

# **COLLEGE OF ENGINEERING KIDANGOOR**

Tender No: CEK/D-1495/2019

Date: 25.09.2019

## **TENDER FORM**

### **For Equipments in Electronics and Communication Department at College of Engineering Kidangoor.**

Containing general conditions of contract, agreement to be executed in stamp paper worth Rs.200/-(Annexure – 1), format for tender submission in the letter head of the supplier with seal (Annexure -2) and schedule for the supply of items (Annexure-3)

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Name of Tenderer :

Address :

Signature of Tenderer :

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Last date and time for the receipt of tender : 09.10.19 12 noon

Date of opening and time : 10.10.19 3.00PM

## GENERAL CONDITIONS OF CONTRACT

### 1. Introduction

2. The terms and conditions given below shall form a part of the accompanying detailed technical specifications. The contract to be entered into shall be governed by these conditions and amendments thereto, if any.

### 3. Definitions

- a. **College:** Means (“College of Engineering Kidangoor, Kidangoor (S) P O. Kottayam”) which shall include the Principal of the College, duly authorized to act and sign on behalf of the college.
- b. **Principal:** Means the Principal of the College of Engineering Kidangoor. All letters & other communications sent to the College in connection with the contract shall be addressed to the Principal.
- c. **Tenderer/Supplier/Contractor:** Means the person or firm who is submitting the proposal/ tender.

### 4. Site: College of Engineering Kidangoor

### 5. Scope of Work

6. Supply of Equipments in **Electronics and Communication Engineering Department at College of Engineering Kidangoor** (details attached in Annexure 3) at College of Engineering Kidangoor.

### 7. Tender form

- a. Tender should be submitted through post or courier in the prescribed form (**Annexure 2**) in sealed covers super scribing against **Purchase of Lab Equipments to Electronics and Communication Engineering Department at College of Engineering Kidangoor** tender notification No. **CEK/D-1495/2019** so as to reach the PRINCIPAL, COLLEGE OF ENGINEERING KIDANGOOR on or before the last date & time as indicated in the tender notice. Tenders can be obtained on payment of price fixed in the case. No tender received after the due date and time will be accepted on any reason. The cost of tender forms once paid will not be refunded.
- b. The tender should be submitted in Original. All the pages in the tender shall be fully signed by an authorized signatory of the company/firm making the tender and stamped with company/firm seal. Relevant authority of the signatories should be attached with the tender.

- c. Tenders without the agreement as per Annexure 2 in stamped paper will be rejected outright. But in deserving cases where agreement has not been received, the Purchasing Officer may exercise his discretion and call upon such tenderer to execute the agreement within a period of ten days from the date of issue of such intimation if the Purchasing Officer is satisfied that the omission to forward the agreement along with the tender was due to cause beyond the control of the tenderer and was not due to any negligence on his part. Agreement received from a tenderer after the above time limit will not be considered.
- d. The quoted rate shall be valid for minimum 2 months from the date of tender opening.
- e. The tenderer shall clearly specify whether the articles offered bear Indian Standards Institution Certification Mark or not. In such cases they shall produce copies of certification mark along with their tender in support of it.
- f. Tenderers shall clearly specify whether the goods are offered from indigenous sources, from imported stocks in India or from foreign sources to be imported under a licence. The Principal, College Of Engineering Kidangoor reserves the right to reject offers for import of goods if the import take control policy in force at the time of award of the contract prohibits or restricts such imports.

#### **8. Earnest Money Deposit (EMD)**

- a. The tender should be accompanied by an EMD for an amount 3,515/- in the form of DD pledged in favour of the Principal, College of Engineering Kidangoor.
- b. The tenders not accompanied by the requisite EMD will not be considered. The EMD of unsuccessful tenderers will be returned as soon as the formalities are completed. EMD of the successful tenderer will be adjusted against the Security Deposit. No interest will be payable on the EMD.
- c. If the successful tenderer fails to give Security Deposit within one week after the date of the supply order or within a reasonable time as agreed by the College, his EMD will be forfeited. The EMD submitted by tenderers are liable to be forfeited in case the tenderer withdraws his tender or enhances the prices during the validity period.
- d.

