



CSIO

सीईएसआईआर – केन्द्रीय वैज्ञानिक उपकरण संगठन

CSIR-CENTRAL SCIENTIFIC INSTRUMENTS ORGANISATION

सैक्टर 30 सी चंडीगढ़ Sector-30C, Chandigarh 160 030

Sector - 30/C, Chandigarh - 160 030 (India)

Phone: 0172-2672-359e.mail : dhairya@csio.res.in

निविदा संख्या / Tender No.	CSIO/LPC/2023-(μ-NoC)/MLP0031/14	दिनांक / Issue Date:	6-11-23
निविदा प्राप्त का अंतिम समय एवं दिनांक / Date & time of receipt of tender	20-Nov-23, 5:00 PM	निविदा खोलने का समय एवं दिनांक / Date & time of opening of Tender	21-Nov-23

M/s \_\_\_\_\_

Dear Sir,

निदेशक, सीएसआईओ की ओर से, हम नीचे दी गई वस्तुओं/संलग्न वस्तुओं को खरीदने के इच्छुक हैं। कृपया अपनी मुहरबंद निविदा/कोटेशन हाथ/डाक/या ई-मेल (जो लागू हो) के माध्यम से आमंत्रण निर्देश के रूप में भेजें। देर से प्राप्त होने वाली निविदाओं/उद्धरणों पर बिल्कुल भी विचार नहीं किया जाएगा। On behalf of the Director, CSIO, we are interested to purchase the below given items/attached items. Kindly send your sealed Tender/Quotation by hand/post/or through E-mail (which is applicable) as per invitation instructions. Tenders/quotation received late will not be considered at all.

Sr. No.	Name of Item (Additional details, if any, attached)	Qty	Single/Two bid system	EMD applicable more than Rs.2.50 lakh
			Single Bid	Submit Annexure 5F or Rs. _____
1	Electronic Components (As Per Annexure-1)	67 Items		
2	LED Chipsets (As Per Annexure-2)	7 Items		

Note: Please carefully refer attached terms & conditions before submission of tender to avoid rejection. The offer received without mentioning the terms & conditions i.e validity of offer, deliver period, payment terms, warranty etc and the enclosed Formats/Annexures will not be considered and summarily rejected. Submit the tender under the sealed Cover & shall be superscribed with NIT of Local Purchase Committee, LPC NIT no., Due date, Date of opening\_and addressed to the Director, CSIR-Central Scientific Instruments Organisation, Sector- 30 C, Chandigarh-160030 and also mentioned- Kind Attention Dr Dhairya S Arya, Scientist.

Prospective bidders are requested to registered themselves at [www.eprocure.gov.in](http://www.eprocure.gov.in) for our E-Tender information/requirement. Bidders may also upload their product on GeM portal.

Yours faithfully

(Dr Dhairya S. Arya, Scientist)

Website: [www.csio.res.in](http://www.csio.res.in) E.Mail: [dhairya@csio.res.in](mailto:dhairya@csio.res.in) Phone: 0172-2672-359

