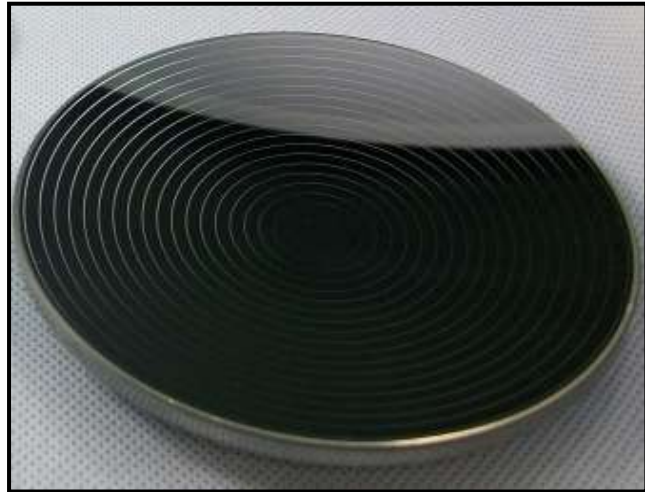
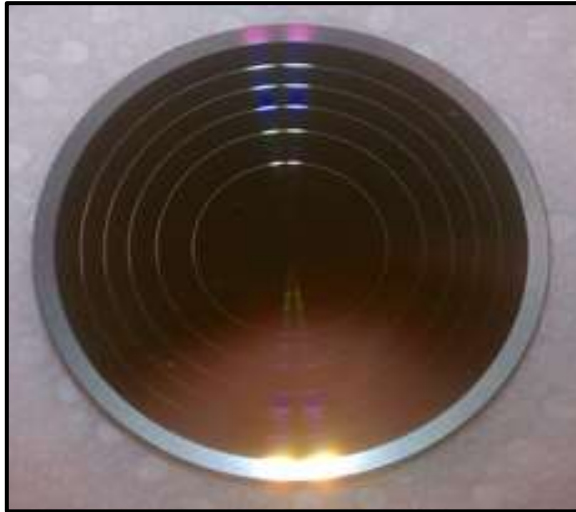


**Diamond Turning (DT) or Single Point Diamond Turning (SPDT)**  
**Diffractive Surfaces**

18 diffractive zones →



Optical aspherical surface with diffractive zones. Image reprinted courtesy of Success Optics Inc. Taken from **Optics Inspection and Tests – A guide for Optics Inspectors and Designers** (2017) by **Michael Hausner**. Page 285 in Chapter 13. SPIE Press. ISBN: 9781510601796, Volume: PM269. **Website:** <https://spie.org/Publications/Book/2237066?SSO=1>



