

**Free Form See Through HD Optical Engine**

**SYE2271-FF-ST**

**SYE2271-FF-STM-00 – Syndiant Free Form See Through Monocular HD Optical Engine**  
**SYE2271-FF-STB-00 – Syndiant Free Form See Through Binocular HD Optical Engine**

**Features**

**Optical Engines**

- SYE2271-FF-STM-00 Monocular
- SYE2271-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

**SYL2271 LCOS Panel (integrated)**

- Field sequential color Liquid Crystal On Silicon (LCOS) reflective panel with digital drive
- 0.37” active display diagonal
- 720p (1280x720) array of 6.4µm mirrors
- Displays sequential colors up to 9 Color Fields per Frame (CF/F) with programmable color field duration
- Panel illumination times greater than 95%

**Overview**

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 SYL2271 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 720p 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 2271 720p HD panel accelerates design to market for ultra-portable see-through applications.

**Specifications**

<b>Resolution</b>	1280x720	<b>Optical Structure</b>	Free Form Eyepiece
<b>Display Diagonal</b>	0.37"	<b>IPD</b>	63.5mm – fixed binocular
<b>Pixel Pitch</b>	6.4 um		ADJ (optional)
		<b>Diopter</b>	-0.5D
<b>Virtual screen size</b>	~ 90" @ 3m	<b>See Through transmittance</b>	70% +/-15%
<b>Eye Relief</b>	19mm +/- 1mm	<b>Power</b>	TBD
<b>Eye Box</b>	7mm +/- 1mm	<b>Brightness</b>	>400 nits per eye
<b>Distortion</b>	3% +/- 1%	<b>Weight</b>	14g +/- 1g (binocular)
<b>Contrast Ratio</b>	300:1	<b>Package size (L x W x H)</b>	33.4 x 13.8 x 24.4 mm monocular
<b>Monocular FOV</b>	35 degrees		97.4 x 13.8 x 24.4 mm binocular
<b>Binocular FOV</b>	39 degrees	<b>Operating Temperature</b>	0°C to 60°C
<b>Optical axis of panel to the pupil</b>	116.2 degrees	<b>Storage Temperature</b>	-20°C to 60°C



- SYE2271-FF-STM Monocular OE



- SYE2271-FF-STB-00 Binocular

**Ordering Information**

Part Number	Description
61-2271-FF-STM-00	SYE2271-FF-STM-00 - Free Form See Through Monocular HD Optical Engine with preinstalled SYL2271 panel (42-2271-V0)
71-2271-FF-STM-00	Free Form See Through Monocular Development Kit: Free Form See Through Monocular HD engine (61-2271-FF-STM-00) with preinstalled SYL2271 panel (42-2271-V0), DB7 driver Board (42-1410-00), power supply and reference schematics
61-2271-FF-STB-00	SYE2271-FF-STB-00 – Free Form See Through Binocular HD Optical Engine with preinstalled SYL2271 panels (42-2271-V0)
71-2271-FF-STB-00	Free Form See Through Binocular Development Kit: Free Form See Through Binocular HD Engine (61-2271-FF-STB-00), SYL2271 panels (42-2271-V0) 2D/3D driver Board (42-1480-00), HDMI/power cable (45-1590-00), and reference schematics