## TERMS & CONDITIONS

1. **The quotation/tender must be submitted as per tendered specifications, terms & conditions and should be free from corrections/erasures. In case there is any unavoidable correction it should be properly attested. If not the quotation will not be considered. Hand written Quotations will not be considered. Please refer our CSIO Website for complete tender terms & conditions, different Format/Annexure under CSIR Manual on Procurement of Goods 2019. Ensure to provide the required documents to avoid rejection.**
2. The rates should be on FOR, CSIO, Chandigarh (Central Stores) basis for indigenous items. Where there is no mention of packing, forwarding, freight, insurance charges, taxes, **delivery period normally 90 days** or as specified in the tender documents etc. such offers shall be treated as unresponsive and will be rejected.
3. **Taxes: CSIR-CSIO is registered with Dept. of Scientific & Industrial Research, Govt. of India, GST & IGST are leviable vide notification no. Custom Duty under Govt. Notification No. 51/96-Custom dated 23.07.1996 and & No. 43/2007-Customs dated 30.06.2017 and Govt. Notification No. 45/2017-Central Tax (rate) & No. 45/2017-Integrated Tax (rate) dated 14.11.2017. Hence concessional GST & IGST for Goods, if any, is applicable and should be shown separately. No other charges than those mentioned clearly in the quotation will be paid. Please carefully refer the provisions for taxes before submitting your offer.**
4. **The Bidder is expected to examine all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required in the bidding documents or submission of a bid not substantially responsive to the bidding documents in every respect will be at the Bidder's risk and may result in rejection of its bid. Our Pan No. PANCSIR AAATC2716R, IEC 0588137685. Our GST No. is 04AAATC2716R12N. Supplier Should furnish PAN & GST Number in their quotation & on Invoice also. TDS would be recovered as per Govt rules.**
5. **Bid security (Ernest Money Deposit) is applicable for the bid more than Rs. 2.50 lakh only. Accordingly EMD should be submitted as required in the Bid documents either in the shape of Bid Format Annexure-5F or in Indian currency for Rs..... (where applicable). EMD should be in favour of the Director, CSIO payable at Chandigarh. Our Banking details: State Bank of India, Sector 30-C, Chandigarh Account No. 30267029400 IFC Code 01443 (Attach the proof of document of online deposit of EMD). The MSEs are provided tender document free of cost, where applicable, and are exempted for the payment of Bid Security provided the goods are produced and the services are rendered by them and not for any trading activities undertaken by them. As such, if you are manufacturer, item produced by you exemption is applicable otherwise EMD or Annexure 5F as per tender condition should be submitted to avoid rejection. Whenever the bidder chooses to submit the Bid Security in the form of Bank Guarantee, then he should advise the banker issuing the Bank Guarantee to immediately send by Registered Post (A.D.) an unstamped duplicate copy of the Guarantee directly to the Purchaser with a covering letter to compare with the original BG for the correctness, genuineness, etc **EMD will be returned with the approval of the Sr. Most Officer of the Purchase when the bidding process is complete.****
6. **Performance Security - On the event of award of purchase order in your favour, you need to submit a **Performance Bank Guarantee (PBG)** valid for a period of 60 days beyond the Warranty period of..... (retain only, if applicable). In case of all capital items ( equipment, machine etc) costing above 2.5 lakh rupees , the successful bidder will have to submit PBG (@3% of total value) within 21 days from the date of issuing purchase order. PBG order is applicable upto 31.03.2023 after that it will be 5 to 10 percent as per tender terms**
7. The sealed tenders where applicable should be submitted. **Cover shall be superscribed with NIT of Local Purchase Committee, LPC NIT no., Due date, Date of opening and addressed to the Director, CSIR-Central Scientific Instruments Organisation, Sector- 30 C, Chandigarh-160030 and also mentioned- Dr. Dhairya S. Arya, Scientist .**
8. The acceptance of the tender/quotation will rest with the competent authority of **Central Scientific Instruments Organisation, Sector-30, Chandigarh** who does not bind himself to accept the lowest quotation and reserves the right to himself to reject, or partially accept any or all the quotations received without assigning any reason.
9. The bidder may submit the applicable Price in Price Schedule Form. For reference as our complete tender document available on the website with all Annexures.
10. Complete specification with manufacturer's name and address should be given while quoting. Literature/Pamphlets should also be enclosed wherever applicable to avoid rejection.
11. **Bidder who does not manufacture the goods it offers to supply shall submit **Manufacturers' Authorization Form (MAF)** where applicable using the form specified in the bidding document to demonstrate that it has been duly authorized by the manufacturer of the goods to quote and/or supply the goods, failing which offer will not be considered/rejected. The offer submitted through authorisation on behalf of the principal, the terms & conditions settled by the Agent/dealer with buyer will be binding on their principal.**
12. The mode of dispatch/transportation of the items must be by **Road/Rail/Air only. (Retain one only).**
13. In case the items in the enquiry are covered by any rate contract or running contract finalised by any other state or central Government, it should be specified in your quotation and accepted contract rates should also be mentioned.
14. **Delivery period required for supplying the material should be invariably specified in the quotation. The offered delivery period shall have to be strictly adhered to in case an order is placed failing which **Liquidated Damages Clause** will be applicable for delays: The applicable rate is 0.5% per week and maximum deduction is 10% of the contract price. **Installation/commissioning:** Equipment/Instruments are required to be commissioned/installed/ demonstrated successfully immediately or within 30 days from the date of receipt of the system in CSIO by the Principal or by their authorized Agent, **failing which the Liquidated Damage Clause will be applicable as mentioned above.****
15. **Warranty Period:** Please mention the warranty period of equipment, which should be from the date of satisfactory installation. **The offer received for lesser warranty, as asked for in the tender, will be rejected/ignored.** All supplies are