#### **9. Acceptance**

The authority for the acceptance of the tender rests exclusively with the Principal. The Principal does not undertake to accept the lowest or any particular tender or to assign any reason for the rejection of any tender. Communication of acceptance of the tender normally constitutes a concluded contract

#### **10. Security Deposit**

The successful tenderer shall, within a week from the date of intimation of the acceptance of his/their tender, submit a security deposit for an amount equivalent to 5 % of the value of the contract for the faithful performance of the contract and for guaranteeing the performance of the equipment in the form of **Demand Draft** in favour of PRINCIPAL College of Engineering Kidangoor. This amount will be returned after the expiry of guarantee period / after the expiration of the contract. If the successful tenderer fails to deposit the security deposit and execute the agreement, the earnest money deposited by him will be forfeited to the Principal and the contract arranged elsewhere at the defaulter's risk and any loss incurred by the Principal on account of the purchase will be recovered from the defaulter who will, however not be entitled to any gain accruing thereby.

But in the event of any dispute arising between the principal or Institutions thereunder and the contractor, the Principal shall be entitled to deduct out of the deposits or the balance thereof until such dispute is determined, the amount of such damages, costs, charges and expenses as may be claimed. The same may also be deducted from any other sum which may be due at any time from Principal to the contractor. In all cases where there are guarantee for the goods supplied the security deposit will be released only after the expiry of the guarantee period.

## **11. Agreement**

The successful tenderer shall, after depositing the SD, execute an agreement with the Principal in stamp paper worth Rs 200/- for the proper fulfillment of the contract as per the proforma attached with work order /supply order. The accepted tender with all the enclosed schedules, copy of tender notice, conditions of contract and technical specifications, letter of award shall form part of this agreement. The cost of all stamp papers for executing the agreement and legal expenses incident thereto shall be borne by the successful bidder.

The contractor shall not assign/sublet to any person or persons the execution of the supply any part thereof without the consent of the College/CAPE who shall have absolute power to refuse such consent and or to cancel the contract at any time if not satisfied with the manner in which contract is being executed and no allowance or compensation shall be made to the supplier or the sub-supplier upon such rescission. provided always that if such consent be given at any time, the contractor shall not be relieved from any obligation, duty or responsibility under this contract.

12. In case the tenderer/supplier fails to supply any of the items ordered within the time provided for delivery the supplier commits any breach of the contract, it shall be lawful to arrange for the Purchase of the said items from else where or to cancel the contract by an order in writing under the hand of the Purchasing Officer put an end to this contract and in case the Principal shall have incurred, sustained or been put to any costs, damages or expenses by reason of such purchase or by reason of this contract having been so put an end to or in case any difference in price, compensation, loss, costs, damages, expenses or other moneys shall then or any time during the continuance of this contract be payable by the supplier to the Principal under and by virtue of this contract, it shall be lawful for the Principal from and out of any moneys for the time being payable or owing to the supplier from the Principal under or by virtue of this contract or otherwise, to pay and reimburse to the Principal all such costs, damages and expenses they may have sustained, incurred or been put to by reason of the purchase made elsewhere or by reason of this contract having been so put an end to as aforesaid and also all such difference in price, compensation, loss, cost, damages, expenses and other moneys as shall for the time being be payable by the supplier aforesaid.
13. No representation of enhancement of rates once accepted will be considered. In the case of imported goods, when the price accepted is the ex-site price quoted by the tenderer, the benefit of any reduction in the c.i.f. price should accrue to the Institution thereunder.
14. The College reserves the right to cancel the supply order in part or in full by giving one week advance notice by registered post if the supplier fails to comply with any of the terms of the order, the supplier becomes bankrupt or goes into liquidation of the creditor, any receiver is

appointed for the property owned by the supplier .All expenses and damages caused to the Principal by any breach of contract by the contractor shall be paid by the contractor to the Principal and may be recovered from him in any manner it deems fit.

