



NATIONAL AEROSPACE LABORATORIES
(Council of Scientific & Industrial Research)
P.B. No. 1779, Kodihalli, Bangalore – 560 017
NIT No. NAL/ 03, 04 & 05 / E of 2008 – 2009
NOTICE INVITING TENDERS FOR ELECTRICAL WORKS

Date: 21.07.2008

Sealed item rate tenders are invited on behalf of Director, NAL for the works as detailed below from approved and eligible contractors of CPWD and those of appropriate list of Railways, MES, P & T Dept., KPTCL, Karnataka State PWD, BSNL, BESCOM, all ESCOMS. Tender forms will be issued only on written requisition and furnishing proof of registration and satisfactory completion of at least three similar works costing not less than the amount equal to 40% or two similar works costing not less than the amount equal to 50% or one similar work of the aggregate cost not less than the amount equal to 80% of estimated cost in CSIR/Govt/ Semi-Govt. organizations/ public sector undertaking/ Govt autonomous bodies/ reputed industrial unit during the past five years ending June 2008.

Sl. No.	Name of the Work	Estimated Cost (Rs.)	Time allowed	Earnest Money (Rs)	Last date of receipt of application	Last date of issue of tender document.	Date & time of receiving tenders.	Date & time of tender opening.
1	Electrification of New Reception Cum Security Office Building at NAL, Kodihalli.	2,22,800.00	Three months	4500.00	04.08.08 16.00 hrs	07.08.08 16.00 hrs	Upto 11.08.08 15.00 hrs	11.08.08 @ 15.30 hrs
2	Electrification of Impact & Crash studies building for Structures Division @ NAL, Kodihalli.	4,25,378.00	Two months	8500.00	04.08.08 16.00 hrs	07.08.08 16.00 hrs	Upto 11.08.08 15.00 hrs	11.08.08 @ 15.30 hrs
3	Providing external power supply to building for housing compressors connected with Autoclaves at NAL, Kodihalli.	37,29,434.00	Five months	74600.00	04.08.08 16.00 hrs	07.08.08 16.00 hrs	Upto 11.08.08 15.00 hrs	11.08.08 @ 15.30 hrs

Tender forms will be issued on all working days on payment of Rs. 500/- against cash remittance (if paid between 9.30 AM and 11.00 AM) or by Demand draft / Bankers Cheque / Banker's pay order drawn in favour of Director, NAL, Bangalore – 17.

NAL does not bind itself to accept the lowest or any tender and reserves to itself the right of accepting / rejecting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates quoted. This notice may also be seen at web site www.nal.res.in

Head, Electrical (K)

Sd/- Sr. Controller of Administration.

ESS / K / 4075 / 4079

Date : 21.07. 2008

From :

M. V. Krishna,
Head, Electrical section (K)
Fax: 25086055

To,

M/s. P.P.Publicities,
84,Residency road,
Bangalore - 25

Sub : Issue of NIT through Press Notification.

Ref : NIT No. NAL / 03 & 04 / E of 2008 – 2009

Please find herewith a Tender Notice and you are requested to publish this notice inviting tender only once in BANGALORE editions of "DECCAN HERALD " and "VIJAYA KARNATAKA" (English version) on or before 25th July 2008 positively. The bill in duplicate with supporting vouchers and full-page paper cutting (two copies) may be sent to this office for payment. Your bill may please be in accordance with DAVP rate as applicable.

(M.V. Krishna)

Encls: NIT No. NAL / 03 & 04 / E of 2008 – 2009.

NATIONAL AEROSPACE LABORATORIES
BANGALORE – 17.
Electrical Section, Kodihalli

Inter – Office – Memo

NAL / ELK / 68 / 08

Date: 21.07.2008.

To,
IMD

From,
Head, Electrical (K)

Sub: Publishing of NIT in NAL Website

Ref: NIT No. NAL / 03 & 04 / E of 2008 – 2009.

Please arrange to publish the enclosed Notice Inviting Tender (NIT) in the NAL Website from 18.07.2008 to 24.07.2008 positively. Sr. Controller of Administrative Officer has approved this NIT.

(M.V. Krishna)

Encls: NIT No. NAL / 03 & 04 / E of 2008 – 2009.

NATIONAL AEROSPACE LABORATORIES
BANGALORE – 17.
Electrical Section, Kodihalli

Inter – Office – Memo

Date: 22.03.2007.

To,
Sr.COA & COFA

From,
Head, Electrical (K)

Sub: 2. Providing internal power & lighting installation to new Smart Structures Lab for ACD, Kodihalli.

Ref: NIT No. NAL / 07 / E of 2006 – 2007.

The tender for the above work is due to be received up to 3.00 pm on 27.03.07 and the same will be opened at 3.30 pm on 27.03.2007. Sr.COA, COFA or their representative may please be present in the office of the Sr.COA / COFA, Kodihalli for opening of the tenders.

(M. V. Krishna)

NATIONAL AEROSPACE LABORATORIES.
P.B.No.1779, BANGALORE - 560 017.
(Council of Scientific and Industrial Research)

COST OF TENDER :500.00 per Set (Non - Refundable)

NAME OF THE WORK :PROVIDING INTERNAL POWER & LIGHTING
INSTALLATION TO NEW SMART STRUCTURES
LAB FOR ACD, KODIHALLI

T H I S D O C U M E N T C O N T E N T S O F :

Sl.No	Description	No. of Pages
1.	Contents	2
2.	Notice Inviting Tenders	4
3.	Articles of agreement, General Conditions of Contract, General Conditions, Additional Conditions, Indenture for Secured Advance & Performance Guarantee.	30
4.	Specification & Priced Schedule of Quantities.	19
5	Drawings	6

Note: Tenderer should confirm that they have received all the above papers.

Tender due on : 27.03.2007 up to 3.00 P.M.

