LETO

Phase Only Spatial Light Modulator

HOLOEYE

Pioneers in Photonic Technology

LETO - Phase Only Spatial Light Modulator

The LETO phase modulator is based on a reflective LCOS microdisplay with full HD (1920 x 1080 pixel) resolution. With a pixel pitch of only 6.4 µm and a small interpixel gap of 0.2 µm the LETO SLM provides a high fill factor of 93% and thereby a high light efficiency.

Display Type	Reflective LCOS
Resolution	1920 x 1080 Pixel
Pixel Pitch	6.4 µm
Fill Factor	93 %
Max. Spatial Resolution	78 lp/mm
Addressing Bit Depth	8 (10 Bit CLUT)
Signal Format	HDMI - HDTV Res.
Input Frame Rate	60 Hz

LETO - Plug & Play SLM Device

The LETO phase only modulator devices can simply be addressed like an external monitor using the standard HDMI interface of the graphics card. No additional software or dedicated hardware is needed to operate the SLM.

For advanced calibration the LETO device uses a convenient standard USB interface and a GUI based callibration software.

In addittion, Application Software is provided with the SLM. Key features of which are:

- ⊗ computation of computer generated holograms (CGH) from user defined images
- ⊗ generation of SLM signals representing basic optical functions such as lenses, gratings, axicon and vortex functions
- ⊗ superposition of CGH's with basic optical functions to combine functionalities

LETO Phase Only Modulation

The LETO Spatial Light Modulator is usable for the 400-1100 nm range and the modulator provides a phase shift of 2 π up to 850 nm.

The device is delivered with a linear 256-level phase response for the specified user wavelength. The adaptation of the device settings for different operating wavelengths to a linear 2 π phase response can be done by straight forward gamma correction using the supplied calibration software.

Wavelength	Maximum Phase Shift
405 nm	6.2 π
543 nm	3.6 π
633 nm	2.8 π
800 nm	2.2 π
1064 nm	1.6 π

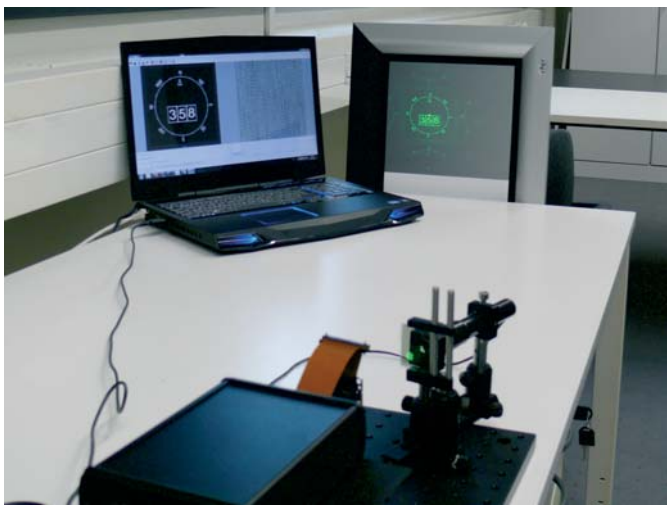
High Light Efficiency

The LETO Spatial Light Modulator offers a reflectivity of ~ 75%.

Due to the optimized design of the LCOS microdisplay the LETO SLM shows low cross talk between the pixels resulting in high effective spatial resolution.

The device offers diffraction efficiencies of more than 80% (16 level blazed grating) which leads to a total light efficiency of ~ 60%.

Grating		+1st Order [%]	0th Order [%]	-1st Order [%]
Phase Level	Period			
8 Level Blaze	8	77.9 %	1.3 %	1.3 %
16 Level Blaze	16	84.9 %	0.9 %	0.4 %



HOLOEYE Photonics AG / Albert-Einstein-Str. 14 / 12489 Berlin / Germany
Phone +49 (0)30 63 92 36 60 / Fax +49 (0)30 63 92 36 62 / contact@holoeye.com / www.holoeye.com