

Prof. V. JAGADEESH KUMAR

HEAD

CENTRAL ELECTRONICS CENTRE

Email : vjk@iitm.ac.in

Telephone : (044) 2257 4946/4947/4406; FAX: (044) 2257 4986



प्रोफ. वी. जगदीश कुमार

अध्यक्ष

केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र

ई-मेल : vjk@iitm.ac.in

दूरभाष : (044) 2257 4946 / 4947 / 4406; फैक्स : (044) 2257 4986

Ref. No.

FORM FOR INVITING QUOTATIONS

Date: 19.01.2015

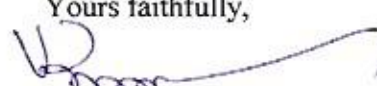
DUE DATE: 05.02.2015

CEC	14-15	007	DEIT	VJAG	TOVEN	1
-----	-------	-----	------	------	-------	---

Dear Sirs,

1. Quotations are invited in duplicate for the Temperature Oven (specification attached).
2. The Quotations are to be in two bid system as : Technical bid and Commercial bid. Two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in a separate envelop must enclosed in the one bigger envelop duly sealed and superscribed with reference number and due date and, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. A blank price quote (identical to the Commercial bid with numbers removed) should be enclosed with the Technical Part.
3. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS&D Rate contract No. 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 (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. Local Firms: Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
7. Firms Outside Madras : Quotations should be for CIF/F.O.R. Madras. If CIF/F.O.R. consignor station, freight charges 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, no 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 concession. Sales Tax Certificate 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.

Yours faithfully,



Head of the Dept/Centre

प्रोफ. वी. जगदीश कुमार
Prof. V. JAGADEESH KUMAR
अध्यक्ष/HEAD



केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र
Central Electronics Centre
आई आई टी मद्रास, चेन्ने
CHENNAI 600 036

Technical Specification – Temperature Oven made of Stainless steel with Sight glass door and Forced Air Circulation

1. Chamber Design:
 - (a) Volume -- ≥ 225 liters
 - (b) Dimensions -- 500mm to 800 mm (width)
-- 400mm to 500mm (depth)
-- 600mm to 1000mm (height)
 - (c) Material -- Stainless steel grade 1.4301
(ASTM 304/X5CrNi18-10/SUS304/ASI304)
with all round deep drawn ribs to integrate the large area heating with ceramic metal sheet.
 - (d) Chamber Exterior -- External housing should be made of corrosion resistant textured stainless steel.
 - (e) Shelves -- 2
 - (f) lighting in the cabinet -- 40W
 - (g) Entry ports -- 2 ports in total
(20 to 23 mm LHS, 38 to 40 mm RHS)
 - (h) Net weight (kg) -- ≤ 90 kg

2. Test Parameter – Temperature
 - (a) Temperature range -- $+10^{\circ}\text{C}$ above ambient up to $+300^{\circ}\text{C}$
 - (b) Accuracy of the display: -- 0.1°C
 - (c) Setting accuracy -- 0.5°C
 - (d) Temperature Deviation -- $\leq \pm 0.25$ K @ 150°C (in time)
(acc. DIN 12880)
 - (e) Temperature Uniformity -- $\leq \pm 2.2$ K @ 150°C (in space)
(acc. DIN 12880)

3. Temperature Control and safety
 - (a) Electronic microprocessor temperature controller should be provided
 - (b) Two temperature sensors Pt100 Class A in 4-wire circuit for uninterrupted operation on failure of one Pt100 with warning indication
 - (c) Mechanical temperature limiter (TB) for permanent heating switch-off on exceeding the maximum permitted oven temperature by approx. 10°C should be provided
 - (d) Heating switch-off at a fixed margin of 10°C above set point on failure of electronic heating control should be provided
 - (e) Over temperature protection and under temperature alarm, with Pt100 incorporating fault diagnostics should be provided

4. Air Circulation
 - Fan speed adjustable in 10%-steps (or) 0-100%

5. Timer functions:

- Timer with residual running time with ramps (1 min. up to 999 h) for temperature and fan speed programmable through controller or programming via PC with free-of-charge software:
 - Repeat function (Loop: 1-99 times / endless)
6. Calibration Certificate
- Certificate should be provided for temperature
7. Power Supply
- 230 V ($\pm 10\%$), 50Hz
8. Guarantee / warranty :
- The complete supply must be guaranteed for free repair / replacement for 24 months from the date of installation, commissioning and acceptance by CEC, IITM.

