

Pressure Sensitive Paint Camera

(Product ID: PSP-CCD-C, PSP-CCD-M)

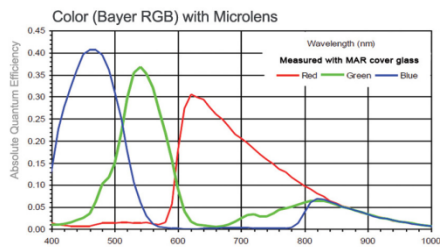
The PSP-CCD is a 2-megapixel CCD camera designed to operate within a PSP system. The camera is small and lightweight at 210g allowing for an array of cameras to be mounted in a tight place for larger scale models and applications. The camera comes in two styles, one with a color chip and one with a monochrome chip. The color camera is used in Binary PSP and particle shadow velocimetry applications whereas the monochrome version is used in monochrome PSP or S3F applications. One approach that allows binary pressure sensitive paint data to be acquired using a single camera involves the use of a color camera (PSP-CCD-C). Rather than use optical filters in front of the camera lens, the filtering is applied on the chip using a standard Bayer filter. In the case of Binary FIB, the signal channel is acquired on the red pixels and the reference channel is acquired on the green pixels. All images are acquired through a single camera and lens and this process minimizes image alignment errors. This single chip system also accomplishes a second goal, all data is acquired simultaneously, and thus the stability of the illumination source is a less significant issue. The major drawback of this approach is the loss of spatial resolution. In a color chip, only 1/4 of the pixels are sensitive to the signal channel (red pixels) on the standard Bayer filter. Despite the loss of spatial resolution, the color camera approach produces excellent results at low speeds. The normal frame rate is 35 fps but can operate at 44 fps in overclock mode. The camera features a software trigger and external TTL trigger over BNC. The camera is compatible with Windows 7, Vista and XP both 32- and 64-bit. The ECCN is EAR99.



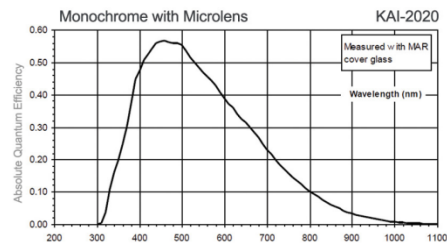
SPECIFICATIONS

Resolution.....1608 x 1208
 Max Frame Rate (normal/overclock)..... 35/44 FPS
 Pixel Size 7.4 μm by 7.4 μm
 Dynamic range..... 12-bit
 Maximum Signal-to-Noise Ratio.....60 db
 Exposure5-μs global shutter

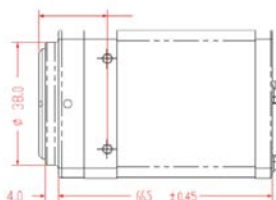
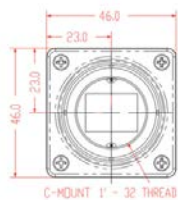
Exposure out TTL/Programmable Interface Gigabit Ethernet
 Lens c-mount
 Sensor 2/3" CCD
 Operating Temperature -40 °C to 85 °C
 Weight210g



Quantum Efficiency of Color Array



Quantum Efficiency of Monochrome Array



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