subject to inspection and approval before acceptance. Manufacturer warranty certificates and manufacturer/Government approved lab test certificate shall be furnished along with the supply, wherever applicable.

16. **Terms of Payment:** Our normal payment terms are 100% (hundred percent) within 30 (thirty) days on receipt and acceptance of material at our site in good condition or after installation where applicable. Please inform your Bank details for RTGS payment. **Banking details should be available on Bill/invoice.** Other mode of payment may be decided by the by the Committee with the approval of the Director. **Supplier should furnish PAN & GST Number in Invoice. TDS would be recovered as per rules.**
17. **Reasonability of Prices/Fall Clause**
- i) Quote best minimum prices applicable for a CSIR-CSIO, Research Institution, leaving no scope for any further negotiations on prices.
- ii) **The quoting party should give a certificate to the effect that the quoted prices are the minimum and they have not quoted the same item on lesser rates than those being offered to CSIO to any other customer nor they will do so till the validity of offer or execution of the purchase order, whichever is later.**
- iii) Copies of atleast two recently supplied orders of the last two years received from other Government Organisation alongwith details of such supply orders preferably in India for the same or similar goods may be submitted with the offer. Reasons of price difference of the supply order to other Government Organisation/Universities & those quoted to us, if any, may be submitted. The bidder must give details of identical or similar equipment, if any, supplied to any CSIR lab during the last three years alongwith the final price paid and Performance certificate from them.
18. Certificate of undertaking that the equipment is of latest technology & will not be obsolete within 5 years after warranty will be attached with the offer. All essential spares parts of the offered equipment will available with the manufacturer or in India with your Indian Agents for a period of at least 5-7 years after warranty period which will be required at later stage
19. Code of Integrity has to be maintained by Bidders/Suppliers/Contractors by maintaining highest standards of ethics in the Procurement process and prohibits corrupt practice/Fraudulent practice/Anti- Competitive practice / Coercive Practice/ Conflict of Interest and Obstructive practice either directly or indirectly during the process of contract.
20. Instructions to Bidders, General Conditions of Contract applicable to limited tenders originating from S&P Division along with different formats can be viewed on our website [www.csio.res.in](http://www.csio.res.in) under the heading tenders. If the ordered materials are covered under restricted category of EXIM policy in India, the vendor/agent may intimate such information for obtaining necessary licence in India
21. Tender conditions (printed on the reverse), if any, or otherwise sent along with the tender shall not be binding on us.
22. MSME benefits will be given to the eligible supplier as per the Govt. guidelines subject to submission of proper document as per policy or Udyog Adhar Udyog Memorandum in respective category. As per Govt. of India procurement policies (under Make in India (MII)).  
A copy of **self - certification** about the products offered in this tender meets local content requirement for **Class- I Local supplier (local content equal to or more than 50% )** or **Class- II Local supplier (local content more than 20% but less than 50% )** as per **Make in India Policy No. P-45021/2/2017-PP(BE-II)dt- 16/09/2020, should be attached with bid.** The details of the **location(s)** at which the local value addition is made should also be mentioned in the self-certification. **Exemption will be given as per the policy of Govt Of India. Beyond the exemption limit, Non-local supplier will not participate in any tender, their bid will be rejected. Whenever Govt will issue any amendment in this policy, the same will be applicable accordingly.**
23. A copy of certificate regarding **Restrictions on procurement from a bidder of a country which shares a Land Border with India** wherein if any bidder from a country which shares a land border with India will be eligible to bid in any procurement whether of goods, services or work only if the bidder registered with the competent authority, should be attached with bid.
24. Above instructions & our standard terms & conditions must be complied failing which your offer may be liable for rejection.
25. The Director, CSIR-CSIO, Chandigarh reserves the right to reject all or even the lowest quotation without assigning any reason. All disputes shall be settled in the courts of Chandigarh Jurisdiction only