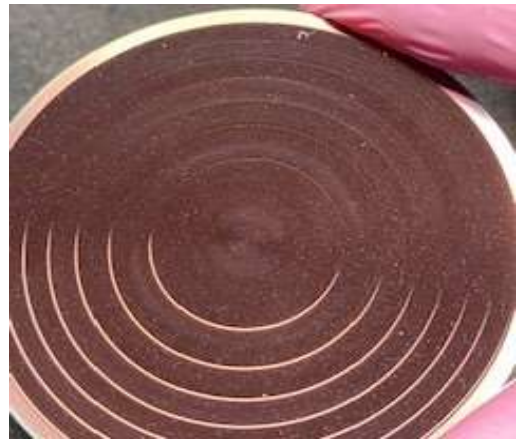
← 5 diffractive zones

→ 6 diffractive zones





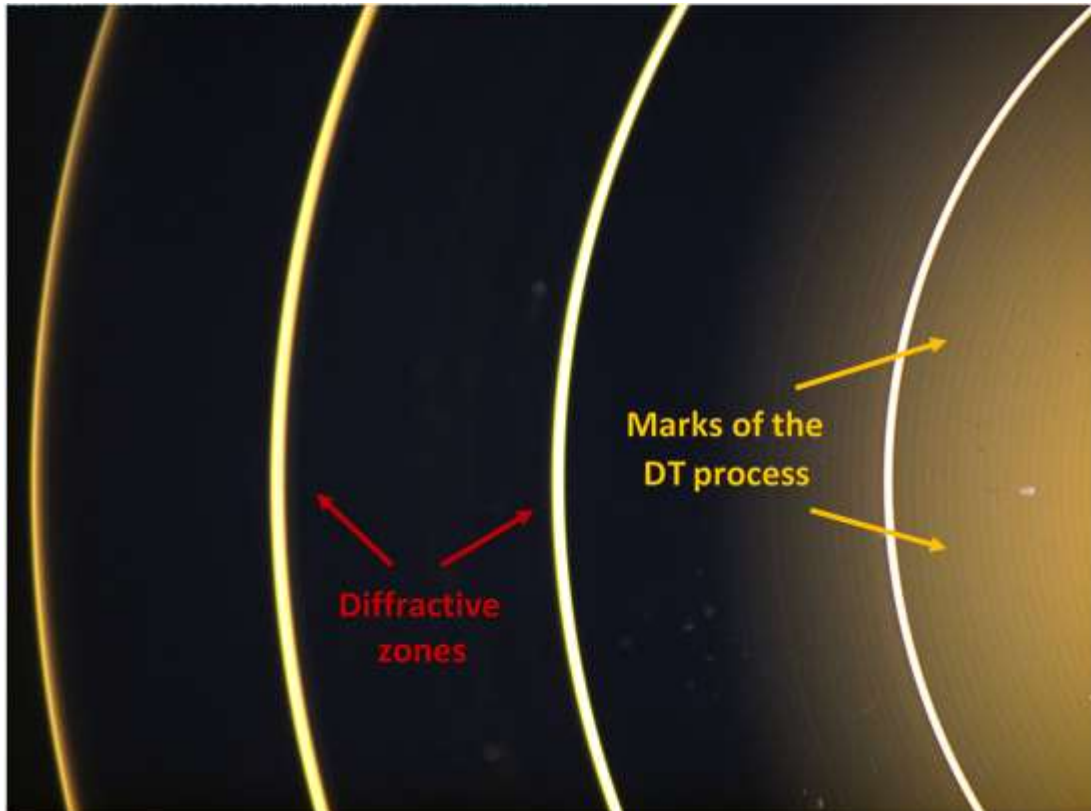
← 9 diffractive zones



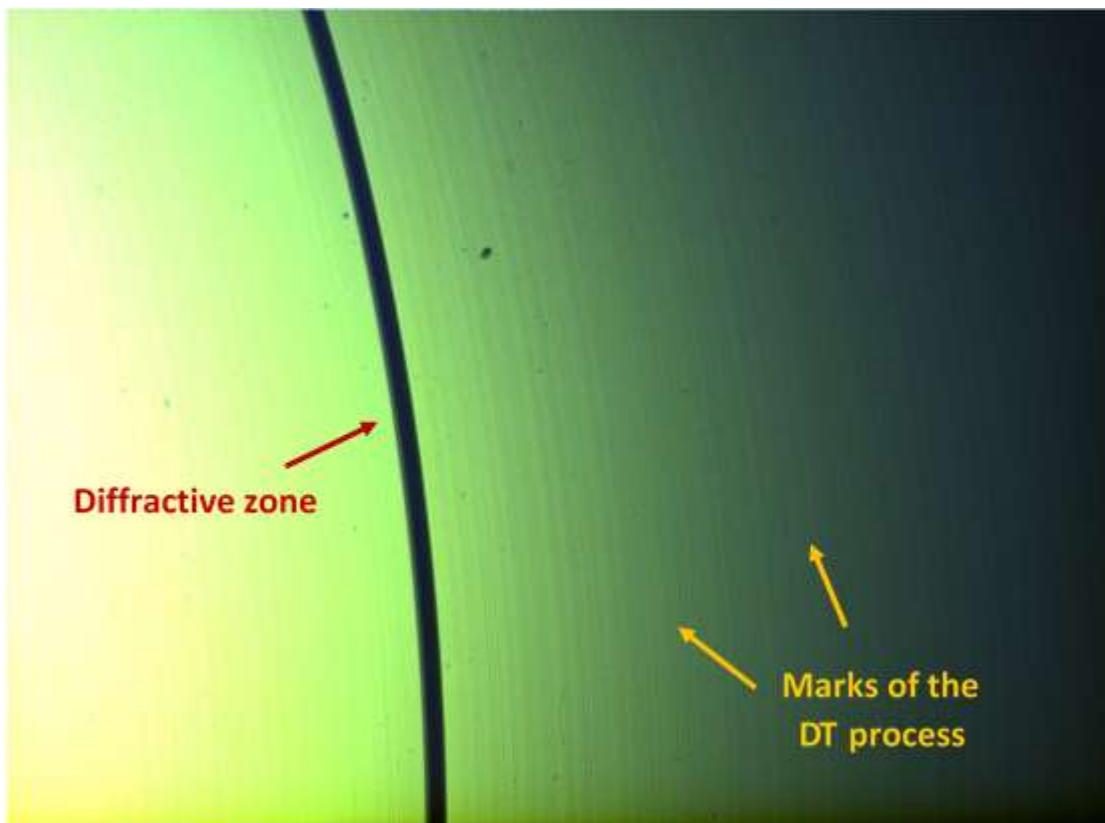
6 diffractive zones →