Tender Copy Issued to : _____

Head, Electrical.
National Aerospace Laboratories,
Bangalore - 560 017.

Issued Date:

CONTENTS

- I. NOTICE INVITING TENDER
- II. ARTICLES OF AGREEMENT
- III. GENERAL CONDITIONS OF CONTRACT CLAUSES.
 - 1. INTERPRETATIONS
 - 2. DRAWINGS AND SPECIFICATIONS
 - 3. CONTRACTOR TO PROVIDE EVERYTHING NECESSARY
 - 4. AUTHORITIES, NOTICES AND PATENTS
 - 5. RATES TO INCLUDE ALL TAXES
 - 6. MATERIALS
 - 7. TESTING OF MATERIALS
 - 8. CONTRACTOR'S ENGINEER / FORMAN AND WORKMAN
 - 9. ACCESS
 - 10. VARIATION AND PRICE FOR VARIATION
 - 11. FAULTY MATERIALS AND WORK
 - 12. WORK TO BE OPENED FOR INSPECTION
 - 13. ASSIGNMENT OR SUB – LETTING
 - 14. INDEMNIFYING AGAINST DAMAGES TO PERSONS, PROPERTY AND STATUTES.
 - 15. LIEN IN RESPECT OF CLAIMS IN OTHER CONTRACTS.
 - 16. WITH HOLDING AND LIEN IN RESPECT OF SUMS CLAIMED
 - 17. IN CASE OF DEATH OF CONTRACTOR
 - 18. SUB – CONTRACTOR
 - 19. COMPLIANCE TO LABOUR LAWS AND APPRENTICE ACT
 - 20. COMPENSATION FOR DELAY
 - 21. DAMAGES TO WORK IN CONSEQUENCES OF HOSTILITIES OR WAR LIKE OPERATION
 - 22. EXTENSION OF TIME
 - 23. SUSPENSION OF WORK BY CONTRACTOR
 - 24. SECURED ADVANCE
 - 25. CERTIFICATE OF PAYMENTS.
 - 26. SECURITY DEPOSIT
 - 27. COMPLETION CERTIFICATE
 - 28. ESCALATION
 - 29. ARBITRATION

- IV. SPECIAL CONDITIONS
- V. ADDITIONAL CONDITIONS
- VI. INDENTURE FOR SECURED ADVANCE
- VII. PERFORMANCE GUARANTEE
- VIII. SCHEDULE OF QUANTITIES
- IX. DRAWINGS

**NATIONAL AEROSPACE LABORATORIES,
BANGALORE - 560 017.
(Council of Scientific & Industrial Research)
NOTICE INVITING TENDER.**

1. Tenders are hereby invited for the work of **Providing internal power & lighting installation to new smart structure lab for ACD, Kodihalli, Bangalore** from Vendors / Firms those who have carried out similar works for CSIR and Semi-Government Organizations
2. Estimated cost is **Rs. 37, 57, 952.00** (Rupees thirty seven lakhs fifty seven thousand nine hundred and fifty two only). This estimate is prepared based on CPWD 1992 – SR(1998 Print) and present market rates.
3. Time for carrying out the work will be **Eight Months** and the date of commencement shall be reckoned from the day of issue of award letter.
4. Complete contract documents to be complied with by the tenderer whose tender may be accepted can be seen at the office of Head, Electrical Section, Kodihalli, NAL, Airport Road, Bangalore – 17.
5. Tenders should be on the specified form (Non-transferable) which may be obtained from the Office of Head, Electrical Section, National Aerospace Laboratories, Airport Road, Bangalore - 17 from **12.03.2007 to 23.03.2007** during office hours on payment of Rs.500.00 (Rupees five hundred only) in cash (Non-refundable)
6. Tenders should be submitted in double sealed covers superscribed with the name of the work, date & time of opening written both on the inner & outer envelopes. They will be received upto **3.00 p.m. on 27.03.2007** and will be **opened at 3.30 p.m.** on the same day in the Office of Controller of Administration / Controller of Finance & Accounts NAL, Kodihalli, Bangalore - 17. Tender should be dropped in the tender box before the closing of date & time indicated. **In case these are sent by post these should be sent by Regd. Post / Speed post addressed to Controller of Administration, National Aerospace Laboratories, Airport Road, Bangalore – 17.** Tenderers are to ensure that they post the tender well in advance so as to reach before the closing time & date indicated.

7. The Earnest Money amounting to **Rs.75,160.00** (Rupees seventy five thousand one hundred and sixty only) as Demand Draft or Banker's cheque of pay Order of a schedule Bank and drawn in favour of the Director, National Aerospace Laboratories, Bangalore, should be accompany the tender. Tenders received without earnest money will be invalid.
8. The Employer does not bind himself to accept the lowest or an tender and reserves to himself the right of accepting the whole or any part of the tender and tenderer shall be bound to perform the same at the rates quoted.
9. Canvassing in connection with the tenders is prohibited and the tenders submitted by the contractor who resort to canvassing are liable for rejection.
10. The tenderer shall not be permitted to tender for the work in the concerned unit of CSIR in which a relative is posted in the grade between Controller of Administration & Junior Engineer (Both inclusive). He shall also intimate the Name of person who are working with him in any capacity or subsequent employed by him & who are relatives as mentioned above.

Note: A person shall be deemed to be a relative of another if, and only if, (a) they are members of a Hindu undivided family; or (b) they are husband and wife; or © the one is related to the other in the following manner. Father, mother (including step mother), son (including step son) son's wife, daughter (including step daughter), father's father, son's son, son's son's wife, son's daughter, son's daughter's husband, daughter's husband, daughter's sons husband, brother (including step brother), brother's wife sister (including step sister) sister's husband.