Yours faithfully,



(Dr Dhairya S. Arya, Scientist)  
For & on behalf of CSIR-CSIO

**Format for Acceptance of Terms & Conditions of Tender, Code of Integrity & Conflict of Interest & Reasonability of Price (TO BE FURNISHED ON BIDDER'S LETTERHEAD)**

Date: \_\_\_\_\_

To

\_\_\_\_\_

\_\_\_\_\_

(Name & address of the Purchaser)

**Subject: Acceptance of Terms & Conditions of Tender, Code of Integrity & Conflict of Interest & Reasonability of Price**

Tender Reference No. \_\_\_\_\_

Dear Sir,

**(1) Acceptance of Terms & Conditions of Tender**- *"I have read the clause regarding restrictions on procurement from a bidder of a country which shares a land border with India; I certify that this bidder is not from a country or, if from such a country, has been registered with the Competent Authority, I hereby certify that this bidder fulfills all requirement in this regard and is eligible to be considered. (Where applicable, evidence of valid registration by the Competent Authority shall be attached.)"* (Refer to D.O.F. No.6/18/2019-PPD Dated, 28 July, 2020)

**(2) Code of Integrity & Conflict of Interest** -I/We hereby declare that we shall abide by the Code of Integrity for Public Procurement and have no conflict of interest. The details of previous transgressions of the code of integrity, if any, with any entity in any country during the last three years or of being debarred by any other Procuring Entity are as under:

(a)

(b)

(c)

We undertake that we shall be liable for any punitive action in case of transgression/contravention of this code. (Refer para 3.2.1 & 5.1.2 (ix)(m) of the CSIR Manual)

**(3) PRICE REASONABILITY CERTIFICATE**

This is to certify that the prices quoted are best and minimum and we have not quoted the same on lesser rates than those being offered to CSIR-CSIO to any customer nor we will do till the validity of offer or execution of Purchase Order

Yours faithfully,

(Signature & Name of the Authorized Signatory with Company Seal)

**Format for Self Certification by the Bidder for Local Content**

(Refer to Order No. P-45021/2/2017-PP (BE-II) dated 16 September 2020)

**(On the Letter Head of the Bidder)**

Ref.No: \_\_\_\_\_

Date \_\_\_\_\_

To:

\_\_\_\_\_

(Name & address of the Purchaser)

S.No.	Name of Item	Percentage of Local Content	Location at which value Addition is made	Status of the bidder, whether, Local Supplier I /Local Supplier II or Non-Local Supplier.

For more details in this connection you may kindly go through the "Public Procurement (Preference to Make in India), Order 2017 as revised from time to time and available on the website of the Department for Promotion of Industry and Internal Trade at <http://dipp.gov.in>.

(As per OM No. P-45021/102/2019-BE-II-Part(2) (E-50310) dt March 4, 2021 issued by Public Procurement Section, Department of Promotion of Industry and Internal Trade, Government of India, Bidders offering imported products will fall under the category of Non-Local Supplier). Class-I & Class-II Supplier is as:

A) I / We certify that I / we come under **Class-I Local Supplier** Category whose goods / services local content is equal to 50% or more than 50%.

**OR**

B) I / We certify that I / we come under **Class-II Local Supplier** Category whose goods / services local content is more than 20% but less than 50%.

**(Please Tick from A or B which is appropriate)**

We state that the value addition of local content is \_\_\_\_% and value addition has been made by us at \_\_\_\_\_ (mention the address please).

I / We hereby certify that the above statement is true and correct to the best of my knowledge. I understand that a false statement / declaration will disqualify / debar me from the process.

CSIR-CSIO Tender No. \_\_\_\_\_

Signature  
(Name of the Authorized Signatory)  
Company Seal

**Bid-Security(EMD) Declaration Form(Applicable for the tender cost more than Rs. 2.50 lakh)**

(Refer para 5.1.2 (ix)(d) & 6.1.1 (02) of the CSIR Manual)

Date: \_\_\_\_\_

Bid No. \_\_\_\_\_

To:

(insert complete name and address of the purchaser)

\_\_\_\_\_

I/We. The undersigned, declare that:

I/We understand that, according to your conditions, bids must be supported by a Bid Securing Declaration.