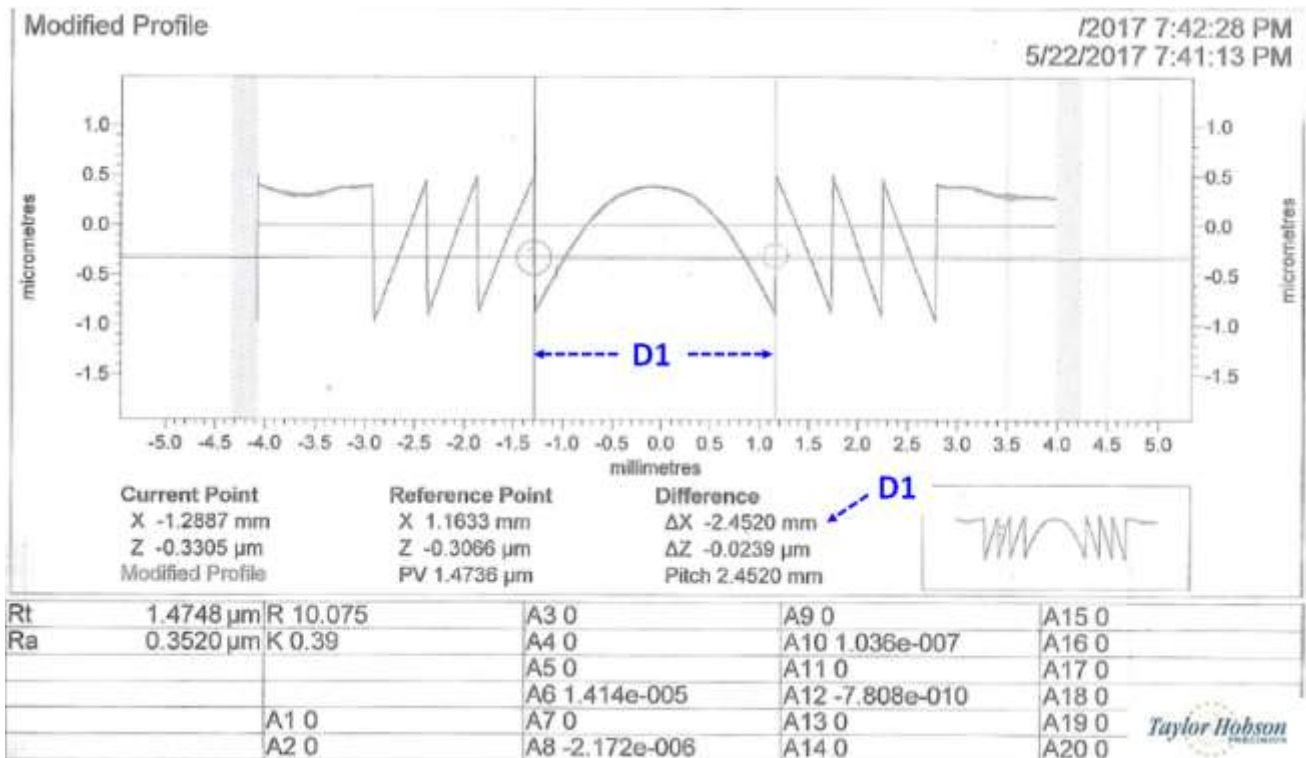


← 7 diffractive zones



Diffractive aspheric surfaces (by enlargement). Convex surface up and Concave surface down with marks (pointed) of the Diamond Turning (DT) process

