



Telephone: **044-22574479**  
Extn: 5442

Department of **Electrical Engineering**  
**Indian Institute of Technology, Madras**  
I.I.T.P.O., MADRAS – 600 036.

Ref. No. 

ELE	DEBD	2019	<u>UV-VIS CCD camera</u>
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Date: 14/02/2020

Due Date: 06/03/2020

Under Certificate of posting

To:

Dear Sirs,

1. Quotations are invited in duplicate for the various items shown below/overleaf/enclosed list.
2. The Quotations duly sealed and superscribed on the envelope with the reference no. and due date, should be addressed to the undersigned so as to reach him on or before the due date stipulated above.
3. The Quotations should be valid for sixty days from the due date and period of delivery required should also be clearly indicated.
4. If the item is under DGS & D Rate contract, Rate Contract Number and the price must be mentioned. It may also please be indicated whether the supply can be made direct to us at the Rate Contract price. If so, please send copy of the R.C. (Please note that we are not Direct Demanding Officers).
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable.
6. Local Firms: Quotations should be for free delivery to this Institute. If Quotations are for Ex-Godown, delivery charges should be indicated separately.
7. Firms outside Chennai: Quotations should be F.O.R Chennai. If F.O.R consignor station, freight charge by passenger train / lorry transport must be indicated. If Ex-Godown, packing, forwarding and freight charges must be indicated.
8. The rate of Sales / General Taxes and the percentage of such other taxes legally leviable and intended to be claimed should be distinctly shown along with the price quoted. Where this is not done, claim for Sales / General Taxes will be admitted at any stage and on any ground whatsoever. The taxes leviable should take into consideration that we are entitled to have Concessional Sales Tax applicable to non-Government Educational Institutions run with no profit motive for which a commission Sales Tax certificates will be issued at the time of final settlement of the bill.
9. Goods should be supplied carriage paid and insured.
10. Goods shall not be supplied without an official supply order.
11. Payment: Every attempt will be made to make payment within 30 days from the date of receipt of bill / acceptance of goods, whichever is later.

**Specifications enclosed and quotation to be sent to the below address:**

**Dr. Debdutta Ray**  
**Assistant Professor,**  
**Department of Electrical Engineering,**  
**Indian Institute of Technology, Madras,**  
**Chennai – 600 036.**

Yours faithfully,

HEAD / Project Co-Ordinator  
परियोजना समन्वयक  
Project Co-ordinator  
विद्युत इंजीनियरिंग विभाग  
Department of Electrical Engineering  
भारतीय प्रौद्योगिकी संस्थान मद्रास  
INDIAN INSTITUTE OF TECHNOLOGY MADRAS  
चेन्नै / Chennai - 600 036 भारत / India

## Tender specification for UV-VIS CCD camera

**Compatibility :** Offering CCD should be compatible with our existing ANDOR Kymera 328i spectrograph. Supplier should provide suitable flange/mount to attach CCD with spectrograph. Single software should simultaneously control offered CCD, and our existing ANDOR Kymera 328i spectrograph, grating rotation, slits controls, other related accessories.

**Configuration:** Back Illuminated, UV-Enhanced, AR coated CCD

Active pixels (atleast): 1024 x 255

Pixel size: 26 x 26  $\mu\text{m}$  or smaller

Image area (atleast): 26.6 x 6.6 mm with 100% fill factor

**Wavelength sensitivity range:** 200nm to 1110nm

### Minimum QE required @ 25°C temperature

Better than 68% @ 250nm

Better than 65% @ 500nm to 700nm

Better than 50% @ 850nm

Register well depth: 1,000,000 e

Readout (atleast): 33 kHz, 50 kHz, 100 kHz

Read noise (e-) (not more than): 6 with @ 33 kHz readout

Read noise (e-) (not more than): 10 with @ 100 kHz readout

Sensitivity (e-/count): 2 @ 33 kHz readout

Sensitivity (e-/count): 9 @ 100 kHz readout

### Sensor Minimum temperatures (the following should be available):

Air cooled: -80°C

Coolant recirculatory: -95°C

Coolant chiller, coolant @ 10 °C, 0.75 l/min: -100°C

**Dark current, e-/pixel/sec @ max cooling (should not exceed):** 0.002

Max spectra per second (atleast): 88 (10 rows crop mode), 75 (Full Vertical Bin)

Blemish specifications: Grade 1 sensor from supplier

Linearity (atleast): 99%

Digitization: 16 bit

Vertical clock speed: 8, 16, 32, 64 us (software selectable)

**Software:** Latest 64-bit & 32-bit compatible data acquisition and control software should be Included

Supplier should agree to provide Performance test reports prior to dispatch of CCD.

Authorisation letter from manufacturer to participate in tender.

**Vendor must provide complete compliance statement against each technical point**

  
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Project Co-ordinator  
विद्युत इंजीनियरिंग विभाग  
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