11. Tender submitted shall remain valid for 90 days from the date of opening for the purpose of acceptance and award of work, validity beyond 90 days from the date opening shall be mutually consent.
12. The Earnest Money Deposit of three lowest tenderers will be retained till the award of work to the eligible contractor if made. In case there is any delay in awarding the work, no claim will be entertained for compensation on account of delay if any in awarding the work.
13. The tenderer shall quote rates both in figures & words. He shall also workout the account for each item of work and write both figures & words. On check if there are differences between the rates quoted by the tenderer in words and in figures or in the amount worked out by him, the following procedure shall be followed:

- i. When there is difference between the rates in figures & in words, the rates, which correspond to the amounts worked out by the tenderer, shall be taken as correct.
 - ii. When the tenderer does not work out the amount of an item or it does not correspond with the rate written either in figures or in words, the rate quoted by the tenderer in words shall be taken as correct.
 - iii. When the rate quoted by the tenderer in figures and in words tallies but the amount is not worked out correctly the rate quoted by the tenderer shall be taken as correct and not the amount.
14. The tenderer should see drawings and in case of doubt obtain required particulars, which may in any way influence his tender from the Engineer as no claim whatsoever will be entertained for any alleged ignorance thereof.
15. Before tendering, the tenderer shall inspect the site to fully acquaint himself about the condition in regard to accessibility of site, nature and extent of ground, working condition of site and locality including stacking of materials, installations of tools and plants (T&P) etc., conditions affecting accommodations and movement of labour etc., required for the satisfactory execution of the contract. No claim whatsoever on such account shall be entertained by the Employer in any circumstances.
16. Earnest money will be forfeited if the contractor fails to commence the work as per letter of award.
17. Except writing rates and amount, the tenderer should not write any conditions or make any changes, additions, alterations and modifications in the printed form of tenders. Tenderers who are desirous to offer rebate the same should be brought out separately in the covering letter and submitted along with the tender.
18. Some of the provisions of General conditions of contract are given below. Interpretation however shall be as given in the general conditions of contract.
 - a). **DEFECTS LIABILITY PERIOD:** Twelve months from the date of completion as certified by the Employer.
 - b). **MINIMUM VALUE OF WORK FOR THE INTERMEDIATE CERTIFICATE:** Rs.2,04,000.00 (Rupees two lakhs four thousand only) Intermediate certificate for a lesser amount can be admitted for payment at discretion of the Engineer.

c). **SECURITY DEPOSIT:** Security deposit shall be deducted from the running bills at 10% of the gross value of work done and measured, inclusive of Earnest money subject to minimum of 10 % of estimated cost put to tender.

d). **COMPENSATION:** Contractor shall pay as compensation an amount equal to one percent or such smaller amount as the Employer (whose decision in writing shall be final) may decide on the amount of the estimated cost of the whole work as shown in the tender, for every week that the work remains un-commenced or unfinished or due quantity of work remain incomplete after the proper dates. Compensation to be paid shall not exceed ten percent of the estimate cost of the work as shown in the tender.

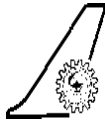
19. Schedule showing approximate quantity of materials to be supplied by the Employer under clause: 6 of the general conditions of the contract for works contracted to be executed and the rates at which they are to be charged for.

Particulars of Materials.	Approx. Qty	Rates at which material will be charged to the contractor			Place of Delivery
		Unit	Rs. (Figure)	Rs. (Words)	

- The Tenderer shall ensure that particulars in the above form are filled in by the Engineer before he submit the tender.

20. For all specialist jobs e.g. lights, air-conditioning, Public address, fire protection, security / surveillance and building management system, technical (covering also general conditions and commercial terms) and financial offers will be given separately in two sealed covers.

Note: All the vendors / firms may submit their proposals in single bid only Since, the equipments / materials required for the above work has been Specified.



NATIONAL AEROSPACE LABORATORIES
BANGALORE – 560 017.

(Council of Scientific and Industrial Research)

TENDER DOCUMENT FOR WORKS

NIT NO. : NAL / 07/ E OF 2006-2007

NAME OF THE WORK :2. PROVIDING INTERNAL POWER &
LIGHTING INSTALLATION TO NEW
SMART STRUCTURES LAB FOR ACD,
KODIHALLI

COST OF TENDER : RS. 500/- (NON REFUNDABLE)

TENDER DUE ON : 27th MAR 2007 BEFORE 3.00 PM

NATIONAL AEROSPACE LABORATORIES
Bangalore – 560 017
Electrical Section, Kodihalli

PRICED SCHEDULE OF QUANTITIES

Name of the work: Providing internal power & lighting installation to new Smart Structures Lab for ACD Division, Kodihalli

PART – A Internal Electrification						
Sl. No	Specifications	Unit	Qty	Rate		Amount
				In figs.	In words	
1	2	3	4	5	6	7
1	Supply of 415 V, 3 phase, 250A, 3P, 35 KA MCCB with microprocessor release having adjustable OL/SC/ EF protections with cat ref: NS400N3P93401 of make: Schneider Electric (NS)/ ABB (Isomax) / Siemens (3VL). The MCCB shall be mounted using suitable size of enclosure made out of 2mm thick CRCA sheet steel with painting, neutral link etc. The suitable provision has to be made for fixing of supply units for connecting the bus bar trunking and cable entry as required.	Each	1			
2	Installation testing and commissioning of the MCCB direct on the wall or recessed using necessary size of brackets made out of MS iron angle, fasteners etc. as required.	Each	1			