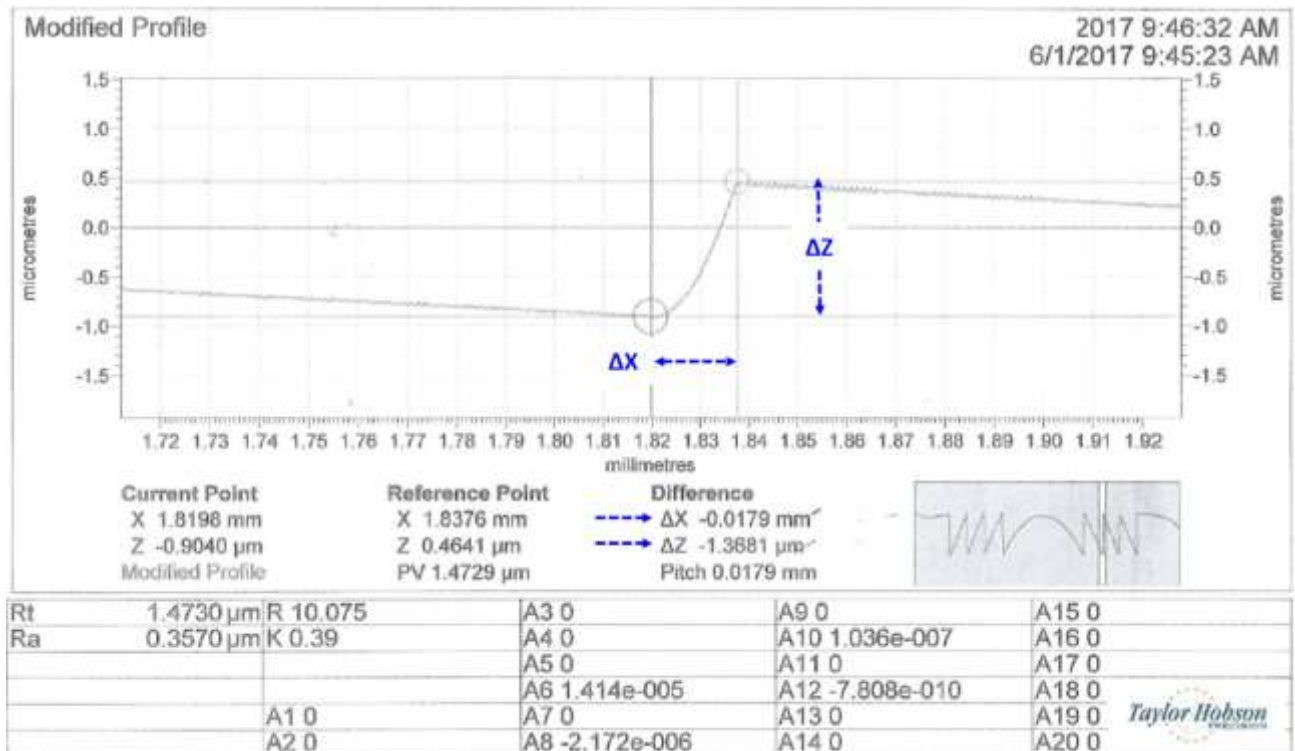




A scan example of Modified Profile of diffractive aspheric concave surface with 4 zones.

$D1$  ( $\Delta X$ ) represent the diameter of first zone.

The plot was made by contact **Taylor-Hobson Profilometer**.



A scan example of Modified Profile of diffractive aspheric concave surface of zone no. 2.

$\Delta Z$  represent the zone depth and  $\Delta X$  represent the zone width.

The plot was made by contact **Taylor-Hobson Profilometer**.