cc Jindan

V. Jagadeesh

प्रोफ. वी. जगदीश कुमार
Prof. V. JAGADEESH KUMAR
HEAD
Electronics Centre
IITM, Gandhinagar, Pune
Phone: 020-25767000 Fax: 020-25767001



Prof. V. JAGADEESH KUMAR
HEAD
CENTRAL ELECTRONICS CENTRE
Email : vjk@iitm.ac.in
Telephone : (044) 2257 4946/4947/4406; FAX: (044) 2257 4986



प्रोफ. वी. जगदीश कुमार

अध्यक्ष

केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र

ई-मेल : vjk@iitm.ac.in

दूरभाष : (044) 2257 4946 / 4947 / 4948 / 4408 ; फैक्स : (044) 2257 4886

Ref. No.

FORM FOR INVITING QUOTATIONS

Date: 19.01.2015

DUE DATE: 05.02.2015

CEC	14-15	008	DEIT	VJAG	SIS	1
-----	-------	-----	------	------	-----	---

Dear Sirs,

1. Quotations are invited in duplicate for the Surge/ Impulse Simulator (specification attached).
2. The Quotations are to be in two bid system as : Technical bid and Commercial bid. Two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in a separate envelop must enclosed in the one bigger envelop duly sealed and superscribed with reference number and due date and, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. A blank price quote (identical to the Commercial bid with numbers removed) should be enclosed with the Technical Part.
3. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS&D Rate contract No. 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 (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. Local Firms: Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
7. Firms Outside Madras : Quotations should be for CIF/F.O.R. Madras. If CIF/F.O.R. consignor station, freight charges 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, no 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 concession. Sales Tax Certificate 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.

Yours faithfully,

Head of the Dept/Centre

प्रोफ. वी. जगदीश कुमार
Prof. V. JAGADEESH KUMAR
अध्यक्ष/HEAD



केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र
Central Electronics Centre

Technical Specification – Surge/Impulse Simulator with CDN for Telecom lines and Interconnection lines

1. Surge generating unit:

Parameter	Specification			
1.2/50 μ s-8/20 μ s Combination waveform	Voltage Surge	Output Voltage	0.5- 6.0 kV \pm 10%	
		Front Time	1.2 μ s \pm 30%	
		Duration	50 μ s \pm 20%	
	Current Surge	Output Current	250-3000A \pm 10%	
		Front Time	8 μ s \pm 20%	
		Duration	20 μ s \pm 20%	
Minimum charge time		10s		
Output impedance		2 Ω \pm 10%		
0.5 μ s-100kHz Ring Wave	Voltage Surge	Output Voltage	0.5- 6.0 kV \pm 10%	
		Rise Time	0.5 μ s \pm 0.15 μ s	
		Frequency	100kHz \pm 20kHz	
	Current Surge	2 nd peak voltage	40-100% of 1 st peak	
		3 rd peak voltage	40-80% of 2 nd peak	
		4 th peak voltage	40-80% of 3 rd peak	
	Minimum charge time		5 Sec	
Output impedance		12 Ω \pm 3 Ω at 12 Ω selection 30 Ω \pm 8 Ω at 30 Ω selection		
Coupling Network		Line – Line : 18 μ F Line – PE : 10 Ω +9 μ F Line – PE (L+N+PE) : 9 μ F/9 μ F		
Decoupling Coil		1.5mH		
AC EUT Power capacity		Single phase AC 240V, 16A Max, 50Hz		
DC EUT Power capacity		DC 125V, 16A Max		
Phase Angle Control		0 - 360 \square \pm 10 \square , Based on set / return angle		

2. Surge generating unit for external CDN:

Parameter	Specification		
10/700 μ s-5/320 μ s Combination waveform	Voltage Surge	Output Voltage	0.5- 6.0 kV \pm 10%
		Front Time	10 μ s \pm 30%
		Duration	700 μ s \pm 20%
	Current Surge	Output Current	12.5-150A \pm 10%
		Front Time	5 μ s \pm 20%
		Duration	320 μ s \pm 20%
Minimum charge time		15s	
Output impedance		40 Ω \pm 10%	