I/We accept that I/We may be disqualified from bidding for any contract with you for a period of one year from the date of notification if I am /We are in a breach of any obligation under the bid conditions, because I/We

(a) have withdrawn/modified/amended, impairs or derogates from the tender, my/our Bid during the period of bid validity specified in the form of Bid; or

(b) having been notified of the acceptance of our Bid by the purchaser during the period of bid validity (i) fail or reuse to execute the contract, if required, or (ii) fail or refuse to furnish the Performance Security, in accordance with the Instructions to Bidders.

I/We understand this Bid Securing Declaration shall cease to be valid if I am/we are not the successful Bidder, upon the earlier of (i) the receipt of your notification of the name of the successful Bidder; or (ii) thirty days after the expiration of the validity of my/our Bid.

Signed: (insert signature of person whose name and capacity are shown) in the capacity of (insert legal capacity of person signing the Bid Securing Declaration).

Name: (insert complete name of person signing he Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of : (insert complete name of Bidder)

Dated on \_\_\_\_\_ day of \_\_\_\_\_ (insert date of signing)

Corporate Seal (where appropriate)

(Note: In case of a Joint Venture, the Bid Securing Declaration must be in the name of all partners to the Joint Venture that submits the bid)

**MANUFACTURERS' AUTHORIZATION FORM Annexure- 5D**

(The Bidder shall require the Manufacturer to fill in this Form in accordance with the instructions indicated. This letter of authorization should be on the letterhead of the Manufacturer and should be signed by a person with the proper authority to sign documents that are binding on the Manufacturer.)

Date: (insert date (as day, month and year) of Bid submission)

Tender No: (insert number from Invitation for Bids)

To (insert complete name and address of Purchaser) WHEREAS

We (insert complete name of Manufacturer), who are official manufacturers of

(insert category of goods manufactured), having factories at (insert full address of Manufacturer's factories), do hereby authorize (insert complete name of Bidder) to submit a bid the purpose of which is to provide the Goods, manufactured by us (insert the category of Goods), and to subsequently negotiate to sign the Contract.

We hereby confirm that we shall be solely and fully responsible in case of discrepancy with regard to quality, quantity, Packages or defects at the time of supply/usage. In such cases we shall provide free replacement immediately.

Signed (insert signature(s) of authorized representative(s) of the Manufacturer)

Name: (insert complete name(s) of authorized representative(s) of the Manufacturer)

Title (insert Title)

Duly authorized to sign this Authorization on behalf of: (insert complete name of Bidder)

Dated on.....day of ..... [Insert date of signing]

## Annexure-1

## Electronics Components Specification as per CSIO.

	Sr. No.	Item	Quantity	CSIO Specifications
Category-1	1	SMD Resistor Box	1	1 Ohm to 1 M Ohm Tolerance $\pm 1\%$ Wattage: 1/4W 0.25W
	2	Resistor Box Type 1	1	1 ohm to 10 Mohm Tolerance: $\pm 5\%$ Wattage: 1/4W 0.25W
	3	Resistor Box Type 2	1	1 ohm to 1 Mohm Tolerance: $\pm 5\%$ Wattage: 1/2W 0.5W
	4	Variable Resistor Box	1	Type-100 $\Omega$ (101), 1K $\Omega$ (102), 10K $\Omega$ (103), 100K $\Omega$ (104), 200 $\Omega$ (201), 2K $\Omega$ (202), 20K $\Omega$ (203), 200K $\Omega$ (204), 500 $\Omega$ (501), 5K $\Omega$ (502), 50K $\Omega$ (503), 500K $\Omega$ (504) Tolerance: 10% Rated Power: 0.5W, Max Operating Voltage: 300 V.
Category-2	5	SMD Capacitor Box	1	100 pF to 3.3 uF Maximum Operating Temperature: + 125 C Minimum Operating Temperature: - 55 C 1v to 220 V Tolerance $\pm 5\%$
	6	Capacitor Box Ceramic	1	2pF to 1kpF ceramic disk capacitor Tolerance $\pm 5\%$
	7	Capacitor Box Electrolyte	1	Electrolytic capacitors 10V 16V 25V 50V, range from 0.1uF to 1000uF



