

1080p 0.37" Short Throw LED Optical Engine

Optical Engine

- 1080p LED Projection Engine
- RGB 3 LED Light Source
- Manual Focus
- Low Power Consumption
- Light Weight
- Turn Key Solution for portable devices

Example Applications

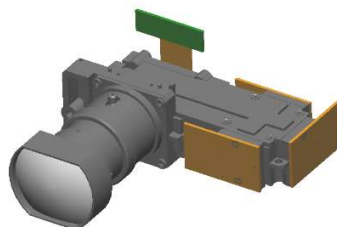
- Portable and Multi-media players
- Smart Home
- Desktop touch projectors
- Gaming projectors
- HDTV set-top boxes
- Laptops & Tablets players
- Head-up displays (HUD)
- Automotive and Digital signage

SYL2281 LCOS Panel (included)

- Second generation Syndiant architecture for improved power and optical efficiency
- Single panel field sequential color Liquid Crystal On Silicon (LCOS) with digital drive
- 0.37" active display diagonal
- 1080p (1920x1080) array of mirrors (4.27 μ m pitch)
- Displays sequential colors up to 9 Color Fields per Frame (CF/F) with programmable color field duration
- Panel illumination times greater than 95%
- No high voltage supply needed; maximum supply voltage is only 3.3 / 3.8V

1. Overview

Syndiant's SYE2281, a short-throw LED projection engine with 1080p resolution, proves highly advantageous for scenarios necessitating both high-definition clarity and intensified display brightness within a compact design. This projection engine provides outstanding image quality, characterized by vibrant colors while adhering to power and cost limitations crucial for energy-efficient applications.



SYE2281-PESC-F00

Syndiant Advantages

- High resolution: Provides a comprehensive user experience by enabling users to access a wide variety of content, such as email messages, attachments, web pages, text, graphics, multimedia, and full-motion videos
- Low power: targeting mobile, battery powered, and plug in the wall applications
- Small factor: Matches requirements for handheld and portable projectors
- Smooth gray scale at all brightness levels, matching the visual response of the eye
- The optical engine comes preinstalled with Syndiant's SYL2281 1080p HD panel, expediting the design-to-market process for projector applications

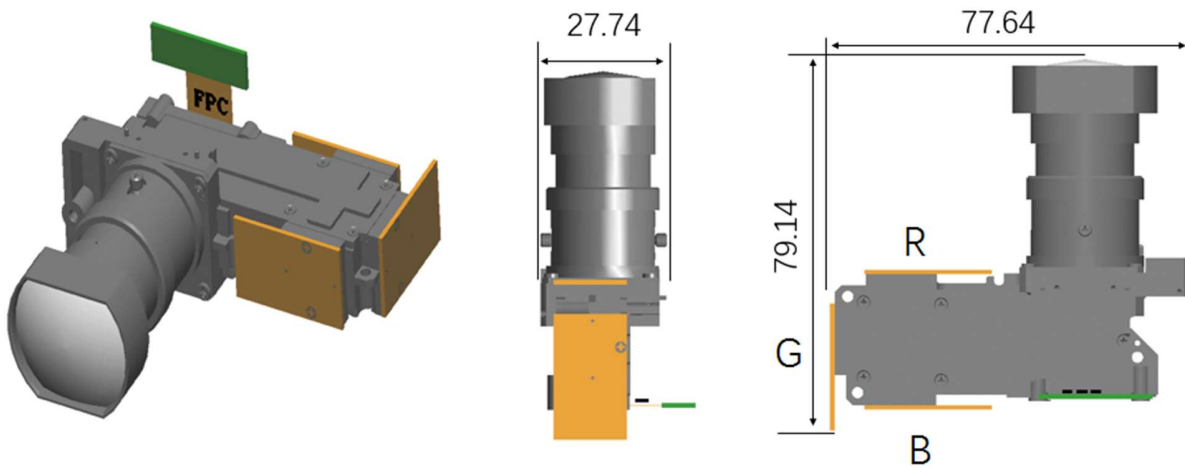
Specifications

Optical Engine		SYL2281 LCOS Panel	
Resolution	1080p (1920x1080)	Display Ratio	16:9
Display Diagonal	0.37"	Pixel Pitch	4.27 μm
Pixel Pitch	4.27 μm	Display Diagonal	0.37"
Light Source	RGB, 3 LEDs	Effective area size	8.1984mm(length) x 4.6116mm(width)
Brightness (Typical)	180 lm	Reflectivity	70%
JBMA Uniformity (Typical)	80%	Fill Factor	90.8%
FOFO Contrast Ratio (Typical)	200:1	Operating LC Temperature	-10 °C~70 °C
Chromatic Coordinates x (5 Points typical)	0.29		
Chromatic Coordinates y (5 Points typical)	0.33	Optical Lens	
Color temperature (5 points typical)	7800K	Throw Ratio	0.76
Color Gamut NTSC (5 points typical)	70%	Offset	100%
Size	79.14*77.64*27.74mm	Projection Picture Size	20-100 inches
Weight	~82g	MTF (all fields)	≥0.4@80 Lp/mm
Operating Temperature	-10°C~+40°C	TV distortion	±1%
Operating Humidity	20%~95%	Wavelength (nm)	B(486nm): G(587nm): R(656nm) = 1:5:2
Storage Temperature	-25°C~+65°C		
Storage Humidity	20%~95%		
Light Source lifetime	~20,000 Hours		

Table 1: LED Information

LED	R	G	B
Peak Current I _f (A)	6	6	6
Typical Voltage V _f (V)	3.75	3.64	3.48
Duty cycle (%)	30.8	46.4	22.8
Typical Power P (W)	6.93	10.13	7.26
Temperature recommendations, max in °C	40	50	50

2. SYE2281-PESC-F00 Optical Engine Mechanical Specifications



3. Part Ordering Information

The following table describes components that can be ordered from Syndiant related to this product:

Ordering Part #	Description
60-2281-PESC-F00	SYE2281-PESC-F00 Optical Engine. 1080p 0.37" Short-Throw Optical Engine with a preinstalled SYL2281 LCOS panel (42-2281-V0). Does not include focus ring, or heatsinks for panel, LED and engine.
64-2281-PESC-F00	SYE2281-PESC-F00 Development kit: Optical engine with DB9 and LED boards