1	2	3	4	5	6	7
3	Supply of 250Amps, 660V, 50Hz, rated TP+ N+ PE Al. bus bar trunking. The bus bar shall be of aluminium and the enclosure made out of CRCA sheet steel provided with IP 52 protections. The tap off openings shall be provided one side on the panel of bus bar trunking such that blanking flaps can be automatically operated when the plugging in a connector or a tap off enclosures as per standard. The No. of tap off shall be of 3 (minimum) per meter. The bus bar trunk shall be provided with the following accessories of make: Schneider Electric / Molar / GE / Siemens.					
3.1	250A, 660V, 50Hz, TP+N+PE type vertical raiser bus bar trunking of type: KSA-25EA430	Meter	15			
3.2	Supply units for mains connection suitable for left or right mounting cat ref: KSA-25AB42	No.	1			
3.3	End terminals for closing the bus bar trunking cat ref: KSB-25FA3	No.	1			
3.4	Fasteners with necessary bolt, nuts, screws suitable for mounting the bus bar trunking cat ref: KSB – 25EZ1	Nos.	10			
3.5	100A Tap off connectors for distribution of three phase (3L+N+PE) with HRC fuse links and suitable enclosures.	Nos.	4			
4	Installation, testing and commissioning of the above bus bar trunking system along with the accessories as required.	Lot	1			
5	Supply of 4 Core x 16 Sq. mm PVC / XLPE insulated, Cu conductor, unarmoured 1.1 kV grade UG power cable of make: Primecab / Universal / NICCO / Havells as required.	Meter	80			

1	2	3	4	5	6	7
6	Laying of one number of PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size not exceeding 25 Sq .mm in the existing masonry open duct / on surface as required	Meter	80			
7	Supply and making end termination for the 4C x 16 Sq. mm sizes of XLPE insulated power cable of 1.1 kV grade cables with gland and copper cable sockets as required of make: Jainson / Comet / Dowell.	Nos.	16			
8	Supply, of 250 A, 6 way 3 phase 415V, insulated power distribution board (i.e. MCCB DB) having suitable rated TPN Cu bus bar conforming to IEC: 60439 -1 suitable for fixing of 3 pole MCCBs of make: Schneider Electric / Siemens / L&T / ABB / GE. This bus bar system shall be mounted on suitable size of enclosure made out of 2 mm thick CRCA sheet steel with epoxy powder-coated paint. The necessary cable entry box shall be provided for terminating incoming & outgoing cables. The necessary capacity neutral link & earth bar has to be provided as required. The general arrangement shall be got approved before fabrication.	Each	4			
9	Supply & fixing of 3pole, 160 A, 36KA MCCB with adjustable type thermal release, O/L, S/C & E/F protections of make: Schneider Electric / Siemens / L&T / GE in the existing MCCB DB of item no.8 in the schedule complete with connections, testing and commissioning etc., as required.	Each	4			
10	Supply & fixing of 3pole, 75 A, 30 KA MCCB with adjustable type thermal magnetic release, O/L &	Each	24			

1	2	3	4	5	6	7
	S/C protections of make: Schneider Electric / Siemens / L&T / ABB / GE in the existing MCCB DB of item no.8 in the schedule complete with connections, testing and commissioning etc., as required.					
11	Installation, testing and commissioning of MCCB DB on surface or recess using necessary brackets, fasteners, base frame etc. as required.	Each	4			
12	Supply of the following ways 415V, 3 ϕ incoming & 1 ϕ out going sheet steel VTPN MCB distribution board, complete with standard tinned copper bus bars, neutral link, earth bar, din bar, detachable gland plate, interconnections, including painting & earthing etc. having IP – 20 protection as required. The MCB DB shall be having a provision to install 3P MCCB of up to 100A rating as a incomer of make: MDS (Legrand)/ Schneider Electric / Siemens / GE.					
12.1	12 ways	Each	4			
12.2	4 ways	Each	4			
13	Supply & fixing of 5A – 32A rating 240 V, 'C' curve, 10 KA, SP MCB's in the existing MCB DB complete with connections, testing and commissioning etc., as required.	Each	192			
14	Supply & fixing of 63A rating 240 V, 'C' curve, 10 KA, TP MCB's in the existing MCB DB complete with connections, testing and commissioning etc., as required.	Each	8			
15	Installation testing and commissioning of MCB DB on surface / recess using necessary brackets, fasteners, base frame etc. as required.	Each	8			

1	2	3	4	5	6	7
16	Supplying & fixing of following sizes of PVC conduit along with the accessories in surface / recess including painting in case of surface conduit, or cutting the wall and making good the same in case of recessed conduit as required.					
16.1	25 mm.	Meter	1500			
16.2	40 mm	Meter	720			
17	Point Wiring: Wiring for light point / fan point / exhaust fan point / air-circulator point using 1.5 sq. mm PVC (FRLS) insulated 660 V grade copper conductor wire of Make: Anchor / Finolex / Standard / L&T in surface / recessed PVC conduit including 5 / 6 A modular switch along with accessories like MS box, front plate etc. for individual control. The separate neutral shall be provided for more than 8 points as required.	Point	119			
18	Wiring for light point 8 in a row with 1.5 sq. mm PVC (FRLS) insulated 660 V grade copper conductor wire of Make: Anchor / Finolex / Standard / L&T in surface / recessed PVC conduit including 5 / 6 A modular switch along with accessories like MS box, front plate etc. for individual control as required.	Each	40			
19	Wiring for fan point 7 in a row with 1.5 sq. mm PVC (FRLS) insulated 660 V grade copper conductor wire of Make: Anchor / Finolex / Standard / L&T in surface / recessed PVC conduit including 5 / 6 A modular switch along with accessories like MS box, front plate etc. for individual control as required.	Each	36			
20	Copper wiring in the existing conduit / casing capping: Supplying & drawing following					