15. Telegraphic tenders will not be considered .

16. Every notice hereby required or authorize to be given may be either given to the supplier personally or left at his residence or last known place of abode or business, or may be handed over to his agent personally ,or may be addressed and posted shall be deemed to have been served on the contractor on the date on which, in the ordinary course of post , a letter so addressed and posted would reach his place of abode or business.

17. Any attempt on the part of the tenderers or their agents to influence the officers concerned in their favour by personal canvassing will disqualify the tenderers.

18. Tenderers should be prepared to accept orders subject to the penalty clause for forfeiture of security in the event of default in supplies or failure to supply within the stipulated period.

19. Samples should be forwarded if called for and unapproved samples got back by the tenderers at their own cost . Samples sent by V.P Post or ‘freight to pay’ will not be accepted. The approved samples may or may not be returned at the discretion of the undersigned. Samples sent by post, or railway or plane should be so despatched so as to reach the Purchasing Officer not later than the date on which the tenders are due. In the case of samples sent by railway the receipt should be sent separately and not along with the tender since the tender will be opened only on the appointed day and damage will have to be paid if the railway parcels are not cleared in time. The Principal will not be responsible if any sample is found missing at any time due to the non-observance of the provisions of the clause. Tenderers whose samples are received late will not be considered. Samples should be forwarded under separate cover duly listed and the corresponding number of the item in the tender schedule should also be noted in the list of samples , if called for , of the materials tendered for are forwarded.

20. The prices quoted should be inclusive of all taxes , duties cesses , etc , which are or may become payable by the supplier under existing or future law or rules of the country of origin of supply or delivery during the course of execution of the contract and loading ,unloading and transportation charges.

21. The tenderer will invariably furnish the following certificates with their bills for payments :-  
“Certified that the goods on which Sales-tax has been charged have not been exempted under the Central Sales-tax Act or the state Sales-tax Act or the Rules made thereunder and the charges on account of Sales-tax on these goods are correct under the provisions of the relevant Act or the rules made there under. Certified further that we (or our Branch or Agent).

(Address) are registered as dealers in the State of .....

.....  
Under Registration No.....for purpose of Sales-tax”.

22. Special conditions, if any, of the tenderers attached with the tender will not be applicable to the contract unless they are expressly accepted in writing by the purchaser.

23. (This applies only to the case of supply contracts where works such as erection and construction have also to be done. This may be scored out when not applicable). In the event of any question or dispute arising under these conditions or any special conditions of this contract or in connection with this contract the same shall be referred to the award of an arbitrator to be nominated by the Purchasing Officer and an arbitrator to be nominated by the supplier, or in case of the said arbitrators not agreeing them to the award of an umpire to be appointed by the arbitrators in writing before proceeding on the reference and the decision

of the arbitration or in the event of their not agreeing of the umpire appointed by them, shall be final and conclusive and the provision of the Indian Aabitation Act,1940 and of the rules thereunder and any statutory modifications threof shall be deemed to apply to and be incorporated in this contract. Upon every and any such reference, the assessment of the costs incidental to their reference and award respectively shall be in the discretion of the arbitrators or in the event of their not agreeing of the umpire appointed by them . The venue of arbitration shall be the place from which the acceptance of tender is issued or such other place as the purchaser at his entire discretion may determine.

#### **24. Procurement/installation**

Period of delivery: within 30 days from the date of supply order

Place of delivery: College of Engineering Kidangoor

Installation required (Yes/No): Yes

Demo required (Yes/No): Yes

Equipment manual (Yes/No): Yes

#### **25. Guarantee**

The contractor is bound to rectify the defects which may occur within **one year** after the date of installation of equipment.

#### **26. Dispute**

All disputes regarding this tender shall be settled by a process of mutual negotiation.

#### **27. Payment**

Payments will be done only after the supplies are actually verified and taken to stock and obtaining necessary payment sanction from head Office in case . The supplier has to produce stamped invoices in triplicate .

