

दूरभाष Ph : 91-80-25530672-76 फैक्स Fax : 91-80-25534043

भारतीय ताराभौतिकी संस्थान

INDIAN INSTITUTE OF ASTROPHYSICS कोरमंगला / KORAMANGALA

बेंगलूर / BANGALORE - 560 034.

No: PUR/IMP/JPL/UVIT/ISO/39	July 29, 2008
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M/s.

Dear Sirs,

The Director, Indian Institute of Astrophysics, Bangalore invites Sealed Tenders for the Import of **Dichroic mirrors & NUV Interference filters** detailed in the Tender Form hereto annexed. The terms and conditions are also enclosed may be noted and if you are in a position to quote for the supply in accordance with the requirement, please submit your quotation in the attached Tender Form. The Tender documents are available on IIA web site www.iiap.res.in/tenders.htm

The Tender bids should be in foreign currency only. Your completed Tender bids must reach this office in sealed envelope duly superscribed with the name of the supply and due date on or before 15.00 Hrs. latest by 29.08.2008. The bids will be opened in presence of the bidders or authorized representative at 15.30Hrs. Same day. Incomplete Bids are liable for rejection.

Thanking you,

Yours faithfully,

Administrative Officer For Director

Encl.: as above.



PUBLIC TENDER DOCUMENT No: PUR/IMP/JPL/UVIT/ISO/39/08-09. DT: 29.07.2008

TENDER FORM

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TO

THE DIRECTOR, Indian Institute of Astrophysics., Bangalore-560 034.

Sir,

I/We hereby offer to supply the Items/Equipment indicated below at the price hereunder quoted and agree to hold this office open till ______. I/We shall be bound to supply the Items/Equipment hereby offered upon the issue of the Purchase Order communicating to the acceptance thereof on or before the expiry of the last mentioned date. You are at liberty to accept any one or more of the items of such Items/Equipment. I/We not withstanding that the offer in this tender has not been accepted in whole, shall be bound to supply such items and such portion or portions of one or more of the items as may be specified in the said Purchase Order communicating the acceptance.

Pichroic mirror dia 85mm.	2/3 Nos.		
ritness sample	2 Nos.		
TUV Interference filters			
. NUV-11- φ -50mm	2/3 Nos.		
. NUV-12- φ -50mm	2/3 Nos.		
NUV-13- φ -50mm	2/3 Nos.		
Vitness samples (2 Nos. each)	6 Nos.		
s per the specification in			
nnexure – A.			
	NUV-11- φ -50mm NUV-12- φ -50mm NUV-13- φ -50mm Vitness samples (2 Nos. each) s per the specification in	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	$\begin{array}{cccccccccccccccccccccccccccccccccccc$



Place at which the Delivery is required : Indian Institute of Astrophysics

Bangalore-560034.

Date by which the supplies are required : 4/8 weeks from the date of order.

2. I/We have understood the items of the tender annexed to the invitation to the Tender and have thoroughly examined the specifications/drawing and /or pattern quoted or referred to herein and/are fully aware of the nature of the items/Equipment required and my/our offer is to supply the items/Equipment strictly in accordance with the requirements subject to the terms and conditions contained in the Purchase Order communicating the acceptance of this tender either in whole or in part.

Date: Signature and Seal of Supplier



Annexure A

UV/VISIBLE DICHROIC MIRRORS &

INTERFERENCE UV FILTERS

I Specifications:

UV/VISIBLE DICHROIC MIRROR 1

T^æ)ÁÜ^-∤^&cãçãc	GEEÁ. ÁHEEÁ, { HGEÁ. ÁI €EÁ, {	ÜÁÁNÁÍÍÃ VÁÁNÁÍÍÃ
U ´ oÁ, ÁÓæ) åÁÓ [& Š Ü^+/^ & Cā; } ///////////////////////// Ö^çãædā; }Á; [{Á; ^æ)Á^+/^ & Cāçãc Á	XXXHOGE: I€€Á;{ XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX	ÜÁÁLÁÍÁ ŁÆÉÐÖÆF€Ã
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Physical parameters:

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(A) Optical Parameters

- FÉÁ OE; * |^Á; -Á§; &ãô^} &^Á; -Á; ÍÁ°, * ÉÉÁA; åÁ; }] [|æðã ^åÁð @È
- CĐÁ V@ÁĐ¢\Á& [æðā]*Án @æþlÁà^Á;}ã[¦{Án,ç^lÁn@Án}cāl^Áæb+^æóbæ)åÁ¦^^Án,ĀjājÁ@;|^•LÁn@Án[cæþ ÁÁÁÁ æb-^æóka[ç^l^åÁa^Án@ÁjājÁ@;|^•Án[Áà^ÁnLÁT€ĒÁn;Án@Án[cæþÁæb+^æón]Án@Áād*\È Þ[}Ë}ã[¦{ãcÁnjÁ^-|^&nãpãcÁæb;åÁn!æ)•{ã•ān}Án@`|åÁa^ÁnLHÁÑÁn,^æ)Á^-|^&nãpãcÁæb;åÁn ¦æ)•{ã•ān}È
- \overrightarrow{HEAA} \overrightarrow{U} | $\overrightarrow{-aa}$ \overrightarrow{A} \overrightarrow{a}
- IÈÁ Ù'¦-æ&^Á|æe}^••ÁÇ;æ&@Á'¦-æ&^DMÁØ[¦Áæ)^ÁG€Á;{Áå;ãæ{^c\!Áæb^æá;Áæ@
- $\angle ||A|^*| + \angle ||$
- ÍÈÁÁ T&S¦[Á-[**@}^••ÁAÁLÁG€ÁOE;*•d[{•È
- ÎÈÁ Y^å*^Áse}*|^Án@?`|åÁsh^ÁuÁFÉÁse&Á, ājře^•Áseee^¦Á&;aseāj*È

(B) Additional Parameters

- QĐÁ U]^¦æđaj*Á/^{]^¦æč¦^ÁMÁKWW€Á[Á,1€Áå^*ÞŽ&^}cðt¦æå^
- HÈÁ Xælāæaā[}ÁsjÁclæ)•{ã••ā[}Á¸ão@Ác^{]^¦æc'¦^ÁKÁÁÁLÁCÃÁÁ[¦Á^ç^¦^ÁF€Ás^*¦^^•Ás@æ)*^
- ÁÁÁÁÁ ∄Ác^{]^¦æc`¦^ÁsœcÁse}^Á;æç^|^}*c@ÁS;Ác@ Áæ)*^ÁnH∈Á;{Áq ÁiÍ€Á;{ÉÁ√@áÁsá^•ã*}
- IÈÁ Xælāæeā]}ÁŞIÁ^-\^&cāçāĉÁ¸āc@Ác^{]^¦æeč¦^ÁMKÁKÁCà ÁÁ;¦Á^ç^¦^ÁF€Á\$^*¦^^•Á&@æ)*^
- ÁÁÁÁ ã Áå^•ãt}Án]^&ãa&æaã[}Áæ)åÁ,^^åÁ,[oÁà^Áå^{[}•dæe^åÈ