3. CDN for Telecom lines:

Parameter	Specification
Surge Input Voltage	6.6kV 10/700 μ s – 5/320 μ s combination waveform
EUT Power Capacity	DC 50V, 100mA
No. of line	4 line
Decoupling coil	20mH per phase
Matching resistor	40 Ω (in Combination waveform) 25 Ω (in 10/700 μ s waveform)

4. CDN for Interconnection lines:

Parameter	Specification
Surge Input Voltage	500V - 6600V
EUT Power Capacity	DC 50V, 1A
No. of line	4 line
Decoupling coil	20mH per phase
Matching resistor	40 Ω \pm 10%

5. Other Specification

- Conforming to IEC61000-4-5 Ed.2 standard
- Ring wave confirming to ANSI/IEEE C62.45
- Voltage monitor through BNC output, 1/1000 \pm 10%
- Current monitor through BNC output, 1mV/A \pm 10%
- Remote control operation from PC through USB besides stand alone operation
- Interlock built-in as the emergency stop function for safety

cc Jindal



प्रोफ. वी. जागदीश कुमार
Prof. V. JAGADEESH KUMAR
अध्यक्ष/HEAD



राष्ट्रीय प्रौद्योगिकी संस्थान
राजस्थान प्रौद्योगिकी संस्थान
जयपुर

Prof. V. JAGADEESH KUMAR
HEAD
CENTRAL ELECTRONICS CENTRE
Email : vjk@iitm.ac.in
Telephone : (044) 2257 4946/4947/4406; FAX: (044) 2257 4986



प्रेफ. वी. जगदीश कुमार
अध्यक्ष
केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र
ई-मेल : vjk@iitm.ac.in
दूरभाष : (044) 2257 4946 / 4947 / 4406 ; फैक्स : (044) 2257 4986

Ref. No. FORM FOR INVITING QUOTATIONS

Date: 19.01.2015

CEC | 14-15 | 009 | DEIT | VJAG | HIANY | 1

DUE DATE: 05.02.2015

Dear Sirs,

1. Quotations are invited in duplicate for the Hipot Analyzer AC Voltage (specification attached).
2. The Quotations are to be in two bid system as : Technical bid and Commercial bid. Two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in a separate envelop must enclosed in the one bigger envelop duly sealed and superscribed with reference number and due date and, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. A blank price quote (identical to the Commercial bid with numbers removed) should be enclosed with the Technical Part.
3. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS&D Rate contract No. 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 (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. Local Firms: Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
7. Firms Outside Madras : Quotations should be for CIF/F.O.R. Madras. If CIF/F.O.R. consignor station, freight charges 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, no 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 concession. Sales Tax Certificate 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.

Yours faithfully,


Head of the Dept/Centre

प्रेफ. वी. जगदीश कुमार
Prof. V. JAGADEESH KUMAR

अध्यक्ष/HEAD

केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र
Central Electronics Centre



Technical Specification – Hipot Analyzer AC Voltage

S.No:	Description	Specification
1	Withstanding Voltage	
	Output Voltage	AC : 0.05 ~ 10kV
	Load Regulation	± (1% of output + 10V), @Rated load
	Voltage Resolution	2V
	Cut-off Current	0.01~20mA
	Voltage Accuracy	± (1% of reading + 0.1% of full scale)
	Current Resolution	1 µA AC
	Current Accuracy	0.100mA~2.999mA range ±(1% of reading +0.3% of full range) 3.00mA~20.00mA range ±(1.5% of reading + 0.3% of full range)
	Output Frequency	50Hz
	Test Time	0.3 ~ 999 sec., continuous
	Ramp up Time	0.3 ~ 99.9 sec, Off
	Waveform	Sine wave
2	Flashover Detection	
	Setting Mode	Programmable setting
	Detection Current	AC : 20mA
3	Secure Protection Function	
	Ground Fault Interrupt	0.5mA ±0.25mA AC
	Fast Output Cut-Off	0.4ms after NG happen
	Fast DC Charge	< 0.2 sec.
	Floating Output to ground	<3mA, front output (should meet EN50191)
	Interlock	Protection interlock should be provided
4	GO/NG Judgment Window	
	Indication, Alarm	GO : Short sound, Green LED NG : Long sound, Red LED
5	Power Requirements	
	Supply Power	220V (AC ±10%), 50Hz

V. J.



HEAD
CENTRAL ELECTRICITY CENTRE
I.I.T.M.
CHENNAI - 600036.