#### **28. Acceptance of Terms & Conditions**

The supplier must confirm their acceptance of the terms and conditions mentioned herein above.

**Annexure 1**  
**Agreement in stamp paper worth Rs 200/-**

ARTICLES OF AGREEMENT executed on this the ..... day of ..... Two thousand and nineteen ..... BETWEEN the PRINCIPAL COLLEGE OF ENGINEERING KIDANGOOR (hereinafter referred to as “the Principal”) of the one part and Shri.....

..... (H.E Name and address of the tenderer) hereinafter referred to as “the bounden” of the other part.

WHEREAS in response to the notification No..... dated ..... the bounden has submitted to the Principal a tender for the supply..... specified therein subject to the terms and conditions contained in the said tender.

Whereas the bounden has also deposited with the Principal a sum of `Rs ..... as earnest money for execution of an agreement undertaking the due fulfillment of the contract in case his tender is accepted by the Principal, CE Kidangoor.

NOW THESE PRESENTS WITNESS and it is hereby mutually agreed as follows :-

1. In case the tender submitted by the bounden is accepted by the Principal and Contract for ..... is awarded to the bounden, the bounden shall within ..... days of acceptance of his tender execute an agreement with the Principal incorporating all the terms and conditions under which the Principal accepts his tender.
2. In case, the bounden fails to execute the agreement as aforesaid incorporating the terms and conditions governing the contract, the purchaser shall have the power and authority to recover from the bounden any loss or damage caused to College of Engineering Kidangoor by such breach as may be determined by the purchaser by appropriating the earnest money deposited by the bounden and if the earnest money is found to be inadequate the deficit amount may be recovered from the bounden and his properties movable and immovable in the manner hereinafter contained.
3. All sums found due to the Principal under or by virtue of this agreement shall be recoverable from the bounden and his properties movable and immovable under the provision of the Revenue Recovery Act for the time being in force as though such sums are arrears of land revenue and in such other manner as the Principal may deem fit.

In witness whereof Shri..... (H.E name and designation) for and on behalf of the College of Engineering Kidangoor and Shri..... the bounden have here into set their hands the day and year shown against their representative signatures.

Signed by Shri..... (Date).....

In the presence of witnesses

1. ....
2. ....

Signed by Shri..... (Date) .....

In the presence of witnesses.

1. ....
- 2.....

**Annexure 2**  
**FORMAT FOR QUOTATION SUBMISSION**  
(In letterhead of the supplier with seal)

Sl. No.	Item description	Item Specification	Quantity	Unit rate (Rs.)	GST (Rs)		Total Price including GST (Rs)
					SGST	CGST	
<b>Total Cost</b>							

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_ (Amount in figures) (Rupees \_\_\_\_\_ amount in words) within the period specified in the Invitation for tender.

We confirm that the normal commercial warranty/ guarantee of \_\_\_\_\_ months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No: \_\_\_\_\_