2. UV INTERFERENCE FILTERS

NUVB 11

	/ ////////////////////////////////////	ÁÁNXOVÁ ÁÙ]^&•È
FÈ	V¦æ)•{ã•ã[}Áæ)*^	ŁÁGH€Á;{
Œ	ÁT^æ),Á√¦æ),•{ã••ã[}Á\$],Á\$J,ÁĞG€€ËGH€Á;{	ÁÁÁNÁÍÁ
HÈ	ÁÜ∄] ^Á;^æ;Á[Á;^æ;Á§;ÁKO€€ËÖ;H€Á;{	ŁÆËËF€ÃÁ[ÆT^æ)
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Ì	T & k [Á [* * @ ^••	ÁÁÁÁLÁG€CEÁ{ •
JÈ	Ù´¦-æ&^ÁÛ`æ ãĉÁÇ•&¦æe&@ZàðiD	I€ÁÐÁG€
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		ŁÁR€ÃÁ[¦ÁÁNÁGI€Á]{
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	ÁS,ÁGI€Á,ÁGÌ€Á,{	
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		V[Áà^Áo@Áæ(^Áæ)Á[¦
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Н	Üą] ^Á,^æ\Á(Á,^æ\	lŁÁÉËT€ÃÁ,√ÁT^æ)
1	Ô^}dæpÁ/æç^ ^}*c@	ÁÁÁGIÍÁÁÉÐÐÁGÁJ{
ĺ	Pæ⇔ÁÚ[¸^¦ÁÓæ)å¸ããc@	ÁÁÁÁ HEÁÉÐÐÁGÁ, {
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(A) Physical parameters

FÈÁ Ù@eļ^Á KÍÔå& þæ

QĐÁÁ Öã[^}•ā[}•Á[-Á-čà•dæe^

(B) Optical Parameters for NUV11, NUV12, & NUV13

FÈÁ Tậã {Á•æà|^Áåãæ{^ơ\¦ÁWWA KÁÁÍÆÉ€ÈÈBɀɀÁ{{

G.ÁÁ Ùˇ¦-æ&^ÁˇæþãĉÁÇ•&¦ææ&@PàðāD KÁN,€ËD€ÁÇÓ[c@Á*¦-æ&∧•Á;-Á*à•dææ^D

 $H\grave{E} \grave{U}^* \mid -\text{as}^{\wedge} \hat{A} \mid \text{as}^{\wedge} \cdot \bullet \hat{$

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IÈÁ T&3¦[Á[ˇ*@]^••Á KÁLÁG€ÁCEÁ{•

ÍÈ V@ Áā¢^¦Á&[ææā]*Án @æq|Ásà^Á;}ã[¦{Án;ç^¦Ás@ Án;}œā^Ásæb^æásæb;åÁ;\^^Án;Æjā;Á@;|^•Áu

(C) Additional Parameters for NUV11, NUV12, & NUV13

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HÉÁ Xælāæatī}ÁsjÁdæ)•{ã•đi}Á¸ão@Ác^{]^læc*l^KÁÁALÁCÃÁ[lÁn°ç^l^ÁF—€Áå^*l^^•Á&@æ)*^ ∄Ác^{]^læc*l^ÉÁÁV@Ár]^&ãã&æatī}•Á[}Ádæ)•{ã•đi}Át[Áà^ÁçæbáñÁsjÁc@Á[]^læct]* c^{]^læc*l^Álæ)*^Á[ÆÁt[Ál⊕Áå^*ÉÁS^}cãtlæå^ÉÁV@áÁãÁå^•ãt}Ár]^&ãã&æatī}}Áæ)å }^^åÁ;[Óà^ÁÁå^{[]}•dæc*åÈ

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II Quality assurance provisions / Requirements

1. Materials/Coating requirements

- (30)Á (1)Ác@ Á; æc'\ ãæ+ Á ^ å Á; \ Áæà\ 38æā; \ Á; -Ác@ Áå 38@[38Á; ā\ [\ Áæ) å Áāc'\ Á @æ|Áà ^ Á; ~] æ&^ Á * æáā å Ác] ^ Áæ) å Ác@ Á* à dæc Á; æc'\ ãæ+ Á ^ å Á { \ Aæ}\ 38æā; \ Á; -Ác@ Áāc'\ @æ|Áà ^ Á\ ^ Á\ [{ Á• dæā} ÉĀā; c'\ } æþÁ• d^• ^ Áæ} å Åā; c'\ } æþÁå ^ ~ & Ø Á[\ Áæà\ 38æā; \ Á; -Áæ) Ác@ Áa* à à | ^ Ê \ & æ&c \ ^ Ác. Same batch of materials Á* @æ|Áà ^ Á* ^ å Á[\ Áæà\ 38æā; \ Á; -Áæ) Ác@ & & [] [} ^ } c Æ; & Ávitness samples and flight components È

