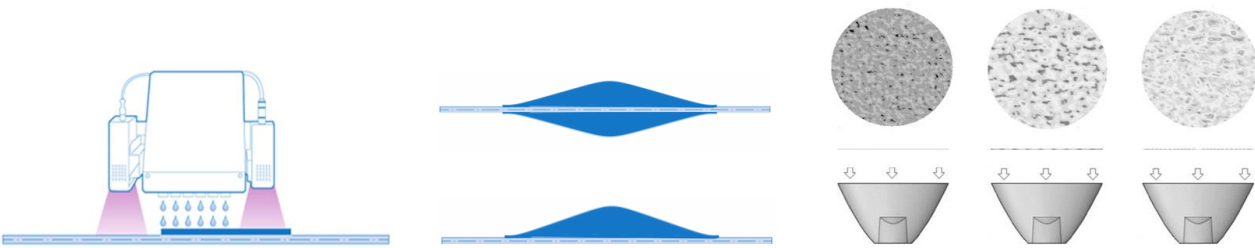


## Introduction

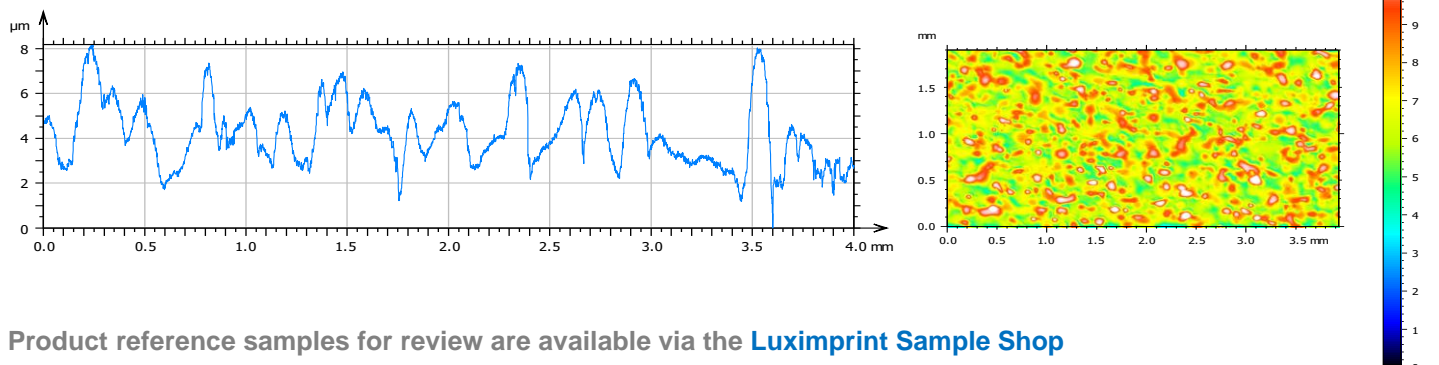
Custom optics as generated by Luximprint's optical 3D printing process can, along with optical smoothness, display an interesting 'in-process' feature: 'Frosted Finishes' – randomly or selectively applied matte finishes used to generate dispersed light, reduce or eliminate glare and aberrations, or just to create visible aesthetic illumination effects.

A standard portfolio of pre-defined Frosted Finishes is available from our in-house material library, the development of tailored finishes and textures is possible on request. Please [contact our sales engineers](#) to discuss the possibilities for your application.

SURFACE FINISH APPLICATION		
		
<p><b>Note:</b> Frosted Finishes can be applied to both sides of the plane (substrate), either covering the plane surface or generated lens feature(s) itself.</p>		
Pre-Process	In-process Attributes	Post-Process
<p><b>Substrate sourcing:</b></p> <p>(1) <b>New substrates:</b> clear / milky or colored plastics, in or excluding embedded secondary materials; metal and reflective substrates.</p> <p>(2) <b>Existing optics developments:</b> off-the-shelf substrates and even non-optical base materials for reworking of surfaces (texturing).</p>	<p><b>Application of:</b></p> <p>(1) Optical smoothness (clear resin)            (2) Frosted Finishes (diffused resin)            (3) Optical-Frosted surfaces (1+2 combined)            (4) Color resin (CMYK, mono color / gradient)            (5) Black and/or white resins (masking / blocking / reflecting)</p>	<p><b>Reworking Printed Optics:</b></p> <p>(1) Application of Performance Coatings            (2) Application of Decorative Coatings            (3) Reworking of surfaces (hollows / drafts / mounting features) using CNC-milling or laser-cutting methodologies.</p>
<p><i>*) A great variety of substrates or even thin films can be processed. In case of specific demands, please feel free to contact the Luximprint Sales Engineering team for consult.</i></p>		

## Profile Measurement

Sample measurement of Frosted Finish profile roughness conforms ISO 4287 standards using a 800 microns high pass filter.

