

1. Description

Imaging System consists of a digital black-and-white or color camera, digital frame grabber, power/data cable, software modules and drivers for Windows, and source code examples for DOS. Typical applications include machine vision, biological or technical imaging, and robotics. The frame grabber and software allow for single frame data capture and camera control. The camera control is via I²C interface, incorporated into the frame grabber. Camera accepts lenses with standard C-mount connection.

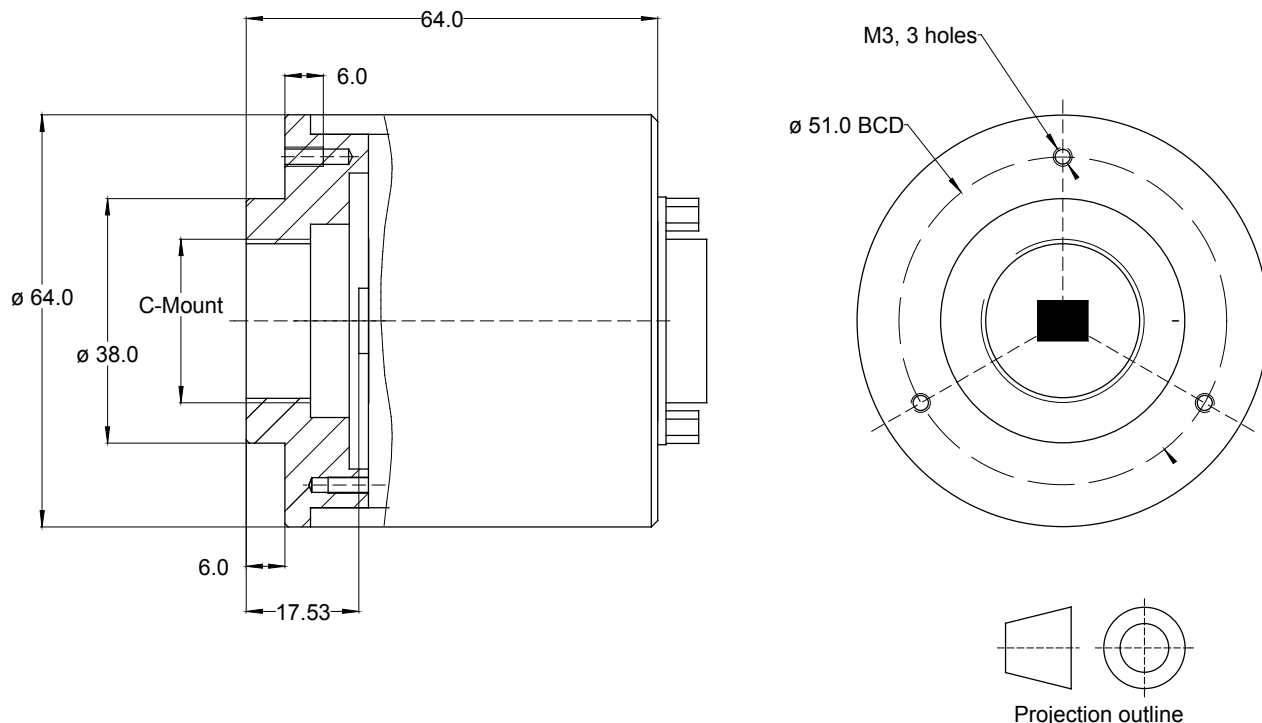
2. Optical specifications

Parameter	Value	Units
Frame size	Programmable, up to 1280x1024	pixels
Pixel size	6.0 x 6.0	microns
Sensitive area size	7.81 x 6.27	mm
Frame rate	18 and up; depends on the window of interest	fps
Scanning mode	Progressive	-
Programmable image controls	-brightness -gain -gamma -scan directions (both vertical, horizontal)	-
Pixel depth	8	bits
Spectral sensitivity range	400-950	nm
Sensor's optical format	1 / 2" (C-mount)	-
Flange back length	0.69 (17.53)	in, (mm)

Photosensitive elements of the array are NOT covered with a heat-absorbing glass window to eliminate the influence of ambient near infrared radiation.

3. Mechanical specifications

Parameter	Value	Units
Flange mounting diameter tolerance	-0.05 .. +0.00	mm
Flange mounting depth tolerance	-0.05 .. +0.00	mm
Weight	200	grams
Housing material	Aluminum, anodized flat black	-
Attachment thread	C-mount type (1"x32TPI)	-
Operating temperature range	-10 .. +60	Celsius deg
Protection	IP 54	-
Maximum allowable shock	3	G
Maximum allowable relative humidity	Up to 90% permissible	%
Output connector	15-pin D, male	-



4. Software, frame grabber specifications

PCI-bus frame grabber allocates 2 Mbytes of memory in the 32-bit PCI memory space. Pixel intensity values can be randomly read directly from the frame grabber's on-board memory. Frame grabber controls the digital camera via incorporated I²C interface to set video and windowing parameters, initiates single frame snapshot, or reset the camera. The frame grabber can be accessed in both DOS and Windows modes. Customers can create their own applications under DOS or Windows environments. Detailed information on the camera's parameters as well as the source code examples are included. They demonstrate how to read image data, control camera parameters, and use the 32-bit memory areas.

For the DOS mode, a 32-bit DOS extender or a 32-bit compiler is required. **No drivers required.** For Windows, the frame grabber can be directly accessed with the use of drivers provided. WDM drivers are compatible with Windows 98, Me, NT, 200, and XP.

Important note for the color camera version: the frame grabber does not have a hardware image processor to convert the Bayer pattern into full-color image. This is to be done in application software.

Images must undergo the following procedures:

1. Color interpolation from the Bayer pattern into R-G-B image
2. White balancing depending on the illuminating light such as daylight, U30, cool white, or incandescent "A"
3. Color correction of the camera's spectral sensitivity to that of the human eye

Colorimetric constants and examples of the equations are provided in the source code files supplied.

5. Available options

1. Color or B/W camera
2. Power/Data cable up to 10 meters
3. Heat-absorbing glass window
4. Lens selection and sourcing

Notice

Lightway Systems reserves the right to make product modifications or discontinue products without notice. Customers are advised to obtain latest written specifications prior to ordering products. Information provided by Lightway Systems is believed to be accurate at the time of its release. Products sales are subject to the Lightway Systems' Terms of Sales in force at the time of order acknowledgment. Lightway Systems' products are not designed, authorized, or warranted for use in life support devices and systems, or any other critical applications which may involve death, injury, property or environmental damages. Using Lightway Systems' products for any critical application is fully at the risk of the customers and their end users and assigns.