- Q;DÁ O CÁ, æ\ Á;}Ás@ Á°å*^Á;Ás@ Á&[{][}^}oÁg`&@Áæe Áæ;Áæ;lé;¸Á→ÁDÁ Q;`|åÁg;åã&ææ^Ás@ ÁÁÁÁÁ åã^&cá;}Á;Án`¦ææ&^ÁrÁq;@ Ág,&ãå^}oÁs^æ;Ásåa^&cá;}DDÁV@ Áæà;lã&ææ;¦Án Q;`|åÁ;¦[çãa^ ÁÁÁÁÁ o @ Áæ;]]¦[]¦ãææ^Áså^}cãã&ææá;}Á;æb\ã;*Á[¦Á°æ&@Á&[{][}^}dÈ
- QcaDÁ V@Á[||[¸ā]*Ásj-[¦{æeā[}Áseà[ĭóÁs@Ás[æe^åÁs[{][}^}o•Á*@[ĭ|åÁs^Á*]]|ā^åÁs[ÁÁÁÁÁ VXXQVÁc^æ[ÁK
 - .Á V@Á¦^-|^&cæ) &^Áæ) åÁdæ) { ãcæ) &^Á&`¦ç^•Á[-Áåã&@[ã&Á{ã¦[¦•Áæc líå^*ÈÁ§ &ãå^}cÁb^æ(Á§ Ác@Á]^&dæ|Áæ) *^Á; ^}cā[}^åAÁ§ Ár^&cā[}Ái . V@Ádæ) • { ã••ã[}Á[-ÁWXÁ3] c^¦-^¦^} &^Áā[c^¦•Á3] Ác@Á•]^&dæ|Áæ) *^ { ^}cā[}^åÁ§ Ár^&cā[}ÁI
- (Canada V@Ána) Ána^æ(Ánæ•arc^åÁna^][•anana) Ána Án¦\^∞\\^åÉÁV@Ár&@;ar`^Ár•^åÁn @æ|Æna^ ÄÁÁÁÁÁ @æ|Æna
- QcanannÁ V@ Ánac) callin ∤^&ca[} Ánaca] * Án} Ánaca] * Án} Ánaca] * Án} Ánaca] * Án} Ánaca] * Ánaca

Çã¢DÁÁÁ V¦æ)•{ã••ã[}Ásæ)åÁÜ^-¦^&cãçãcÁr]^&ãá&æã[}•Á^-^¦Ás[ÁsæÁs[||ã[ææ^åÁsa^æ(Á;^æ)ā]* ÁWWWÁ æ)^Ár&ææc°\^åÁs[{][}^}oÁs Ági•oÈ

2. Environmental Test Requirements:

(i) Storage test:

Test	Temperature (deg. centigrade)	Duration (hrs)
Ô[å	−GÍÁÁF	GIÁ ÁEÍÈ
P[c	ÍÍÁÁF	GIÁNÁ€ÈÈ
P°{ãããc ÁÜPÁÌÍÃÁE€ÐÐÍÃ	ÍÍÁÁÁF	GÁÆÈ

 $V^{1} = \frac{1}{2} \cdot \frac{1}{2$

(ii) Thermal cycling:

