

# Challenging the limits of Ultraprecise mirror polishing for any kind of materials

Kaston's ultraprecise mirror polishing can achieve a **surface roughness** of **Ra1 nm, Rz4 nm** on almost all materials.

Our polishing technology can achieve a **flatness** of **30 nm** with **50 mm dia.** area.  
(1  $\mu\text{m}$  with 1000 dia. area)

Our ability to create flat surfaces also allows us to create **dimensions** between surfaces and **parallelism**.

The dimensions will be  **$\pm 0.1 \mu\text{m}$**  up to **100mm**, and  **$\pm 1 \mu\text{m}$**  up to **500mm** in length.

**Parallelism** will be **0.2  $\mu\text{m}$** .

By giving a slope to the surface,  
we can create **angles:  $\pm 3$  seconds**.

Remarkably enough, our technology can even create spheres  
with **50 nm sphericity**.

We can create ultraprecise mirror surfaces on curved surfaces,  
freeform curves, cylinders, and even on rolls.



Also **thin foil** whose length is up to **100m** can be polished by a special in-house machine.

**Roughness**

Ra 1 nm  
Rz 4 nm

**Flatness**

30 nm  
(50 mm  $\phi$ )

**Parallelism**

0.5  $\mu\text{m}$

**Sphericity**

50 nm

**size-length**

$\pm 0.1 \mu\text{m}$

**Angle**






$\pm 3$  seconds

Count on us for mirror polishing and microfabrication of  
flat surfaces, curved surfaces, foil, and rolls



**Kaston uses the below measuring instruments to perform quality inspection for all finished products.**

**Inspection data with the measurement results are attached upon shipping.**

<p>Roughness</p>	<p>Talysurf CCI SunSter (TAYLOR HOBSON)                  Talysurf CCI 3000 (TAYLOR HOBSON)                  Surftest SJ400 (Mitutoyo)                  Surftest SV400 (Mitutoyo)</p>	
<p>Flatness</p>	<p>FT-200U (Mizojiri Optical Co., Ltd.)                  FT-100U (Mizojiri Optical Co., Ltd.)                  FT-80 (Mizojiri Optical Co., Ltd.)                  Talyvel (TAYLOR HOBSON)                  Optical flat</p>	
<p>Circularity</p>	<p>Talyrond 395 (TAYLOR HOBSON)</p>	
<p>Size tolerance</p>	<p>Super Litematic VL-50AH (Mitutoyo)                  Laser Hologage (Mitutoyo)                  Digimatic Micrometer all sorts (Mitutoyo)</p>	
<p>3D- co-ordinate measuring</p>	<p>LEGEX9106 (Mitutoyo)                  CRYSTA-ApexS7106 (Mitutoyo)                  Laser Tracker (FARO)</p>	

**Please contact us with any enquiries you may have.**

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