Technical Specification – Hipot Analyzer DC Voltage

S.No:	Description	Specification
1	Withstanding Voltage	
	Output Voltage	DC : 0.05 ~ 10kV
	Load Regulation	± (1% of output + 10V), @Rated load
	Voltage Resolution	2V
	Cut-off Current	0.001~10mA
	Voltage Accuracy	± (1% of reading + 0.1% of full scale)
	Current Resolution	0.1 µA
	Current Accuracy	0.100mA~2.999mA range ±(1% of reading + 0.3% of full range) 3.00mA~20.00mA range ±(1.5% of reading + 0.3% of full range)
	Test Time	0.3 ~ 999 sec., continuous
	Ramp up Time	0.3 ~ 99.9 sec, Off
2	Insulation Resistance Test	
	Output Voltage	DC : 0.05 ~ 5kV
	Voltage Resolution	2V
	Voltage Accuracy	±(1% of reading + 0.5% of range)
	IR Range	0.1MΩ ~ 50GΩ
	Resistance Resolution	0.1MΩ
	Resistance Accuracy	1MΩ ~ 1GΩ range ± 3% of reading + 0.1% of full range 1GΩ ~ 10GΩ range ± 5% of reading + 1% of full range 10GΩ ~ 50GΩ range ± 10% of reading + 1% of full range
3	Flashover Detection	
	Setting Mode	Programmable setting
	Detection Current	DC : 10mA
	Minimum Pulse Width	40/20/10/4 µs
4	Secure Protection Function	
	Interlock	Protection interlock should be provided
5	GO/NG Judgment Window	
	Indication, Alarm	GO : Short sound, Green LED NG : Long sound, Red LED
6	Power Requirements	
	Supply Power	220V (AC ±10%), 50Hz

John

Prof. V. JAGADEESH KUMAR
HEAD
CENTRAL ELECTRONICS CENTRE
Email : vjk@iitm.ac.in
Telephone : (044) 2257 4946/4947/4406; FAX: (044) 2257 4986



प्रोफ. वी. जगदीश कुमार
अध्यक्ष
केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र
ई-मेल : vjk@iitm.ac.in
दूरभाष : (044) 2257 4946 / 4947 / 4948 / 4406 ; फैक्स : (044) 2257 4986

Ref. No. FORM FOR INVITING QUOTATIONS

Date: 19.01.2015

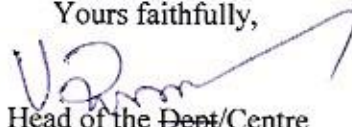
DUE DATE: 05.02.2015

CEC	14-15	010	DEIT	VJAG	ESANY	1
-----	-------	-----	------	------	-------	---

Dear Sirs,

1. Quotations are invited in duplicate for the Electrical Safety Analyzer (specification attached).
2. The Quotations are to be in two bid system as : Technical bid and Commercial bid. Two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in a separate envelop must enclosed in the one bigger envelop duly sealed and superscribed with reference number and due date and, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. A blank price quote (identical to the Commercial bid with numbers removed) should be enclosed with the Technical Part.
3. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS&D Rate contract No. 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 (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. Local Firms: Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
7. Firms Outside Madras : Quotations should be for CIF/F.O.R. Madras. If CIF/F.O.R. consignor station, freight charges 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, no 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 concession. Sales Tax Certificate 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.

Yours faithfully,


Head of the Dept/Centre

प्रोफ. वी. जगदीश कुमार
Prof. V. JAGADEESH KUMAR
अध्यक्ष/HEAD
केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र
Central Electronics Centre
आई आई टी मद्रास - ६०० ०३६