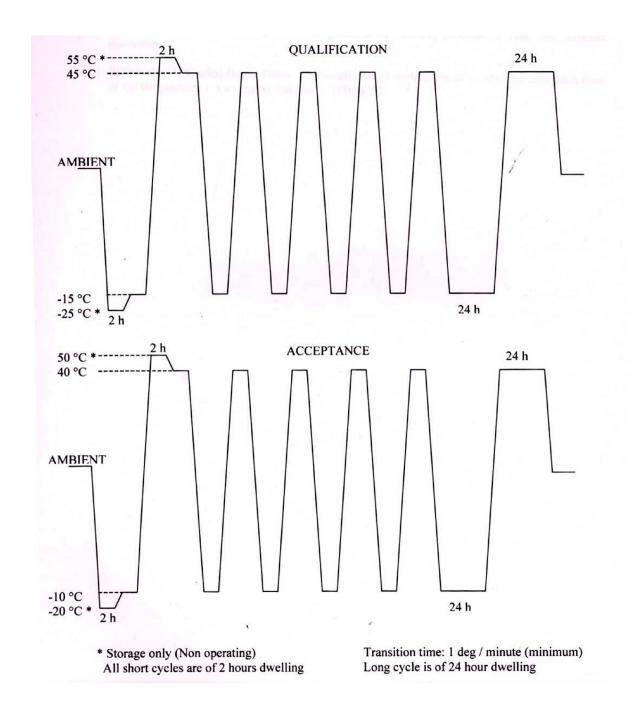
V^{] ÉÄÜæ) * ^ ÁÇÃ^* ÈÁÔD KÁ-GÍ Á Í ÁÉÍ Í

 $V[|\uparrow|aa] \& AG^a \land EOD$ KAG

Ö, ^||Áðā ^ÁœÁ*æ&@Á*¢d^{ ^Á/^{] KÁGÁ@•ÁiÁiÁ; ð; °c^•

V^{]^|æeč|^Ánã^Bà^&|^æe^Ánã,^ KÁFÁs^*ÁÔÐQā,Ç;ā,ā,č{D

Þ[ÞÁ, Á&, &|^• KÁ, Á&, &|^•



Thermal Vacuum Test Profiles

(iii) Adhesion & Abrasion kố Đầ @ • ã[} Ásc) å Áscà¦æ ã[} Ác^ • cÁ[Ás^ Á¸^¦-{ ¦{ ^å Á; } Ás@ Á‱ Ã; ã; ^ • • Áræ [] |^ • Áse Á¸ ^ ¦ Ás@ Á^ |^ çæ) cÁsc { • Ás| Ás@ Ásē]] |ã&æà|^ÁT CŠÁ cæ) å æ å • È

3. Performance Compliance Matrix:

V^• oÁæ) åÁ(^æ-ˇ |^{ ^} o•Á• @æ|Áà^Á&[} åˇ &c^åÁq[Áç^|ã-Ác@Á]^|-[|{ æ) &^Á[Ác@ 8[{][} ^} o•ÉV @Á] ææ; ^c'|•Áq Áà^Á(^æ-ˇ |^åÁæ;Áçæð; * Á• ææ† ^•Á[-Áæà|ã&æ;ð] æ) åÁ₩%}çð[][} ^} oÁrç^|Áæ4^Á*ãç^} ÁTable 1 and 2ÊV @Á₩\$; c'|-|-[*|æ(•Á; -Ác@Á* |æ&;Áð* |*/Á; ^æ-ˇ |^{ ^} o•Á* ææ|Áå^Á; [çãå^åÈ

(i) TEST & MEASUREMENT SEQUENCE OF WITNESS SAMPLES

TABLE 1

Test condition	Witness 1	Witness 2
Initial Test	VI, SR	VI, SR
Post Storage Test	VI, SR	-
Post Thermal cycling	-	VI, SR
Post Adhesion/ Abrasion	VI	-

SR: Spectral Response VI: Visual Inspection All parameters as per specifications in Section I

(ii) TEST & MEASUREMENT SEQUENCE OF FLIGHT COMPONENTS

TABLE 2

No.	Parameter	At substrate level	After coating	After Thermal Cycling
1.	Substrate Material	X (name)	-	-
2.	Physical Dimension : Diameter (mm)	X	_	_
3.	Clear Aperture : Diameter (mm)	_	X	_
4.	Center Thickness (mm)	X	-	-
5.	Wedge Angle (arc min)	X	-	-
6.	Surface flatness ($\lambda = 633 \text{ nm}$)	X	-	-
7.	Surface roughness (A)	X	-	-
8.	Surface quality(scratch/dig)	X	X	X
9.	Spectral response (reflectivity / transmission)	-	X	X