1	2	3	4	5	6	7
	sizes of PVC (FRLS) insulated copper conductor, 660V grade single core wire in the existing surface / recessed PVC / steel conduit / PVC casing & capping as required:					
20.1	4x16 Sq. mm	Meter	525			
20.2	4 x 6 Sq. mm	Meter	300			
20.3	2 x 4 Sq. mm	Meter	975			
20.4	2 x 2.5 Sq.mm.	Meter	2500			
20.5	1x10 Sq. mm	Meter	525			
20.6	1x4 Sq. mm	Meter	300			
20.7	1 x 1.5 Sq.mm	Meter	3475			
21	Supplying & fixing of following sizes of DLP U-PVC adaptable trunking system along with accessories like base cover, partitions etc., in surface using necessary screws, fastners etc., all complete of make MDS (Legrand) / C&S gewiss / Schneider electric as required.					
21.1	105x55mm plastic DLP trunking with 85mm flexible cover.	Meter	270			
21.2	Separator partition for suitable for 105x55mm trunking.	Meter	270			
21.3	Adjustable internal angle suitable for 105x55mm trunking.	Nos.	25			
21.4	Partition Junction for internal angle suitable for 105x55mm trunking.	Nos.	25			
21.5	Changeable external angle suitable for 105x55mm trunking.	Nos.	25			
21.6	End cap suitable for 105x55mm trunking.	Nos.	25			
22	Supply of 2 x 36 watts surface type Mirror optics luminaries fabricated with CRCA MS sheet, epoxy powder coated and pre-wired with electronic ballast, push fit type lamp holder, starter, power factor improvement capacitor and mirror assembly shall be of high purity anodized aluminium standard optics etc.,	No.	73			

1	2	3	4	5	6	7
	all complete and suitable for operation on 230 V, 50 Hz AC power supply. Cat.Ref: CSBW 1124 EB of CG make or eqvt. Phillips / GE / C&S Gewiss / Wipro as required.					
23	Supply of 1 x 36 watts Industrial type general purpose luminaries fabricated with CRCA MS sheet, in stove enamel white finish, pre-wired with electronic ballast, push fit type lamp holder, starter, power factor improvement capacitor etc., all complete and suitable for operation on 230 V, 50 Hz AC power supply Cat. Ref: IGP1414EB of CG make or eqvt. in Phillips / GE / C&S Gewiss as required.	No.	30			
24	Supply of 2 x 36 watts Industrial type general purpose luminaries fabricated with CRCA MS sheet, in stove enamel white finish, pre-wired with electronic ballast, push fit type lamp holder, starter, power factor improvement capacitor etc.,. all complete and suitable for operation on 230 V, 50 Hz AC power supply Cat .ref: IGP1424EB of CG make or eqvt. in Phillips / GE / C&S Gewiss / Wipro as required.	No.	325			
25	Supply of 70W low bay Metal halide luminaire fabricated with CRCA MS sheet and finished with an epoxy powder coated white paint. The luminaire shall be provided with toughened and heat resistant clear glass cover for the lamp and control gear compartment houses a removable gear tray pre-wired with a copper wound polyester ballast power factor improvement capacitor, mains connector and bright anodized aluminium reflector with hammered finish for	No.	3			

1	2	3	4	5	6	7
	higher optical efficiency and better glare control with Cat Ref: LSA1107IH / MH (E) of make CG or eqvt. in Philips / C & S Gewiss / GE / Wipro					
26	Supply of 150W broad way luminair made out of cast aluminium alloy, grey painted conforming to IP: 65 ingress protection with flat glass lamp compartment cover to optimize beam control and maximize light output with Cat Ref: CRP330/150W of make: Philips or eqvt. In CG / GE / C&S Gewiss / Wipro	No.	7			
27	Supply & fixing of 36W, 4Feet florescent lamps with colour cool day light 6000K and lumen output not less than 3250 lumens and colour rendering index 80 of make CG or eqvt. in Philips / OSRAM / C& S Gewiss / Wipro	No.	826			
28	Supply of 70 W elliptical (E 27) metal halide lamp of Make CG / Phillips / Osram / Ventura.	No.	3			
29	Supply of 150 W elliptical (E 27) metal halide lamp of Make CG / Phillips / Osram / Ventura.	No.	7			
30	Installation, connecting, testing & commissioning of pre wired MHL / Fluorescent / Halogen luminaries direct on ceiling / truss using necessary brackets / fasteners & hardware including connections with copper wire as required.	No.	690			
31	Supply of 1200mm speed ceiling fan with standard length down rod, step type electronic regulator (modular type) etc., all complete suitable for operation on 230 V, 50 Hz AC supply of make: CG / Usha / Almonard as required.	No.	259			
32	Installation, testing & commissioning of ceiling fan / air-circulators & regulator including	No.	259			

1	2	3	4	5	6	7
	wiring the down rod of standard length with copper wire etc., as required.					
33	Supply of 300 mm sweep exhaust fans including shutters and louvers with all accessories & suitable for operation on 230 V, AC, 50 Hz of Make: CG / Usha / Almonard as required.	No.	7			
34	Installation of exhaust fan upto 450 mm sweep in the existing opening, including making the hole to suit the size of the above fan, making good the damage, connections, testing, commissioning etc., as required.	No.	7			
35	Fixing of louvers/shutters complete with frame for exhaust fans of all sizes as required.	No.	7			
36	Numbering of ceiling fan / exhaust fan / fluorescent luminaries etc, as required.	No.	956			
37	<p>Supply, installation, testing and commissioning of single phase power distribution boxes having modular type switches, sockets, suitable ways MS boxes, front plates etc., all complete with following combinations:</p> <ul style="list-style-type: none"> ➤ 6 / 16A, 3pin combined shuttered modular type socket, Cat Ref: CQ000220 - 3 Nos. ➤ 16A, SP modular type switches, Cat Ref: CQ000060 - 3 Nos. ➤ 12 module MS box, cat ref: CR000912 -1 No. ➤ Indicator Cat ref: CQ000310 -1No. ➤ Dummy Plates Cat Ref: CQ000400 - 2 Nos. ➤ 12 module sapphire range front plates, Cat Ref: CQ000812 -1No. <p>The above distribution box</p>	Set	98			

