

# CEO-DS

Dispersion Measurement System  
for 2D scan of large optics



CE Optics Ltd.  
Danko P. u. 26. H-6723 Szeged, HUNGARY

 +36 30 716 3024  [www.ceoptics.hu](http://www.ceoptics.hu)  
 +36 62 343 749  [info@ceoptics.hu](mailto:info@ceoptics.hu)



# CEO-DS

## Dispersion Measurement System for 2D scan of large optics

As high average power laser facilities emerge around the world, there is a growing demand for large aperture optics capable of handling large diameter laser beams. Along with the surface quality, dispersion is critical in few cycle pulses and the Group Delay Dispersion (GDD) term describes the temporal stretch of the laser pulse. Every optical element has a given dispersion, which affects the pulse duration at the target. GDD also varies significantly with the angle of incidence and so steering mirrors especially in case of large facilities should be properly characterized. Uniformity

of GDD throughout these large apertures is a must, but the real uniformity of the surface is always a question.

The researchers at CE Optics addressed this question with the development of a brand new device, the CEO-DS. With CEO-DS the verification with high spatial resolution and accuracy is now available over extremely large and custom shaped apertures (12" diameter or even larger upon request, rectangular or custom shaped optics). Offering solutions for coating facilities, optics manufacturers and large scale optics end users can quantify the GDD of chirped mirrors,

Gires-Tournois-interferometers and also residual chirp of dispersion-free coatings. The device is highly customizable according to the required application, its core is a Michelson-type interferometer mounted onto a large travel precision XY translation stage, illuminated with a broadband white light source, while a VIS-BIR spectrometer can record the output pattern in the 400-1700 nm wavelength range. Angle of incidence can be measured in the 0°- 50° range, in s- or p-polarization with an accuracy of less than 1 fs<sup>2</sup> in terms of GDD.

Group delay dispersion (GDD) measurement accuracy	< ±5 fs <sup>2</sup>
Measurable mirror dimensions	0.5" - 12" Ø or custom
Measurement raster	rectangular and/or custom shapes
Step size	custom
Angle of incidence measurable	<2 µm +/-X and +/-Y direction
Wavelength ranges	0° - 50°
VIS spectrograph	500 - 1050 nm
NIR spectrograph	900 - 1400 nm
Spectral resolution	
VIS spectrograph	<1 nm
NIR spectrograph	≤2 nm
Polarization	S and P
Software for control and measurement	Yes, included

Many features of the CEO-DS are customizable, so contact CE Optics now to get the proper design suiting your application