		<p>1:2004, EN61010-1:2001, IEC61010-1:2001  Power Source Voltage : 100 to 240V (+/- 10%), 50/60 Hz.  Power Consumption : less than 32Watts.  Weight : Less than 2Kg  Warranty : 5 Years standard  <u>Specification of probe</u>  10X Attenuation, 100 MHz Bandwidth, 1.3 m Length, Safety - UL61010-031; 2007, CAN/CSA C22.2 No. 61010-031-07, IEC61010-031; IEC 61010-031/A1:2008  Rise time &lt;3.5 ns (typical), Compensation range - 15 pF to 25 pF  Input resistance 10 MΩ ±1.5%, Maximum input voltage 300 VRMS  CAT II  <u>Accessories to be supplied</u>  along with the instrument : One 10X Passive Probe per channel, Installation and Safety Manual, Documentation CD, Applicable Desktop Software &amp; PC Courseware software, Calibration Certificates traceable to NIST/NIM, Power Cord, and a five-year warranty statement.  <u>A line by line compliance sheet of above specs may be attached along with its indicative page nos in data sheet/support documents.</u></p>		
2	8051 Microcontroller Trainer Kit	<p>a. PROCESSOR:8051 / 89C51/89x51 Microcontroller, 12MHz Clock speed  MEMORY: Program Memory RAM - 32KB, Data Memory RAM - 32KB, Program Memory EPROM - 32KB  PERIPHERALS  USB KEYBOARD AND DISPLAY:- 16x2 LCD Display  * 105 Keys PC keyboard has to be provided along with reset and interrupt keys (RRE Key) USB BASED  PARALLEL I/O BUS EXPANSION  * One no. of 8255 connections to be terminated in one 26-pin FRC header (24 I/O lines)  * One VXT-Bus (50 pin FRC connector) for interfacing VBMB series of experiment board and bus expansion  * Microcontroller port lines to be terminated with one 40-pin FRC header DIGITAL I/O  * On board 8-digital inputs can be given through 8-Way dip switch  * On board 8-digit outputs can be visible through SMD LEDs  * The port lines P1 used as input (switch) or output LED (selectable hardware)  SPECIAL FEATURES:  * Software single stepping of user programming by instruction for software debugging (at same time user interrupt is not accessed)  * Housed in a sleek plastic cabinet.  SERIAL PORT: On chip RS232 Compatible Serial Interface terminated in a 9 Pin 'D' Male Connector/USB to serial converter  BUILT-IN POWER SUPPLY (MULTI OUTPUT) :Input : 230V AC Output: +5V/3A, +12V/0.5A  BATTERY BACKUP: 1 No. of 3V lithium battery  DOCUMENTATION SUPPORT: Manual Hard copy  Warranty: Desired for Maximum Warranty  <u>A line by line compliance sheet of above specs may be attached along with its indicative page nos in data sheet/support documents.</u></p>	5	A hard copy of manual to be supplied with equipment. Bill settlement will be done only after the training provided on the item supplied.

3	Function Generator	<p><b><u>FUNCTION - PULSE GENERATORS 0.3-3MHZ WITH FREQUENCY COUNTER.</u></b></p> <p>Technical Specifications;- color LCD display for digital readout ,Operating modes: Sine ( 1 Hz-10 MHz), Square, Triangle (0.3Hz-3MHz), Ramp, Pulse, TTL ( 0.3MHz-2MHz)Microcontroller based, Sine Wave Distortion 1 % (typical), Square Wave Rise Time &amp; Fall Time <math>\leq 50</math> ns , Triangle Nonlinearity<math>\leq 1\%</math> (typical), Output Impedance <math>50\Omega</math> ,Output Voltage<math>20 V_{pp}</math> &amp; <math>\pm 5V</math> DC offset, Attenuation 20 or 40 dB(fixed) &amp; 20 dB (variable) ,Level FlatnessUpto 300 KHz : <math>\pm 0.2</math> dB , Upto 3 MHz : <math>\pm 0.5</math> dB, DC Offset <math>\pm 5</math> V adjustable ,External Modulation FM, Modulation Freq. Range DC to 20 KHz, Modulation Input - <math>2 V_{pp}</math> max , Frequency Counter Range-DC - 40 MHz, Input Impedence-<math>1 M\Omega</math>. LCD screen size 1.77".</p> <p>Warranty: Desired for Maximum Warranty</p> <p><u>A line by line compliance sheet of above specs may be attached along with its indicative page nos in data sheet/support documents.</u></p>	5	A hard copy of manual to be supplied with equipment . Bill settlement will be done only after the training provided on the item supplied.
4	Arduino Development Board	<p>Microcontroller ATmega328P          Operating Voltage 5V          Input Voltage (recommended) 7-12V          Current per I/O Pin 20 mA          Flash Memory 32 KB (ATmega328P) of which 0.5 KB used by boot loader          SRAM 2 KB (ATmega328P)          Clock Speed 16 MHz          Warranty: Desired for Maximum Warranty</p> <p><u>A line by line compliance sheet of above specs may be attached along with its indicative page nos in data sheet/support documents.</u></p>	5	A hard copy of manual to be supplied with equipment . Bill settlement will be done only after the training provided on the item supplied.
5	Antenna Trainer Kit	<p><b><u>ANTENNA TRAINER KIT</u></b></p> <p>Scope of Learning          Polar plots &amp; polarization , Wave modulation &amp; demodulation , Antenna gain, Antenna beam width study, Element current, Front-back ratio study, Antenna matching , Antenna radiation with distance.</p> <p>Technical Specifications          Waveforms : Sine , RF Generator : 750 MHz approximately (output adjustable) , Tone Generator : 1 KHz approximately (output adjustable) , Directional Coupler : Forward &amp; Reverse (selectable), Matching Stub :          Slider type , Antenna Rotation : 0-360 deg. Resolution 1 deg ,          Receiving Antenna : Folded dipole with reflector          Detector Display : Level adjustable meter, Interconnections : 2 mm Banana sockets</p> <p>Required Accessories          I. Antennas : - (1. Simple Dipole 1/2 : 1 no. , 2. Yagi-UDA Folded Dipole (3E) : 1 no., 3. Yagi-UDA Folded Dipole (5E) : 1 no., 4. Yagi-UDA Simple Dipole (5E) : 1 no., 5. Yagi-UDA Simple Dipole</p>	1	A hard copy of manual to be supplied with equipment . Bill settlement will be done only after the training provided on the item supplied.