1	2	3	4	5	6	7
	shall be fixed recessed to the wall and making good the same as required. The switch box, switches and other auxiliaries shall be of Crabtree make or eqvt. in C&S Gewiss/ Schneider/ Litaski.					
38	Supply of 32A, 3 pole, 10KA MCCB with fixed thermal magnetic release O/L S/C protections with rotary operated handle. The MCCB shall be mounted on suitable size enclosure made out of 1.6 / 2 mm thick sheet steel with epoxy powder-coated paint. Suitable size of neutral link shall be provided as required of make: Havells / Schneider Electric / Siemens / L&T / GE	Each	21			
39	Installation, testing and commissioning of MCCB with enclosure on surface or recess using necessary brackets, fasteners, base frame etc. as required.	Each	21			
40	GI earth plate electrode: Earthing with GI earth plate 600 x 600 x 6 mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc., (But without charcoal or coke and salt) complete as required.	Set	6			

1	2	3	4	5	6	7
41	Salt / charcoal for plate earthing: Extra for using charcoal and salt for GI plate earth electrode as required.	Set	6			
42	Providing & fixing 25 x 5 mm GI strip on surface / recess for loop earthing using necessary hardware etc., as required.	Meter	30			
43	Providing & fixing copper tape 20X3 mm thick on parapet wall or surface of wall for lightning conductor as required (for vertical run)	Meter	50			
44	Supply and fixing of Single Line & schematic drawings of as built power & lighting distribution of the installation. The drawing shall be generated in Auto-CADD on A3 size (minimum) of paper. The drawings shall be mounted on suitable size frame and cover with clear glass as required.	Set	1			
45	Supply, fixing of 3 phase junction boxes of size 250x250x150 mm made out of 2 mm thick CRAC sheet steel. The box shall be painted with 2 coats of red oxide paint and finished with powder-coated paint. The junction box shall be provided with 4 Nos. of 100A bolted type Elmex connector mounted on din rail. The din rail has to be fixed on 6mm thick hylum sheet and it has to be fixed inside the junction box using necessary fasteners as required. The general arrangement has to be got approved before fabrication.	No.	25			
46	Supply of 100 KVAR, 3 phase, 440V, 50Hz, thyristor switched automatic power factor control panel (APFC) panel suitable for indoor type conforming to IP: 42 protections. The switching arrangement shall be of 3	No.	1			

1	2	3	4	5	6	7
	stages of 1x10+ 2x20+ 1x50 Kvar capacitor banks configuration. The capacitors shall be of MD.XL type & suitable capacity of MCCB shall be provided for incoming. The switching of outgoing capacitor banks shall be thyristor controlled and provided with microprocessor based APFC relay The enclosure shall be free standing, floor mounting compartmentalized made out of 2mm thick CRCA sheet steel. The enclosure shall be painted with siemens gray shade RAL 7032. The suitable provision has to be made for connecting the bus bar and cable entry all complete as required. The make shall be L&T / ABB / Barron.					
47	Installation, testing and commissioning of 100 KVAR, 3 phase, 440V, 50Hz, automatic power factor control (APFC) panel using necessary hardware, fasteners, etc. complete as required.	No.	1			
48	Supply and laying of 20 pair 0.61mm, copper conductor, PVC insulated, PVC sheathed, unarmored telephone cable in the existing PVC conduit with all necessary accessories, as required	Meter	40			
49	Supply and laying of 0.51mm, 2 pair, tinned copper conductor, unarmored PVC insulated telephone cable.	Meter	2000			
50	Supply and cable termination of 20 pair DP box with Krone make modules	Nos.	4			
51	Supply, fixing and connecting of RJ-11 jack type telephone outlet with interconnection of the outlet.	Nos.	60			
52	Supply and laying of 2 mm thick PVC conduit with all necessary accessories like junction boxes,					

1	2	3	4	5	6	7
	pull boxes. G I fish wires and other fixing accessories as required. The rate shall also include chasing of walls, floor and plastering of the chased portion etc; all complete as required:					
52.1	50mm dia	Meter	6			
52.2	25mm dia	Meter	45			
52.3	20mm dia	Meter	1000			
53	Supply of 3 Core x 95 Sq. mm XLPE insulated, Al. conductor, armoured 1.1 KV grade UG power cable of make: Primecab / Universal / NICCO / Havells as required.	Meter	750			
54	Providing & laying non-pressure NP-2 class (light duty) R.C.C pipe in road / concrete of size 150 mm dia with collar joints, stiff mixture of cement mortar in the proportion of 1:2 (1 cement 2 fine sand) including testing of joints etc., all complete as required.	Meter	25			
55	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size exceeding 25 Sq .mm but not exceeding 400Sq.mm in the existing PCC / HUME / STONEWARE / METAL pipe as required	Meter	75			
56	Laying of one number of PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size exceeding 25 Sq .mm but not exceeding 120Sq.mm direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc./, as required.	Meter	300			
57	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size exceeding 25 Sq .mm but not exceeding 120Sq .mm direct in ground in the same	Meter	300			

1	2	3	4	5	6	7
	trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc., as required.					
58	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 1.1KV grade of size exceeding 25 Sq .mm but not exceeding 400Sq.mm in the existing masonry open duct / on surface as required	Meter	75			
59	Supply and making end termination for the 3 C x 95 Sq. mm sizes of XLPE insulated power cable of 1.1 kV grade cables with brass compression gland and aluminium lugs as required of make: Jainson / Dowell / Comet.	Set	12			
60	Supply, install, testing & commissioning of 3pole, 32 A, 25KA motor duty MCCB with thermal magnetic release, O/L, S/C & E/F protections of make: Schneider Electric / Siemens / L&T / GE / ABB. The MCCB shall be mounted on the suitable size of enclosure. The enclosure shall be made out of 2 mm thick sheet steel and provided with 63A TPN copper bus for loop in and loop out connection. The necessary provision shall be provided for termination of 2 runs of 3 c x 95 Sq. mm at top and bottom. The enclosure shall be painted with 2 coats of red oxide and siemens gray. The enclosure shall be fixed on surface of the wall using necessary brackets, screws etc., as required. The general arrangement of the above got approved before fabrication as required.	No.	1			
61	Supply, install, testing &	No.	1			