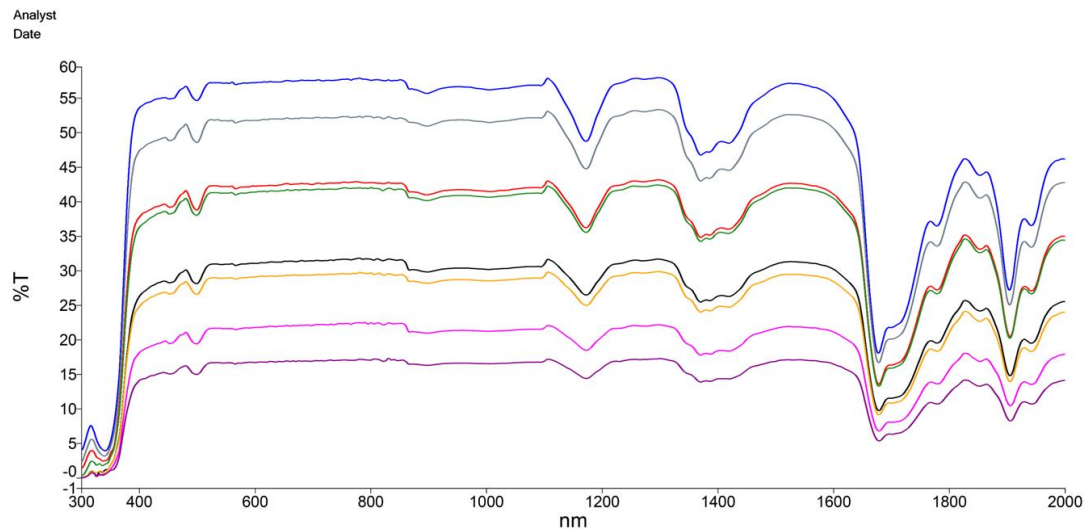


Product reference samples for review are available via the [Luximprint Sample Shop](#)



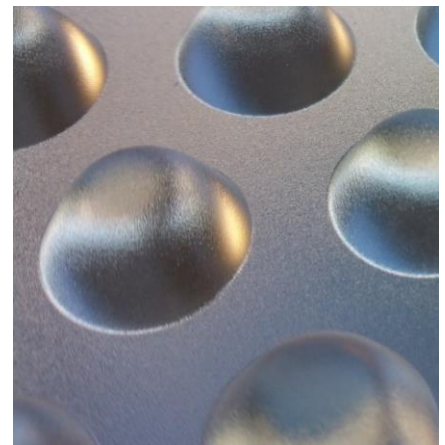
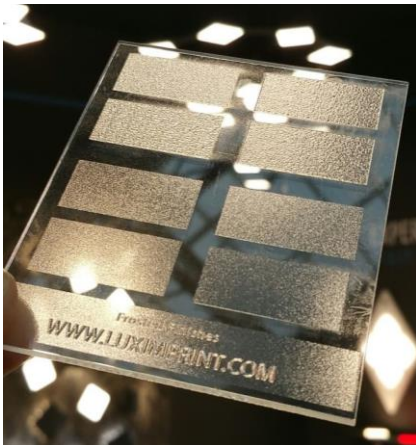
## Transmission Values

The chart below displays the transmission values of the defined standard Frosted Finish patterns. Depending on the chosen density of the optical print material, the transmission values may fluctuate. To date, a total of eight (8) different frosted finishes are defined, nearing but not equaling mold roughness definitions as standard in today's industry (e.g. VDI):



## Application Examples

Combined 'optically smooth' and 'frosted' surface finishes are achieved in one single direct 'CAD-to-Optic' manufacturing process. Multi-purpose, selective FF application can be applied along with optical performance optics.



## Printoptical Capabilities

This 'Surfaces & Finishes' document range is part of our Printoptical Capabilities Library and includes 'Frosted Finishes', 'Masking' and 'Coatings' specifications. For design and material related questions please refer to our '[Design Guidelines](#)' or '[Material Specifications](#)' documentation.

