



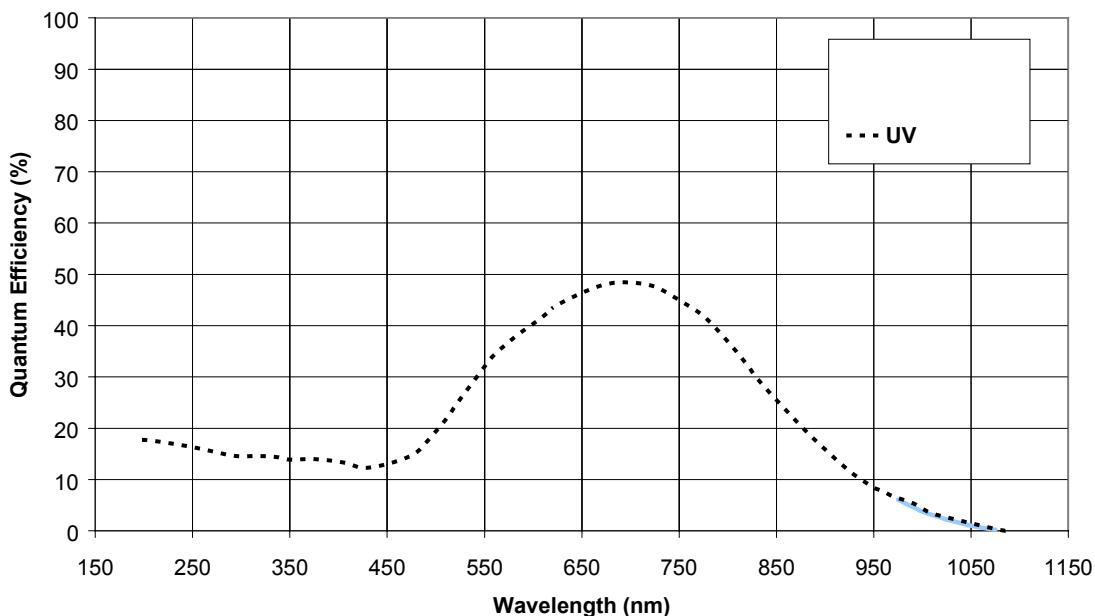
Andor's DB401 CCD is designed to offer the best price/performance characteristics over a wide range of spectroscopy applications. The 1024 x 128 array camera is ideally suited for rapid, multi-channel, applications involving medium-to-low light levels, including emission and fluorescence spectroscopy. The system boasts negligible dark current with thermoelectric cooling down to -40°C.

| | | | | |
|---------|--------------------------------|------------|-----------------------------------|------------|
| ●Sensor | Active Pixels | 1024 x 128 | Dummy Pixels*1 | 8, 8, 0, 0 |
| | Pixel Size (µm) | 26 | Image Area (mm) | 26.6 x 3.3 |
| | Pixel Well Depth (e-, typical) | 300,000 | Register Well Depth (e-, typical) | 1,000,000 |
| | Linearity (% maximum)*2 | 1 | Gain (e-/count @ 1&2, 16, 32 µs) | 7, 7, 3.5 |
| | Vertical Clock Speed (µs) | 16 | | |

| | | | |
|--------|------------------------------------|----------------|-----------------|
| ●Noise | <i>System Readout Noise (e-)*3</i> | <i>Typical</i> | <i>Maximum:</i> |
| | 31kHz pixel readout rate | 4 | 8 |
| | 1MHz pixel readout rate | 18 | 25 |

