Syndiant
Empowering
the AR
Revolution

Free Form See Through 1080p HD Optical Engine	**SYE2281-FF-ST**

SYE2281-FF-STM-00 – Syndiant Free Form See Through Monocular HD Optical Engine
SYE2281-FF-STB-00 – Syndiant Free Form See Through Binocular HD Optical Engine

F e a t u r e s

Optical Engines
- SYE2281-FF-STM-00 Monocular
- SYE2281-FF-STB-00 Binocular
- See Through 2D/3D capable
- Fixed Focus
- RGB backlight micro-display
- Low power consumption
- Light Weight
- Turn Key Solution for wearable devices

SYL2281 LCOS Panel (integrated)
- Field sequential color Liquid Crystal On Silicon (LCOS) reflective panel with digital drive
- 0.37" active display diagonal
- 1080p (1920x1080) array of 4.27µm mirrors
- Displays sequential colors up to 6 Color Fields per Frame (CF/F) with programmable color field duration
- Panel illumination times greater than 85%

O v e r v i e w

Innovative high performance free form optical engine for wearable near-eye display market, featuring excellent image quality with vivid colors, low cost, and low power requirements for battery operated devices.

The See-Through binocular near-eye engine features Syndiant's SYL2281 HD LCOS panel that is capable of displaying both 2D and 3D content. The patented LCOS micro-display all digital architecture integrates smart electronics to achieve full 1080p HD resolution in a highly compact 0.37" diagonal panel.

The combination of the all-digital panel architecture and the optimized optical engine provide an excellent solution for any near-eye application requiring a large virtual image with outstanding picture quality.

Syndiant Advantages

- High resolution: Offers a rich user experience by supporting a full range of content including web browsing, text, graphics, multimedia, and full-motion video
- Low power: Great for mobile battery powered products
- Small form factor meets requirements for near eye applications
- Smooth gray scale at all brightness levels, matching the visual response of the eye
- The optical engine pre-installed with Syndiant's 2281 1080p HD panel accelerates design to market for ultra-portable see-through applications.

Specifications

Resolution	1920x1080	**Optical Structure**	Free Form Eyepiece
Display Diagonal	0.37"	**IPD**	63.5mm – fixed binocular
Pixel Pitch	4.27 um		ADJ (optional)
		Diopter	-0.5D
Virtual screen size	~ 90" @ 3m	**See Through transmittance**	**70% +/-15%**
Eye Relief	19mm +/- 1mm	**Power**	TBD
Eye Box	7mm +/- 1mm	**Brightness**	>400 nits per eye
Distortion	3% +/- 1%	**Weight**	14g +/- 1g (binocular)
Contrast Ratio	300:1	**Package size (L x W x H)**	33.4 x 13.8 x 24.4 mm monocular
Monocular FOV	35 degrees		97.4 x 13.8 x 24.4 mm binocular
Binocular FOV	39 degrees	**Operating Temperature**	0˚C to 60˚C
Optical axis of panel to the pupil	116.2 degrees	**Storage Temperature**	-20˚C to 60˚C

- **SYE2281-FF-STM Monocular OE**

- **SYE2281-FF-STB-00 Binocular**

Ordering Information

Part Number	Description
61-2281-FF-STM-00	SYE2281-FF-STM-00 - **Free Form See Through Monocular HD Optical Engine** with preinstalled SYL2281 panel (42-2281-V0)
71-2281-FF-STM-00	**Free Form See Through Monocular Development Kit**: Free Form See Through Monocular HD engine (61-2281-FF-STM-00) with preinstalled SYL2281 panel (42-2281-V0), 1080p HMD driver board (42-1830-00), programming option, and reference schematics
61-2281-FF-STB-00	SYE2281-FF-STB-00 – **Free Form See Through Binocular HD Optical Engine** with preinstalled SYL2281 panels (42-2281-V0)
71-2281-FF-STB-00	**Free Form See Through Binocular Development Kit**: Free Form See Through Binocular HD Engine (61-2281-FF-STB-00) with preinstalled SYL2281 panel (42-2281-V0), 1080p HMD driver board (42-1830-00), programming option, and reference schematics