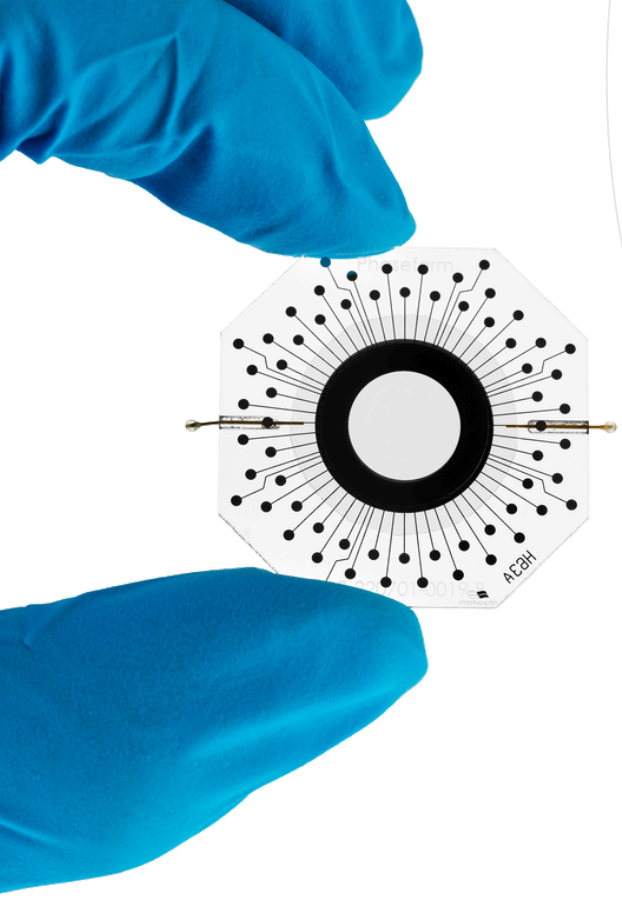

DELTA 7^{20}

TRANSMISSIVE WAVEFRONT MODULATOR

DPP TECHNOLOGY

The Delta 7^{20} is based on the Deformable Phase Plate (DPP) technology, exclusively developed by Phaseform GmbH. DPP is composed of a fluidic chamber, enclosed by a thin membrane, which is deformed by electrostatic force. The force is generated by a 2D array of transparent electrodes embedded within the optical aperture of the DPP. The sophisticated optofluidic design of the DPP enables gravity-neutral performance for orientation independent, high-quality wavefront modulation.

KEY FEATURES

Complex wavefront modulation
63 electrodes enabling replication of up to the 7th radial order of Zernike polynomials (>35 modes) with high fidelity, optimized for a beam diameter of 20 mm

Straightforward system integration
Compact housing compatible with standard M32 lens tube threading

Linear & hysteresis-free response
Electrostatic actuation suited for open-loop wavefront control

Remarkable optical quality
Active best flat with an induced RMS wavefront error of less than λ/40

Polarization-independent
Wavefront modulation independent of the light polarization for maximized efficiency

phaseform

SPECIFICATIONS

GENERAL	
Modulator type	Optofluidic DPP (Deformable Phase Plate), electrostatically actuated
Clear aperture diameter	20 mm
Number of actuators	63
Connectivity	USB 2.0
Operating system	Windows, Linux, and macOS
Driving software	SDK and GUI available in Python. Wrapper to execute Python functions in Matlab.
OPTICAL	
Maximum spatial frequency of the correction	7th radial order of Zernike modes
Maximum peak-to-valley of the generated wavefronts	> 10 µm
Optical transmission (VIS-NIR version)	400 nm - 2200 nm 80% at λ=800 nm (no AR coatings applied)
Laser Induced Damage Threshold (LIDT)	10 W/cm² for 10s @ 1070nm CW
Nominal operation laser power	Factory calibrated for < 100 mW CW (over full optical aperture)
MECHANICAL	
Thickness (within clear aperture)	0.87 mm
Hysteresis	< 1%
Linearity	> 92%
Mounting capability	M32 lens tube threading
Connector cable length	1.5 m
ELECTRICAL	
Actuator voltage	up to 295 V DC
Maximum power consumption	< 9 W
Power supply	120/230 VAC, 2.5 phono plug (included)
THERMAL	
Storage temperature	10 °C to 35 °C
Operating temperature	20 °C to 25 °C
Included in the Delta 7 package	Driving electronics, control software, cables, manual

DISCLAIMER

CONTACT US

Phaseform GmbH info@phaseform.com +49 761 216 0800 0
Georges-Köhler-Allee 302, 79110 Freiburg im Breisgau, Germany

Phaseform is supoorted by:
European Innovation Council

phaseform