Quantum Efficiency for CCD's at -90°C

Efficiency
●Quantum



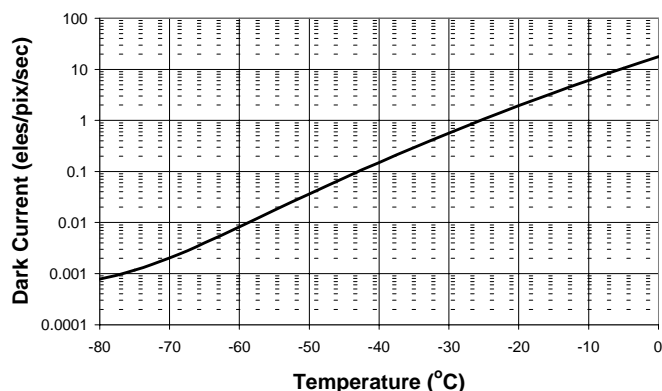
Peak Quantum Efficiency at room temperature (%)*4

| Coating Type | Minimum | Typical |
|--------------|---------|---------|
| UV @ 700 nm | 40 | 47 |
| | | |
| | | |

| | | |
|-----------------------|--|---|
| ● Features & Benefits | Peak QE of 95% | High detector sensitivity |
| | Min operating temp of -65°C with TE cooling | Negligible dark current without the aggravation or safety concerns associated with LN ₂ |
| | Guaranteed vacuum seal | Reliability and low maintenance |
| | Front-illuminated, back-illuminated option and coating options | Offers the best price/performance option |
| | 26 x 26µm pixel size | Optimised pixel size for dynamic range and resolution |
| | Andor-MCD Software | Friendly Windows user interface offers system integration, automation and advanced data manipulation facilities |

● Dark Current

◆6



● Temperature (°C)

| | Auxiliary Cooling Connector | External PSU PS150 |
|---|-----------------------------|--------------------|
| Air-cooled <i>(ambient air @ 20°C)</i> | -55 | -65 |

● Operating & Storage Conditions

| | |
|-----------------------|------------------------|
| operating temperature | 0°C to 30°C ambient |
| relative humidity | < 70% (non-condensing) |
| storage temperature | -25°C to 55°C |

● For complete system use with...

The DB401 requires one of the following controller card options

CCI-001 PCI Controller card with 62KHz & 31KHz pixel readout rate options

CCI-010 PCI Controller card with 1MHz, 500KHz, 62KHz & 31KHz pixel readout rate options

The DB401 also requires one of the following software options.

Andor-MCD software – a ready-to-run Windows-based package with rich functionality for data acquisition and manipulation

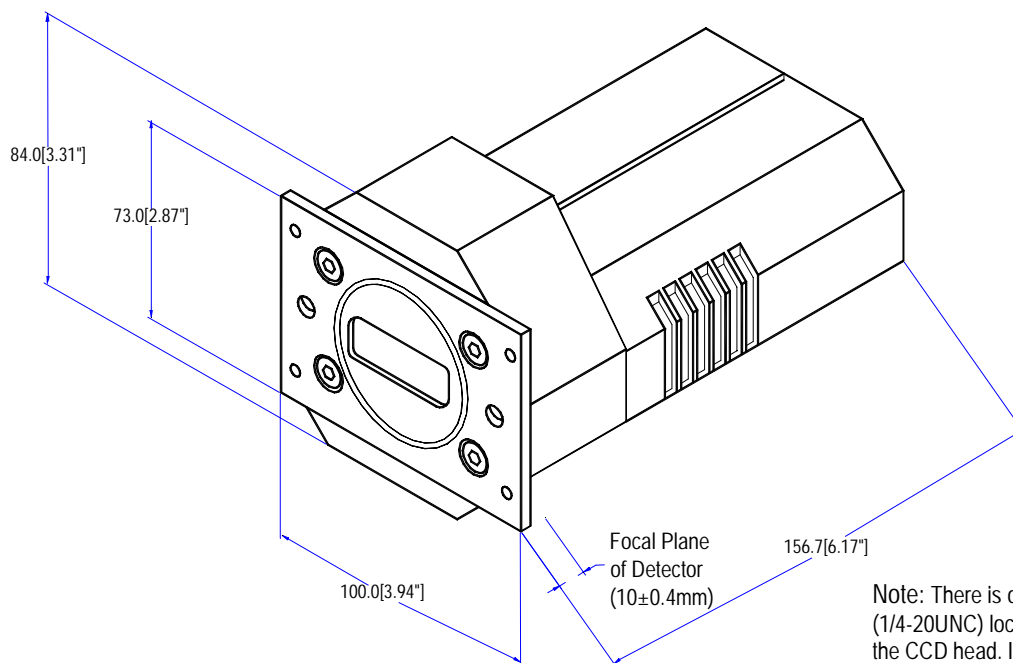
Andor-SDK-CCD – a DLL driver and software development kit that lets you create your own applications for the Andor camera