1	2	3	4	5	6	7
	<p>commissioning of 20KVA, 3phase, 415V, 50Hz, 1:1, delta /star type isolation transformer with following specification:</p> <ul style="list-style-type: none"> • Vector group: DYN11. • Efficiency: $\geq 96\%$ • Regulation: $\leq 4\%$. • Insulation level: Class 'H' • Isolation: double isolated i.e. isolation shields should be provided after primary and secondary windings. • Ventilation: dry type (A N cooling), Sufficient ventilation shall be provided. • Winding: shall be electrolytic grade copper dual insulated enamel coated. • Core material: CRGO M-51 grade. • Temperature: maximum operating temperature rise shall not exceed 45 deg C above ambient temperature of 40 deg C. • Enclosure: powder coated sheet metal enclosure suitable for floor mounting with wheel type arrangement. • Varnish curing process: In vaccum impregnated high temperature chamber. • Application: This isolation transformer will be used in the UPS power distribution for servers systems where the secondary neutral will be connected to ground and the transformer will be kept on full load continuously. • The transformer shall be supplied with enclosure with protected INPUT & OUTPUT terminals. • Sufficient provision shall be made in the enclosure for 					

1	2	3	4	5	6	7
	<p>taking the input and output cables by fixing cable glands.</p> <ul style="list-style-type: none"> • The transformer shall be as per relevant IS codes. • Routine tests shall be conducted in the presence of NAL engineers. • The transformer manufacturer should have good manufacturing facilities and testing facilities. 					
62	<p>Supply of 4 ways 415V, 3ϕ incoming & 3ϕ out going sheet steel VTPN MCB distribution board, complete with standard tinned copper bus bars, neutral link, earth bar, din bar, detachable gland plate, interconnections, including painting & earthing etc. having IP – 20 protection as required. The MCB DB shall be having a provision to install 63A, 3P MCCB as a incomer and 4 nos of 16 A, 3 P MCBs of make MDS (Legrand)/ Schneider Electric / Siemens / GE/ ABB.</p>	No.	1			
63	<p>Supply & fixing of 3pole, 63A, 25KA MCCB with adjustable type thermal magnetic release, O/L, S/C & E/F protections of make: L&T / MDS (legrand) / Schneider Electric / Siemens / GE/ ABB in the existing MCB DB complete with connections, testing and commissioning etc., as required.</p>	No.	1			
64	<p>Supply & fixing of 16A rating 240V, 'C' curve, 10 KA, TP MCB's of make: MDS- legrand / Havells / Schneider-Electric / Siemens / L&T / GE / ABB in the existing MCB DB complete with connections, testing and commissioning etc., as required.</p>	No.	8			
65	<p>Supply of 4 ways 415V, 3ϕ incoming & 1ϕ out going sheet steel VTPN MCB distribution</p>	Nos.	4			

1	2	3	4	5	6	7
	board, complete with standard tinned copper bus bars, neutral link, earth bar, din bar, detachable gland plate, interconnections, including painting & earthing etc. having IP – 20 protection as required of make: MDS (Legrand)/ Schneider Electric / Siemens / GE / ABB.					
66	Supply & fixing of 4A rating 240 V, 'C' curve, 10 KA, SP MCB's in the existing MCB DB complete with connections, testing and commissioning etc., as required.	Nos.	48			
67	Installation testing and commissioning of MCB DB on surface / recess using necessary brackets, fasteners, base frame etc. as required. The general arrangement shall be got approved before fabrication	Nos.	8			
68	Copper earth plate electrode: Earthing with copper earth plate 600 x 600 x 3 mm thick including accessories and providing masonry enclosure with cover plate having locking arrangement and watering pipe etc., (But without charcoal or coke and salt) complete as required.	Set	2			
69	Salt / charcoal for plate earthing: Extra for using charcoal and salt for GI plate earth electrode as required.	Set	2			
70	Providing & fixing 25 x 5 mm copper strip on surface / recess for earthing using necessary hardware etc., as required.	Meter	30			
71	Supply of over voltage / under voltage monitor relay control panel using 3 nos. 240V, 50Hz, MV12A model relays, Cat Ref: MV12AB00X00 and one no. of multi data meter, quasar model, class –1, 96 x 96 mm size with Cat Ref:	No.	1			

1	2	3	4	5	6	7
	WI300FC1300 of L&T make or eqvt. in Siemens / GE / ABB / Schneider-Electric. The above relay and multi data meter shall be mounted on suitable size of enclosure made out of 1.6mm / 2mm thick sheet steel with epoxy powder-coated paint. All the relays shall be suitable wired using necessary copper wire, auxiliary contactor, switch, connectors, etc., as required. The general arrangement of all the above shall be got approved before fabrication.					
72	Installation, testing and commissioning of over voltage relay board on surface / recess using necessary brackets, fasteners, base frame etc. as required.	No.	1			
TOTAL						
DISCOUNT IF ANY						
GRAND TOTAL						

Duration: Eight Months

Signature of the Contractor with Date and seal

NAL / ELK / 05 / 07

Date: 08.01.2008

From:

M. V. Krishna,
Head, Electrical section (K)
Fax: 25086055

To,

M/s. P.P.Publicities,
#19, 2nd Cross,
Yamunabai Road,
Madavanagar, Bangalore – 560 001.

Sub: Issue of NIT through Press Notification.
Ref: NIT No. NAL / 05 / E of 2007 – 2008

Please find herewith a Tender Notice and you are requested to publish this notice inviting tender only once in BANGALORE editions of "DECCAN HERALD " and "VIJAYA KARNATAKA" (English version) on or before 9th January 2008 positively. The bill in duplicate with supporting vouchers and full-page paper cutting (two copies) may be sent to this office for payment. Your bill may please be in accordance with DAVP rate as applicable.