		<p>(7E) : 1 no.,6. Hertz Antenna : 1 no.,  7. Loop Antenna : 1 no., 8. Log Periodic Antenna : 1 no., 9. 1/2  Phase Array : 1 no., 10. Detector Antenna : 1 no.,  11. Helix Antenna : 1 no.)  II. Current Probe : 1 no. - III. Transmitting Mast : 1 no. - IV. RF  Detector : 1 no. - V. Receiving Mast : 1 no.  VI. Accessories Kit : (1. BNC –Tee : 1 no., 2. BNC - BNC Adapter  (M) : 1 no., 3. BNC - BNC Adapter (F) : 1 no.,  4. BNC (M) - BNC (F) Adapter (L-type) : 1 no , 5. BNC – BNC  Cable 25” : 2 nos., 6. BNC – BNC Cable 18” : 1 no.,  7. Aligner 932 : 1 no.)  VII. Polar Graphs (dBmA) : 25 nos. - VIII. Polar Graphs (for  normalised reading) : 25 nos. –  IX. Antenna Fabrication Kit( 1. Two PCB’s : 1 no., 2. 14 SWG  wire roll 20”)  List of Accessories (I. Detector Antenna : 1 no., II. Current Probe :  1 no.,III. Transmitting Mast : 1 no.,  IV. Receiving Mast : 1 no.,V. RF Detector : 1 no.)  VI. Accessories Kit : (1. BNC –Tee : 1 no., 2. BNC - BNC Adapter  (M) : 1 no., 3. BNC - BNC Adapter (F) : 1 no.,  4. BNC (M) - BNC (F)Adapter (L-type) : 1 no, 5. BNC – BNC  Cable 25” : 2 nos.,6. BNC – BNC Cable 18” : 1 no.,  7. Aligner 932 : 1 no.) .VII. Polar Graphs (dBmA) : 25 nos.,VIII.  Polar Graphs (for normalised reading) : 25 nos.  IX. Antenna Fabrication Kit (1. Two PCB’s : 1 no., 2. 14 SWG wire  roll 20”) ,X. Mains Cord : 1 no.,  XI. +7.5 - 9V DC Adaptor(500mA) : 1 no.</p> <p>Warranty: Desired for Maximum Warranty</p> <p><u>A line by line compliance sheet of above specs may be attached  along with its indicative page nos in data sheet/support documents.</u></p>		
6	Fiber Optics Trainer Kit and Fiber Optic Power meter	<p><b><u>FIBER OPTIC TRAINER KIT FOR GLASS AND PLASTIC FIBER (LED &amp;LASER SOURCE AND ITS DETECTOR IN A SINGLE KIT)</u></b></p> <p><b>FEATURES:</b></p> <ul style="list-style-type: none"> <li>• Supports Plastic Fiber - Multimode and Glass Fiber - Single mode /multimode experimental setups.</li> <li>• Allows finding of IV and IP characteristics of Laser diode and IV characteristics of LED.</li> <li>• Allows finding of laser threshold.</li> <li>• Soft start for Laser prevents damage due to spikes in power supply.</li> <li>• Configurable source modulation by analog and digital signals.</li> <li>• Protected taps to measure forward voltage and forward current through LED, Laser sources and DETECTOR.</li> <li>• On board potentiometer allows fine variation of forward current of the source, hence of the output optical power.</li> <li>• Supports detector characterization.</li> <li>• 660 nm wave length is used for plastic fiber and 1310nm wave length is used for glass fiber transmission.</li> <li>• ST type connector interface for glass fiber link</li> <li>• “Connector-less” style package for plastic fiber link</li> <li>• Jigs for attenuation, coupling loss and numerical aperture</li> </ul>	1	A hard copy of manual to be supplied with equipment . Bill settlement will be done only after the training provided on the item supplied.

