

FLEXINITY® level

Blind holes and stepped bridges

FLEXINITY® level represents closed cavities and stepped bridges. FLEXINITY® level complements the unlimited through hole designs offered as FLEXINITY®.

The FLEXINITY® level offers unparalleled precision and versatility, meeting the demands of various applications, including optical sensor housings and MEMS.

Regardless of whether the requirement is for non-through “blind” structural elements only or combined with FLEXINITY® through-holes, the FLEXINITY® level provides the highest accuracy and versatility, aligning seamlessly with its family members.

The levelled bridges separating neighbouring through holes offer the benefit of tight tolerances, exceptional edge quality, and straight contours, thereby enhancing the design possibilities of the user.

Key Features:

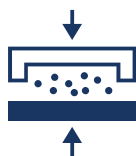
- Ideal for optical sensor housings and MEMS applications
- Offers 3D or 2.5D depth profiles
- Base of blind holes or steps can be optimized for semi-transparency upon request

Advantages:

- Supplementary features to FLEXINITY® and/or FLEXINITY® mini
- Unlimited geometric variations with high precision
- Lateral dimensional and free-form tolerance of $\pm 10 \mu\text{m}$, even for dimensions down to a few millimeters
- High homogeneity in edge quality with minimal chipping
- Straight walls for both blind holes and stepped bridges
- Enhances design freedom for sensors, MEMS, and other miniaturized packaging modules



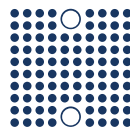
Wafer level alignment & integration



Small cavities to create reference conditions



3D and 2D steps for advanced packaging



Combining through- and blind holes



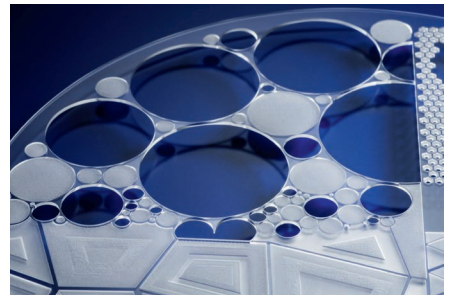
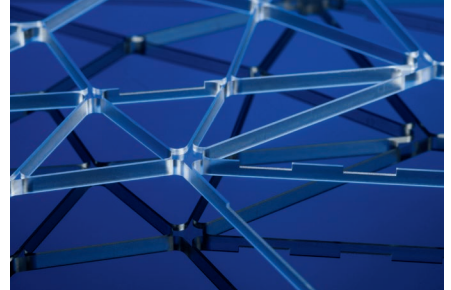
Tight tolerances

FLEXINITY[®] level

Technical specifications

Standard structuring capabilities*

Glass types	D 263 [®] T eco, BOROFLOAT [®] 33
Thickness range (depending on glass type)	0.6 – 3.3 mm
Format	Max. 600 mm in diameter (round, square)
Layout	Non-through structures according to customer specifications; can be combined with through structures*
Structuring radius	Down to 25 μm
Minimum dimension of structure element (lateral)	100 μm
Feature size tolerance	< 20 μm (equiv. $\pm 10 \mu\text{m}$)
Wall taper angle	$90^\circ \pm 0.5^\circ$
Edge exclusion zone	$\geq 3 \text{ mm}$
Position tolerance of features	< 20 μm (equiv. $\pm 10 \mu\text{m}$)
Bridge width between structure elements	Down to 100 μm

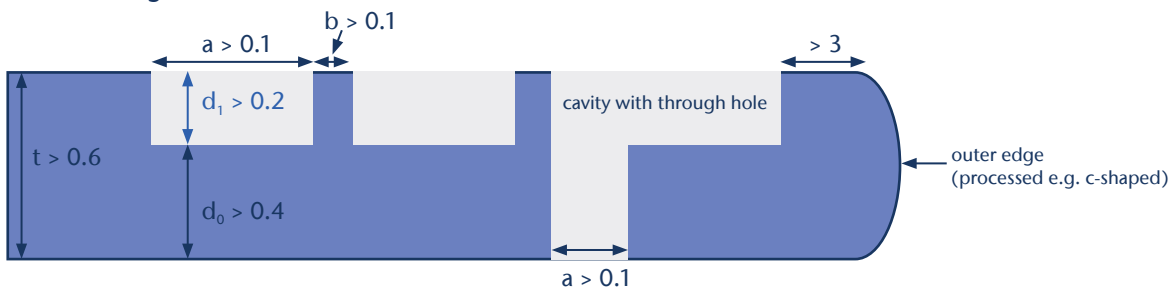


Specifications FLEXINITY[®] level

Level depth range, d_1	Min. 0.2 mm*
Remaining base thickness, d_0	Min. 0.4 mm*
Layout cavity	Round, rectangular, free shape
Feature size tolerance (lateral)	< 20 μm (equiv. $\pm 10 \mu\text{m}$)
Position tolerance of features (lateral)	< 20 μm (equiv. $\pm 10 \mu\text{m}$)
Level depth tolerance	< 100 μm (equiv. $\pm 50 \mu\text{m}$)
Level depth surface texture	Matte

* limitations in feature design and demands deviating from these capabilities will be evaluated upon request

Side view of glass



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glass made of ideas