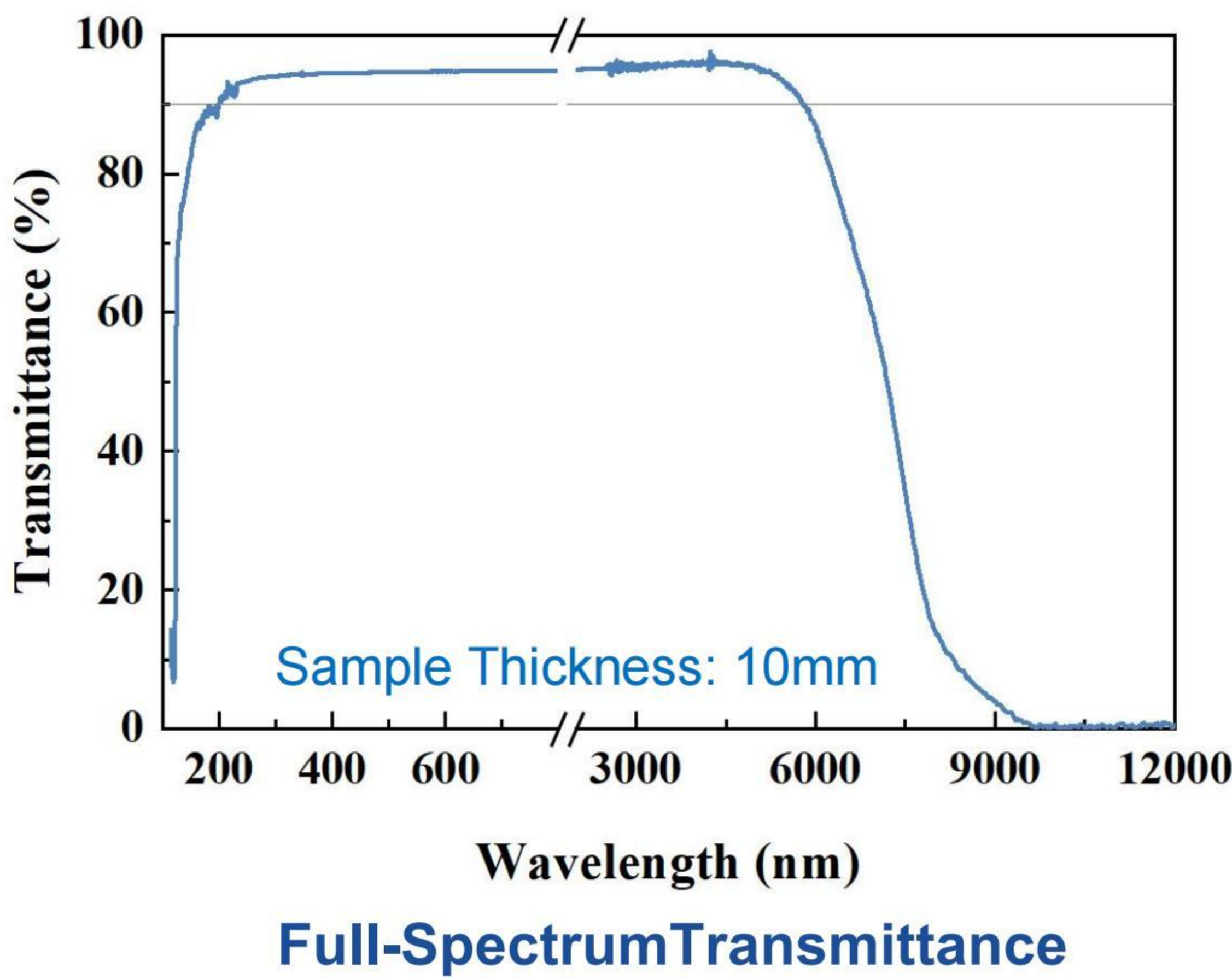
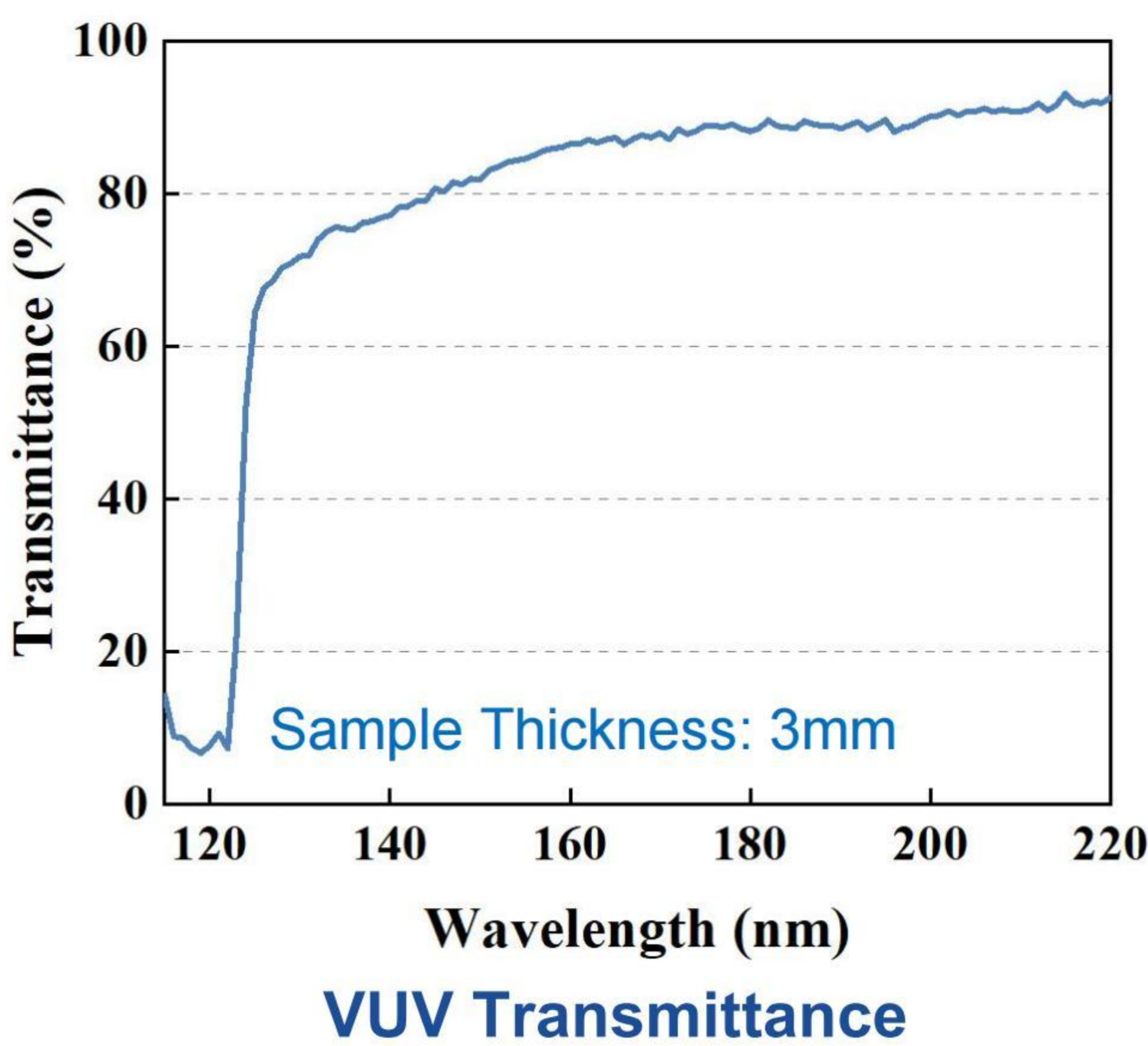
- Excellent Broadband Transmittance
- High Thermal Stability
- Low Stress Birefringence
- High Refractive Index Uniformity