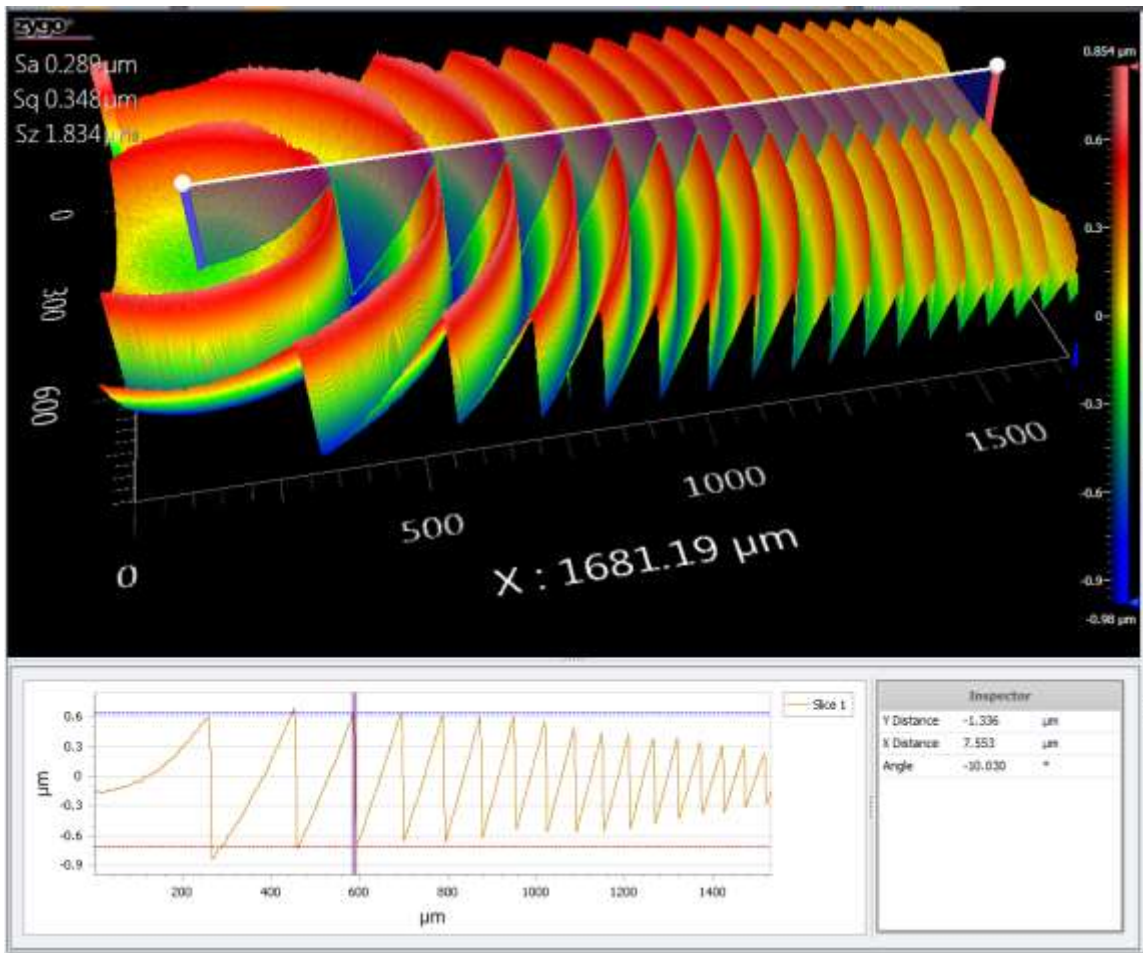


Form Talysurf PGI 840 of Tylor-Hobson for aspheric and diffractive contact surfaces measurements. Taken from **Optics Inspection and Tests – A guide for Optics Inspectors and Designers** (2017) by **Michael Hausner**. Page 349 in Chapter 15. SPIE Press. ISBN: 9781510601796, Volume: PM269. **Website:** <https://spie.org/Publications/Book/2237066?SSO=1>

**Important note**

Each equipment for measuring profile of diffractive surfaces has its advantages and limitations. So, it's the user's obligation to choose the best equipment for his needs.





3D optical diffractive surface profile (top) made by Zygo Nexview™ 3D Optical Surface Profiler (down). Taken from **Optics Inspection and Tests – A guide for Optics Inspectors and Designers** (2017) by **Michael Hausner**. Pages 374-375 about Diffractive Surfaces (paragraph 15.2). SPIE Press. ISBN: 9781510601796, Volume: PM269. **Website:** <https://spie.org/Publications/Book/2237066?SSO=1>