The DB401 may be used with the following accessories

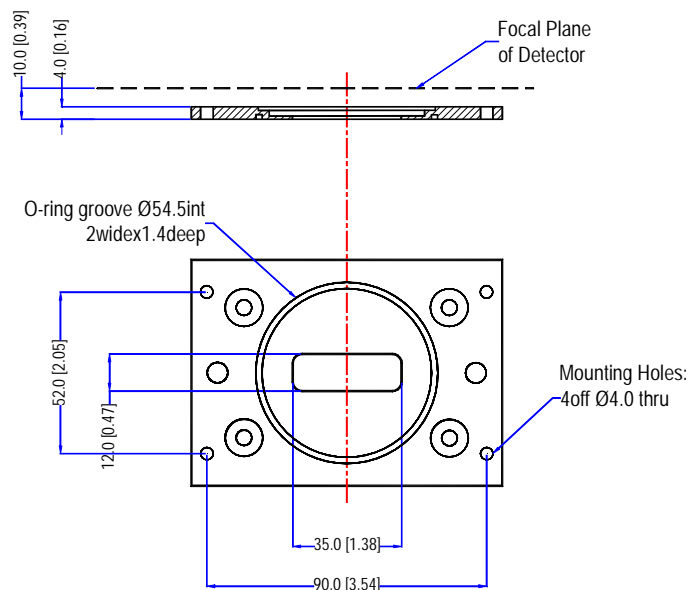
IO160 Breakout box for interface signals

LMS-NIK-F Shutter and Nikon lens mount

Contact Andor for details of spectrographs and adapters that can be used with the DB401. Contact details on back page.



Note: There is one mounting hole (1/4-20UNC) located on the base of the CCD head. It is positioned centrally at a distance of 30mm from the front of the front plate.



Weight: 2 Kg [4lb 8 oz]

- ◆1 Chip manufacturers may include a number of pixels or elements that are neither active nor part of the shift register. Andor refers to these pixels as dummy pixels and represents them in a 4-part notation (W, X, Y, Z), where:

 W = dummy pixels to the left of the shift register (non-amplifier end)
 X = dummy pixels to the right of the shift register (amplifier end)
 Y = dummy pixels at the top of the image area
 Z = dummy pixels between the shift register and the image area.

It should be noted that the elements can be made up of either pixels, rows or columns.

- ◆2 Linearity is measured from a plot of Counts vs. Signal over the 16 bit dynamic range. Linearity is expressed as a percentage deviation from a straight line fit. This value is not measured on individual systems.

- ◆3 System Readout noise is for the entire system. It is a combination of CCD readout noise and A/D noise. Measurement is for Single Pixel readout with the CCD at a temperature of -20°C and minimum exposure time under dark conditions.

- ◆4 Quantum efficiency of the CCD sensor is measured by the CCD Manufacturer.

- ◆5 The graph shows typical dark current level as a function of temperature for front-illuminated (FI) and back-illuminated (BI) CCDs. Systems are specified in terms of minimum dark current achievable rather than absolute temperature. The dark current measurement is averaged over the CCD area excluding any regions of blemishes.

Ordering Information:

To order this camera quote part number **DB401-UV**: front-illuminated device with UV coating



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