DESIOPTOE is a professional manufacturer of fluoride crystals.

DESIOPTOE's superior crystal growth technology ensures the continuous production of high-quality LiF crystals.

LiF crystals manufactured by DESIOPTOE feature high transmittance in the DUV range and a short cut-off wavelength, making them widely applicable in DUV–IR windows, X-ray imaging and detection, OLED encapsulation coatings, and related fields.

DESIOPTOE can provide LiF crystal blanks and optical components in various specifications within 300mm, support customization of crystal orientations, and offer LiF windows, prisms, lenses, and other products for vacuum ultraviolet, visible, and infrared ranges.



General Grades

Material Grade	Crystal Structure	Recommended Wavelength
LIF-A	Single Crystal/ Monocrystal	Optical Grade
LIF-B	Single Crystal/ Monocrystal	IR Windows
LIF-C	Polycrystal	-

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Physical Properties

Crystal Structure	Cubic
Cleavage Plane	(100)
Lattice Constant	a=4.026 Å
Molecular Mass	25.9394 g/mol
Density	2.635 g/cm³
Melting Point	870 °C
Solubility	0.27 g/L H ₂ O at 20 °C

Thermal Properties

Heat Capacity	1.562 J/(g · K)
Thermal Conductivity	11.3 W/(m · K) @314K
Linear Thermal Expansion Coefficient	37.0 × 10 ⁻⁶ /K

Mechanical Properties

Young's Modulus	(GPa)	64.79
Poisson's Ratio		0.22
Mohs Hardness		4

Refractive Index

n = 1.3921
v_d = 95-100

Optical Fabrication Capacity

Bubbles/Inclusions	ISO 10110 – 1 x 0.02
Scratch/Dig Limit	40-20
Micro-roughness Limit	≤ 0.5nm
Wavefront errors Limit	λ/10
Crystal Orientations	(111) (001) (100) orientations are offered
Surface Finishing	TSK/ Wire Cutting, Fine Grinding, Precision Polishing, Coating
Optical Components	Window, Wedge, Prism, Plano-Convex Lens, Plano-Concave Lens, Biconvex Lens, Biconcave Lens, Meniscus Lens
Coatings	Anti-Reflection, High-Reflection