



Electro Optical Components, Inc.

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DMD Micromirror Device

DMD (Digital Micromirror Device) is a new type of fully digital flat-panel display device using MEMS (Micro Electromechanical System, Micro-Electro-Mechanical System) technology integrates the reflective micro-mirror array and CMOS SRAM on the same chip. This array consists of multiple high-speed digital light reflectors and uses a rotating mirror to realize the opening and closing of the optical switch. The manufacturer focuses on the research and development of spatial light modulation devices. Based on DLP chips, it independently develops high-speed driver modules and launches new DMD spatial light modulator products.

Features:

- Reflective structure, high light utilization efficiency
- The micromirror array structure flips quickly, and with the custom-developed high-speed FPGA driver, short response time, high refresh rate, precise control of grayscale
- High structural reliability with a service life of up to 20 years
- Small pixel structure, and minimal spacing between cells for seamless image display

Product parameters:

Item	DND-2K095	DM-1K070
	1920 x 1080	1024 x 768
Micromirror Pitch	10.8 μm	13.68 μm
Fill Factor	94%	92%
Diffraction Efficiency	87%	86%
Frame rate	120 Hz (8 bit) 17857 Hz (1 bit)	22400 Hz (1 bit)
Operating Wavelength	VIS: 400nm-700nm UV: 363nm – 420nm NIR:850nm – 2000nm	
Bit Depth	1-8 bit Adjustable	
Synchronous Interface	Support Input and Output Synchronization	
Response Time	$\geq 1\text{ms}$	
RAM/FLASH	8Gbit (DDR3)/ $\geq 2\text{Gbit}$ (nand flash) + $\geq 32\text{ Gbit}$ (emmc flash)	
PC Transfer Rate	Meet the 40 MB/s transfer rate of USB2.0, 15MB / s write rate of nand flash, and 50MB / s write rate of eMMC	
Connection	HDMI	
Operating Temperature	0°C – 60°C	

Application areas:

- Industrial: laser marking, 3D printing, digital exposure
- Medical: eye care, hyperspectral imaging
- Display: microscopes, projectors, heads-up displays, adaptive lighting