## Annexure-1

				High-precision aluminum electrolytic capacitors. temperature range from -40°C to +105°C, tolerance $\pm 20\%$
	8	Variable / Trimming capacitor	1	Plastic Encapsulated 6MM adjustable Capacitors 5pf 10pf 20pf 30pf 40pf 50pf 60pf 70pf 120pf
Category-3	9	SMD Inductor Box Type 1	1	High frequency monolithic type chip coil book kit 1.0nH ~ 270nH Tolerance: $\pm 0.3\text{nH}$ , or $\pm 5\%$
	10	SMD Inductor Box Type 2	1	0.015uH to 100uH Surface Mount Type Tolerance: $\pm 0.3\mu\text{H}$
	11	Inductor Box	4	Axial inductors 100 $\mu\text{H}$ , 10 $\mu\text{H}$ , 150 $\mu\text{H}$ , 1 $\mu\text{H}$ , 220 $\mu\text{H}$ , 22 $\mu\text{H}$ , 330 $\mu\text{H}$ , 33 $\mu\text{H}$ , 470 $\mu\text{H}$ , 47 $\mu\text{H}$ , 560 $\mu\text{H}$ , 1mH. Tolerance $\pm 5\%$
	12	Variable Inductor Box	1	15 nH - 100nH 1.5T/2.5T/3.5T/4.5T/5.5T Operating Frequency: 30-200MHz Temp. Coefficient: <150ppm/°C  Tolerance: $\pm 0.3\mu\text{H}$
Category-4	13	Transistor NPN Kit	1	NPN, Bipolar Transistor 2n3904 (NPN), 2n5551 (NPN), C945 (NPN), C1815 (NPN), SS8050 (NPN), S9014 (NPN), BC337 (NPN), BC547 (NPN), BC548 (NPN), 2n5088 (NPN), 2n2222a (NPN), 2n2222a (NPN), 2N3773
	14	Transistor PNP Kit	1	PNP, Bipolar Transistor 2n3906 (PNP), 2n5401 (PNP), A733 (PNP), A1015 (PNP), SS8550 (PNP), S9015 (PNP), BC327 (PNP), BC557 (PNP), BC558 (PNP)
	15	Germanium NPN Kit	1	2N1304 (NPN Germanium) AC130 (NPN Germanium) 2N1304, AC130, USSR MP38a
	16	Germanium PNP Kit	1	AC121 Germanium ACY23 Germanium USSR - MP42b ACY23

Annexure-1

	17	JFET Kit	1	J107 (N-Ch) J113 (N-Ch) J175 (P-Ch)J201 (N-Ch) (SMD on J202 (N-Ch)(SMD J211 (N-Ch) PN4391 (N-Ch) PN4393 (N-Ch) PF5102 (N-Ch) J111 (N-Ch) 2SK117 (N-Ch)
	18	Power Transistors Kit	1	TIP122 (NPN Transistor) TIP127 (PNP Transistor) BD139 (NPN Transistor) BD140 (NPN Transistor) MJ2955 (PNP Transistor)
	19	Darlington's Kit	1	MPSA13 (NPN) MPSA14 (NPN) MPSA64 (PNP) MPSA65 (PNP) 2n5306 (NPN) BC517 (NPN)
	20	Power MOSFET Kit	1	IRF3205 MOSFET [ 55V, 110A, 200W ] N-Channel Power MOSFET 10 pc pack
	21	Instrument Amplifier	10	AD620BNZ  1 Channel 3 dB Bandwidth: 1 MHz SR - Slew Rate:1.2 V/us CMRR - Common Mode Rejection Ratio:120 dB
	22	Analog digital converter	10	MCP3008 8-Channel 10-Bit SPI Interface IC
ADC0804LCN PDIP-20 Sampling rate is 9.708KSPS Compatible with 8080 microprocessor derivatives				
ADS1231IDR – 24-Bit 80SPS 1-Ch				
Category-5	23	IN4007	25	Maximum Recurrent Peak Reverse Voltage 1000V Maximum RMS Voltage 700V Maximum DC Blocking Voltage 1000V