Technical Specification – Electrical Safety Analyzer

S.No:	Description	Specification
1	Mode	ACV/DCV/IR/GB/LC
2	Withstanding Voltage	
	Output Voltage	DC : 0.05 ~ 6kV , AC : 0.05 ~ 5kV
	Load Regulation	1% + 5V
	Voltage Resolution	2V
	Cut-off Current	DC :12mA , AC : 40mA
	Voltage Accuracy	1% + 5 counts
	Current Resolution	0.1 μ A DC, 1 μ A AC
	Current Accuracy	1% + 5 counts
	Output Frequency	50Hz
	Test Time	0.3 ~ 999 sec., continuous
	Ramp up Time	0.3 ~ 99.9 sec, Off
	Waveform	Sine wave
3	Insulation Resistance Test	
	Output Voltage	DC : 0.05 ~ 1kV
	Voltage Resolution	2V
	Voltage Accuracy	\pm (2% of reading + 0.5% of range)
	IR Range	0.1M Ω ~ 50G Ω
	Resistance Resolution	0.1M Ω
	Resistance Accuracy	5%
4	Ground Bond Test	
	Output Current AC	1 ~ 30A AC
	Current Accuracy	\pm (1% of reading + 0.2% of range)
	GR Range	10m Ω ~ 510m Ω
	Resistance Resolution	0.1m Ω
	Resistance Accuracy	\pm (1% of reading + 0.1% of full scale)
	Test Method	4 wires
5	Flashover Detection	
	Setting Mode	Programmable setting
	Detection Current	AC : 20mA, DC : 10mA
	Minimum Pulse Width	40/20/10/4 μ s
6	Secure Protection Function	
	Ground Fault Interrupt	0.5mA \pm 0.25mA AC
	Fast Output Cut-Off	0.4ms after NG happen
	Fast DC Charge	< 0.2 sec.
	Floating Output to ground	<3mA, front output (should meet EN50191)
	Interlock	Protection interlock should be provided
7	GO/NG Judgment Window	
	Indication, Alarm	GO : Short sound, Green LED NG : Long sound, Red LED

8	Leakage Current Test	
	Input Characteristic	DC-1MHz
	Input Impedance	1M Ω /20pF
	DUT Input Power Capacity	AC : 300V/10 A Max.
	Short Protection	10A/250V Fuse
	Current Range	0.1 ~ 590 μ A/ 500 ~ 6000 μ A
	Current Resolution	0.2 μ A/ 2 μ A
	Current Accuracy	2 % + 5 counts (DC - 5 kHz)
	Measurement Mode	Normal, reverse, single fault normal, single fault reverse
	LC HI-LO Limit	0 ~ 9.99mA, 1 μ A resolution
	Current HI-LO Limit	0 ~ 9.999A
	VA HI-LO Limit	0 ~ 2200VA
	VA Resolution	0.1VA
9	Power Requirements	
	Supply Power	220V (AC \pm 10%), 50Hz

Additional requirements

- Dummy load should be provided
- Should support testing of medical electronic products and instruments, appliances, information technology equipment products such as blenders, fan and other Small Appliances, Component, in accordance with UL, CSA, and IEC TUV and standards such as UL 950, IEC 601-1, UL 2601-1, UL 1563, UL 544, EN 60335, EN 60950, EN 61010, CSA C22.2 No. 1010.1, UL 3111 and UL 1950
- Should support electrical safety compliance testing on a variety of products and devices
- Should support transformer electrical safety testing
- Should support electric motor safety testing

CC Kumar

V. Jagadeesh Kumar
 प्रोफ. वी. जगदीश कुमार
 Prof. V. JAGADEESH KUMAR
 अध्यक्ष/HEAD
 केंद्रीय इलेक्ट्रॉनिक्स सेंटर
 Central Electronics Centre
 आई आई टी मद्रास ५०० ०७५
 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000

Prof. V. JAGADEESH KUMAR
HEAD
CENTRAL ELECTRONICS CENTRE
Email : vjk@iitm.ac.in
Telephone : (044) 2257 4946/4947/4406; FAX: (044) 2257 4986



प्रेफ. वी. जगदीश कुमार
अध्यक्ष
केन्द्रीय इलेक्ट्रॉनिक्स केन्द्र
ई-मेल : vjk@iitm.ac.in
दूरभाष : (044) 2257 4946 / 4947 / 4948 / 4406 : फैक्स : (044) 2257 4986

Ref. No.