(M.V. Krishna)
Head, Electrical (K)

Encls: NIT No. NAL / 05 / E of 2007 – 2008.

NATIONAL AEROSPACE LABORATORIES
BANGALORE – 17.
Electrical Section, Kodihalli

Inter – Office – Memo

NAL / ELK /05/ 07

Date: 08.01.2008

To,
KTMD

From,
Head, Electrical (K)

Sub: Publishing of NIT in NAL Website
Ref: NIT No. NAL / 05 / E of 2007 – 2008.

Please arrange to publish the enclosed Notice Inviting Tender (NIT) in the NAL Website from 09.01.2008 to 23.01.2008 positively. Controller Of Administration has approved this NIT.

M.V.Krishna

Encls: NIT No. NAL / 04 / E of 2007 – 2008

NATIONAL AEROSPACE LABORATORIES
(Council of Scientific & Industrial Research)
P.B. No. 1779, Kodihalli, Bangalore – 560 017
NIT No. NAL/ 5/ E of 2007 – 2008
NOTICE INVITING TENDERS FOR ELECTRICAL WORKS

The Controller of Administration, NAL, Bangalore invites on behalf of Director, NAL sealed item rate tenders for the works as detailed below from approved and eligible contractors of CPWD and those of appropriate list of Railways, MES, P & T Dept., KPTCL, Karnataka State PWD, BSNL, BESCO, all ESCOMS. Tender forms will be issued only on written requisition and furnishing proof of registration and satisfactory completion of at least three similar works costing not less than the amount equal to 40% or two similar works costing not less than the amount equal to 50% or one similar work of the aggregate cost not less than the amount equal to 80% of estimated cost in CSIR/Govt/ Semi-Govt. organizations/ public sector undertaking/ Govt autonomous bodies/ reputed industrial unit during the past five years ending November 2007.

Sl. No.	Name of the Work	Estimated Cost (Rs.)	Time allowed	Earnest Money (Rs)	Last date of receipt of application	Last date of issue of tender document and its cost	Date & time of tender opening.
1	Integrating electrical subsystems of Autoclave Mark IV at Autoclave Complex, ACD, NAL, Kodihalli, Bangalore-17	7,48,852.00	Three months	15,000.00	14.01.08 16.00 hrs	17.01.08 16.00 hrs Rs. 500.00	21.01.08 @ 15.30 hrs
2	Replacement of UG cable in place of over head lines at staff quarters area, NWTC, NAL, Belur, Bangalore-37	4,63,080.00	months	9300.00	22.01.08 16.00 hrs	23.01.08 16.00 hrs Rs. 500.00	28.01.08 @ 15.30 hrs
3	Re-Conditioning of earthing system at 66 / 11 KV Sub-station, NWTC, NAL, Belur, Bangalore-37	3,38,918.00	Two months	6800.00	22.01.08 16.00 hrs.	23.01.08 16.00 hrs. Rs.500.00	28.01.08 @ 15.30 hrs.

Tender forms will be issued on all working days (excepting intervening Saturdays, Sundays and NAL Holidays) against cash remittance (if paid between 9.30 AM and 11.00 AM) or by Demand draft / Bankers Cheque / Banker's pay order drawn in favour of Director, NAL, Bangalore – 17.

This organization does not bind itself to accept the lowest or any tender and reserves to itself the right of accepting / rejecting the whole or any part of the tender without assigning any reason there of and the tenderer shall be bound to perform the same at the rates quoted. This notice may also be seen at web site www.nal.res.in

Sd/-
Controller of Administration.



NATIONAL AEROSPACE LABORATORIES
(Council of Scientific & Industrial Research)
P.B. No. 1779, Kodihalli, Bangalore – 560 017
NIT No. NAL/ 05 / E of 2008 – 2009
NOTICE INVITING TENDERS FOR ELECTRICAL WORKS

Date: 21.07.2008

Sealed item rate tenders are invited on behalf of Director, NAL for the works as detailed below from approved and eligible contractors of CPWD and those of appropriate list of Railways, MES, P & T Dept., KPTCL, Karnataka State PWD, BSNL, BESCOM, all ESCOMS. Tender forms will be issued only on written requisition and furnishing proof of registration and satisfactory completion of at least three similar works costing not less than the amount equal to 40% or two similar works costing not less than the amount equal to 50% or one similar work of the aggregate cost not less than the amount equal to 80% of estimated cost in CSIR/Govt/ Semi-Govt. organizations/ public sector undertaking/ Govt autonomous bodies/ reputed industrial unit during the past five years ending June 2008.

Sl. No.	Name of the Work	Estimated Cost (Rs.)	Time allowed	Earnest Money (Rs)	Last date of receipt of application	Last date of issue of tender document.	Date & time of receiving tenders.	Date & time of tender opening.
1	Providing external power supply to building for housing compressors connected with Autoclaves at NAL, Kodihalli.	37,29,434.00	Five months	74600.00	04.08.08 16.00 hrs	07.08.08 16.00 hrs	Upto 11.08.08 15.00 hrs	11.08.08 @ 15.30 hrs

Tender forms will be issued on all working days on payment of Rs. 500/- against cash remittance (if paid between 9.30 AM and 11.00 AM) or by Demand draft / Bankers Cheque / Banker's pay order drawn in favour of Director, NAL, Bangalore – 17.

NAL does not bind itself to accept the lowest or any tender and reserves to itself the right of accepting / rejecting the whole or any part of the tender and the tenderer shall be bound to perform the same at the rates quoted. This notice may also be seen at web site www.nal.res.in

Head, Electrical (K)

Sr. Controller of Administration.