Annexure-1

				<p>Average Forward Current: 1.0A                  Peak Forward Surge Current: 30A                  Maximum Instantaneous Forward Voltage: 1.0V                  Maximum DC Reverse Current At Rated DC Blocking Voltage: 5.0µA @ 25°C                  Typical Junction Capacitance: 15pF                  Typical Reverse Recovery Time: 2.0us                  Mounting Type: Through Hole                  Operating Temperature: -55°C ~ 150°C</p>
	24	Zener diode	10	BZV55C3V3 3.3V 500mW Voltage Regulator Zener Diode
			10	9.1V Zener 1N4739A 1W
			10	BZV55C15 15V Zener Diode 500mW 5% Tolerance
			10	12V Zener Diode 500mW SOD-80 Zener Tolerance: 2%
			10	BZV55C24 24V Zener Diode 500mW 5% Tolerance SOD80 Package
Category-6	25	Buck controller TYPE 1	10	LM3409 Q1 LED Lighting Drivers PFET Buck controller
	26	BUCK CONVERTER	2	<p>100W 6A ADJUSTABLE OUTPUT BUCK CONVERTER VOLTAGE POWER STEP DOWN MODULE</p> <p>Step Down Technology: synchronous rectification non-isolated step-down module                  Input voltage: 10-90VDC                  Output voltage: 1.5-60VDC                  Output current: maximum 6A at lower output voltages. Make sure not to increase output power more than 100W and provide external heat decipation to work on maximum specs                  Maximum power: 100W (the maximum current is 6A at low voltage output. The maximum power is 100W at high voltage output)                  Working frequency: 180KHZ                  Conversion efficiency: 97.5% (typical value)                  Input anti-reverse connection: Yes                  Aluminum shell size: 70MM*38MM*31MM                  Weight: about 70g</p>

## Annexure-1

27	Buck controller TYPE 2	10	LM3409HV -Q1 P-FET
28	DLPA2005 Power Management	10	(30 mΩ Typical at 27°C) DLPA2005ERSLT
29	Power MOSFET Type 1	10	NTDV3055L104 MOSFET 60V 12A N-Channel
30	Power MOSFET Type 2	10	NTD3055L104 MOSFET 60V 12A N-Channel
31	OPamp  OPA549- HIREL	10	OPA549MKVC  Description IC OPAMP POWER 1 CIRC 11PWRPACK
32	OPamp  OPA549	10	OPA549 (S/SG3/T/TG3)  (KVC/KV)
33	OPamp  OPA541	10	OPA541 (AM/AP;BM/SM)
34	OPamp  OPA741	10	LM741CN/NOP  926-LM741CN/NOPB
35	555 Timer IC	20 each	LM555-MIL, NE555
36	LED Driver	10	BP3316DPSR Single-Stage APFC Offline
37	DC-DC Converter	10 each	TPS8268105SIPT Non-Isolated DC/DC Converters 1.6-A, HIGH-EFFICIEN MicroSiP Operating Temperature Range:- 40 C to + 85 C Input Voltage, Min: 2.5 V Input Voltage, Max: 5.5 V Current-Channel 1: 1.2 A <hr/> LM-317

## Annexure-1

				TI-7803, 7805, 7812, 7824, 7905,7912,
Category-7	38	Arduino Mega	2	Analog Input Pins 16 DC Current per I/O Pin 20 mA DC Current for 3.3V Pin 50 mA Flash Memory 256 KB of which 8 KB used by the bootloader SRAM 8 KB EEPROM 4 KB Clock Speed 16 MHz
	39	Card Reader	2	USB 3.0 transfer speeds of up to 312 MB/s for SD and microSD media  backwards compatible with UHS-I at speeds up to 170 MB/s  backwards compatible with UHS-I at speeds up to 170 MB/s  Compatible with USB 3.0 and 2.0 Ports
	40	RS 232 USB Converter	2	RS 232 USB  USB-232- bi-directional USB to RS232 adaptor
Category-8	41	Convex Lens	1	Magnifying Glass Diameter 50mm Magnification 3X 6X  Classic Lens Acrylic
	42	Screwdriver Set	1	Multi screwdriver Anti-rust 24 Magnetic Precision Screwdriver Set Aluminium Material Comes with 24 anti rust precision bits  Tip Type: Pentagon, Phillips, Slot, Spanner, Star, Torx, Tri-wing
	43	Anti static mat kit with wristband	1	Using an anti-static mat and wristband to prevent ESD
Category-9	44	Solder wire	2	Without flux core
	45	Solder flux	4	Resin based, anti corrosion