*Detailed specifications*

Source 1:- Type: Laser, Central wavelength: 1310nm,Spectral width: 1nm,Output power: 1.5Mw,Threshold Current: 15mA Max, Forward Current: 85 mA Max. , Feedback: Built-in InGaAs monitor detector, Receptacle housing: SC.

Source 2:- Type: Visible LED ,Central wavelength: 660nm,Spectral width: 25nm, Output power : 200  $\mu$ W @ If = 10 mA. ,Forward Current: 50 mA Max., Receptacle housing : “Connector-less” style package.

Detector 1:- Type: InGaAs PIN photo diode, Spectral Bandwidth : 1250nm ~ 1600nm, Responsivity: 0.9 A/W @ 10  $\mu$ W of 1310 nm, Bandwidth: 1.5 GHz,Return loss: 14 Db ,Reverse voltage, VR: 30V (Maximum), Reverse current, IR : 500  $\mu$ A Max.

Detector 2:- Type: Silicon PIN photo transistor, Spectral Bandwidth: 400 nm ~ 1100nm, Max. Photosensitivity Lambda: 850 nm. , Responsivity: 0.8 mA/ 10 $\mu$ W VCE= 5 V. , Rise and fall times: 20 ms.

Fiber cable :- Type: Glass fiber single & multimode, Core diameter: 9 $\mu$ m and 62.5, Clad diameter: 125 $\mu$ m, Primary coating diameter: 250 $\mu$ m , Total outer diameter: 2.2mm , Number of fibers: 02, Length of fiber: 01 meter each, Type : Plastic optical cable, step index, multimode, Core refractive index-n1 : 1.492 ,Clad refractive index-n2 : 1.406,Numerical aperture: 0.50 , Acceptance angle: 60 $^{\circ}$ ,Fiber diameter : 000microns, Outer diameter: 2.2mm.

Warranty: Desired for Maximum Warranty

2. FIBER OPTIC POWER METER.

**SPECIFICATIONS**

It should have Universal connector interface FC/SC/ST, Large LCD display and optional back light,

Wavelength (nm) : 600 ~ 1650,Detector : InGaAs ,Optical connector : FC /SC /ST Universal 2.5mm adaptor, Measurement range (dBm) : -70 ~ +10,Uncertainty :  $\pm$ 5%,Standard wavelength (nm) : 850/ 980/ 1310/ 1490 / 1550/ 1625 ,Resolution (dB) : 0.01 ,Power supply : 9V battery / adapter ,Working time (h) : 130 ,Operating temperature( $^{\circ}$ C) : -10 ~ +50 ,Storage temperature ( $^{\circ}$ C) :-20 ~ +70 ,Automatic shutdown (min) : 10 .

Warranty: Desired for Maximum Warranty

A line by line compliance sheet of above specs may be attached along with its indicative page nos in data sheet/support documents.