FORM FOR INVITING QUOTATIONS

Date: 19.01.2015
DUE DATE: 05.02.2015

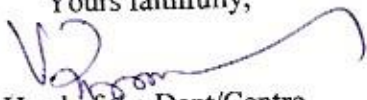
CEC	14-15	011	DEIT	VJAG	SURVEY METER	1
-----	-------	-----	------	------	--------------	---

To

Dear Sirs,

1. Quotations are invited in duplicate for the Ionizing Radiation Survey Meter (specification attached).
2. The Quotations are to be in two bid system as : Technical bid and Commercial bid. Two parts of the offer are to be clearly marked on the envelopes. The two parts of the offer in a separate envelop must enclosed in the one bigger envelop duly sealed and superscribed with reference number and due date and, should be addressed to the undersigned so as to reach him on or before the due date stipulated above. A blank price quote (identical to the Commercial bid with numbers removed) should be enclosed with the Technical Part.
3. The Quotations should be valid for sixty days from the due date and the period of delivery required should also be clearly indicated.
4. If the item is under DGS&D Rate contract No. 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 (Please note that we are not Direct Demanding Officers). If so please send copy of the RC.
5. Relevant literature pertaining to the items quoted with full specifications (and drawing, if any) should be sent along with the Quotations, wherever applicable. Samples if called for, should be submitted free of charges, and collected back at the supplier's expenses.
6. Local Firms: Quotations should be for free delivery to this Institute. If Quotations for Ex-Godown delivery charges should be indicated separately.
7. Firms Outside Madras : Quotations should be for CIF/F.O.R. Madras. If CIF/F.O.R. consignor station, freight charges 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, no 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 concession. Sales Tax Certificate 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.

Yours faithfully,



Head of the Dept/Centre

INDIAN INSTITUTE OF TECHNOLOGY MADRAS
Prof. V. JAGADEESH KUMAR
CENTRAL ELECTRONICS CENTRE

Technical Specification – Ionizing Radiation Survey Meter

S.No	Description	Specification
1	Radiation detected	Alpha above 7.5 MeV, Beta above 100 keV, and Gamma above 7 keV
2	Operating ranges:	0 to 5 mR/h or 0 to 50 μ Sv/h 0 to 50 mR/h or 0 to 500 μ Sv/h 0 to 500 mR/h or 0 to 5 mSv/h 0 to 5 R/h or 0 to 50 mSv/h 0 to 50 R/h or 0 to 500 mSv/h
3	Accuracy	Within 10% of reading between 10% and 100% of full scale indication on any range, exclusive of energy response. Calibration source is ^{137}Cs
4	Detector:	Chamber: 349 cc volume air ionization Chamber wall: 246 mg/cm ² thick phenolic Chamber window: 6.6 mg/cm ² Mylar, protected by steel mesh, 46 cm ² detection area
5	Controls	ON/OFF and MODE
6	Automatic features	Auto-zeroing, auto-ranging, and auto-back
7	Response time:	0 to 5 mR/h (0 to 50 μ Sv/h) – 8 sec 0 to 50 mR/h (0 to 500 μ Sv/h) – 2.5 sec 0 to 500 mR/h (0 to 5 mSv/h) – 2 sec 0 to 5 R/h (0 to 50 mSv/h) – 2 sec 0 to 50 R/h (0 to 500 mSv/h) – 2 sec
8	Integrate mode:	Should Operate continuously 30 seconds after the instrument has been turned on. Integration should be performed even if the instrument is displaying in mR/h or R/h
9	Freeze mode:	Should place a tick mark on the bar graph display to hold on the peak displayed value. The unit will continue to read and display current radiation values
10	Display:	LCD analog/digital with backlight
	Analog:	100 element bar graph 6.4 cm long. Bar graph is divided into 5 major segments, each labelled with the appropriate value for the range of the instrument
	Digital:	2.5 digit display is followed by a significant zero digit depending on the operating range of the instrument. The units of measurement should be indicated on the display at all times. Digits are 0.25 in (6.4 mm) high. Low battery and freeze indicators are also should be provided on the display
11	Operating Temperature range: Relative humidity:	- 20° to + 70°C 0 to 100%

cc Zindan


 प्रो. वी. जादेव कुमार
 Prof. V. JAGADEESH KUMAR
 अध्यक्ष/HEAD
 केंद्रीय इलेक्ट्रॉनिकी केंद्र
 Central Electronics Centre
 आई आई टी मद्रास, चेन्नई
 47 Madras, Chennai-600 036