Annexure-1

46	Solder paste	1	With flux and anti corrosion and mounting type
47	Solder wire with core	1	With raisin based flux core
48	Desolder wire	4	Composed of copper threads braided together Wick Width: 2.5 mm Length: 1.5 Meter
49	Heatsink Assortment Kit Small Cooler Aluminum Heat Sink	1	Heatsink Kit IC LED MOSFET Transistor SCR Voltage Regulator  Pack of 100 pcs
50	Thermal paste Type 1	2	Conducting Type
51	Thermal paste Type 2	2	Non Conducting Type ARCTIC MX-6 ACTCP00084A
52	PCB Copper layer	1	2mm thick copper layer with one side Green PCB
53	Zero PCB	5	Green PCB, with pre determined hole
54	Etching Kit	1	Pcb, Etching Powder (Ferric Chloride)
55	IC mounting Base	10	8pin Base
		10	16 pin Base
		10	24 pin Base
56	Teflon Wires (24 gauge)	5	24 AWG Number of Strands 7 Single Strand Gauge 32 AWG Current Rating 6~15 Amp

## Annexure-1

57	BreadBoard	5	Self Adhesive ABS Solderless Dimensions 11 x 5 x 1cms
58	Jumper wires Kit	5	Wires 15 cm, M2M, M2F, F2F
59	Alligator clip with Cord	5	Cable length 40cm Stainless Steel
60	Switches	10	SPST ON-OFF Switch - 2Amp
61	Cutters Set	1	Cutting Capacity 100 mm Cutting Edge High-Frequency Heat Treatment Material Stainless Steel Cut wires from 0.8 to 1.2 mm
62	Tweezers Set	1	High-quality stainless steel Antistatic, Anti-magnetic and anti-acid 6 pcs Set
63	Wire peelers	1	Anti-Corrosive, Great Compressive Strength, Light Weight & 2 in 1 Function.  According to Thickness of Wire & Best Tool to Strip & Cut Insulation on Copper Wire.
64	3 Pin Push in Conductor	25	Rated voltage 400V Rated impulse voltage 4kv Dimensions 11 x 9 x 5 cms
65	Conductive Copper Tape	5	10mm single-sided copper tape is manufactured with 99.98% copper with adhesive back Temperature Up to 155 degrees F Dimensions 5 x 4 x 3cms
66	Glue Gun with sticks	2	150W with ten sticks 140-220°C adjustable temperature. with a safety electric fuse inside to prevent overheating. Bracket stand for safety and easy place
67	Storage box	5	PET with multiple slots

## Annexure-2

## LED Chipsets Specification as per CSIO.

	Sr. No.	Item	Quantity (At Least)	CSIO Specifications
Category-1	1	Green LED-1	10	SFT-20-CG-F35-MPB (2C/2E/2D)
	2	Green LED-2	10	SFT-20-CG-F35-MPC (2C/2E/2D)
	3	Green LED-3	5	PT-120-G-L11-MPN (5N/5P/5Q)
	4	Green LED-4	10	LE CG P0AQ (SR/SS/ST/SU) Q65113A0546
	5	Green LED-5	10	KP CSLPM1.F1-7P5Q-A (7P/8P/5Q) Q65111A9762
	6	LED RGB	10-each	White LED, RGB LED, 1 watt 3 v, 1 A
Category-2	7	UV LED	10	LZ4-04UVH0  Operating Temperature:-30 °C 100 °C  Junction Temperature: 115 °C  Forward Current: 900 mA