X: Measurement to be done All parameters as per specifications in Section I

4. Test results:

5. Acceptance / Rejection criteria:

6. Quality Control requirements:

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7. Shelf-Life:

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8. Packaging:

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9. Inspection rights:

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10. Quotation:

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11. Deliverables:

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12. Delivery Schedule:

13. Applicable documents :

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Annexure -B

INSTRUCTIONS TO SUPPLIERS

- 1.ÁTenders should be sent in sealed and superscribed envelops with mention of Tender No. date and date of opening. Only one Tender should be sent in each envelope.
- 2.ÁLate and Delayed Tender will not considered at all.
- 3. Duties, Taxes where legally leviable and intended to be claimed should be distinctly shown separately in the Tender.
- 4. a) Your quotation should be valid for 90-120 days from the date. of opening of Tender
 - b) Prices are required to be quoted accordingly to the units indicated in the annexed tender form. When quotations are given in terms of units other than those specified in the tender form, relationship between the two sets of units must be furnished.
- 5. a) All available Technical Literature(s), Catalogue(s) and other data in support of the specifications and details of the item(s) should be furnished along with the offer.
 - b) Approximate net and gross weight of the items offered shall be indicated in your offer. If dimensional details are available the same should indicated in your offer.
 - c) Air freight/Sea freight charges up to Bangalore Airport may be sent along with the offer.



d) **SPECIFICATIONS**:

Items/Equipment offered should strictly conform to our specifications. Deviation, if any should be clearly indicated by the Supplier in their quotation. The Supplier should also indicate the Make/type No. of the stores offered and provide catalogue(s), Technical literature(s) and sample(s), wherever necessary along with the quotations. Test certificates wherever necessary should be forwarded along with the supplies. Whenever options are called for in our specifications, the Supplier should address all such options. Wherever specifically mentioned by us the Supplier could suggest changes to specifications with appropriate response for the same.

- 1.ÁCorrections, if any, must be attested. All amounts shall be indicated both in words as well as in figures. Where there is difference between amounts quoted in words and figures, amount quoted in words shall prevail.
- 2.ÁThe Supplier should supply along with the tender, the Banking information for payment or any other purpose
- 3.ÁA complete set of instruction and operation manual should be supplied.
- 4.ÁFinal performance should be guaranteed.



TERMS AND CONDITIONS OF CONTRACT

1. **DEFINITIONS:**

- a). The terms 'Purchaser' shall mean the Director, Indian Institute of Astrophysics, Bangalore-560 034.
- b). The term 'Supplier' shall mean, the person, firm or company with whom or with which the order for the supply of Items/Equipment is placed.
- c). The terms 'Purchase Order' shall mean the communication signed on behalf of the Purchaser by an officer duly authorized intimating the acceptance on behalf the Purchaser on the terms and conditions mentioned or referred to in the said communications accepting the tender or offer of the supplier for supply of Items/Equipment.

2. **PRICES:**

The price may please be indicated on unit basis only.

Duty Exemption:

Please note that we may issue "Customs duty Exemption Certificate", if acceptable under the Govt. of India notification No. 51/96 valid till 2011.

3. **GUARANTEE AND REPLACEMENT:**

a) The Supplier shall guarantee that the Items/Equipment supplied shall comply fully with the specifications laid down, for material workmanship and performance. The Guarantee should be for a period of one year minimum from the date of supply.



4. **PACKING, FORWARDING AND INSURANCE**:

The Contractor will be held responsible for the stores being sufficiently and properly packed for transport by air, to withstand transit hazards and ensure safe arrival at the destination. The packing and marking of packing shall be done by and at the expenses of the contractor. The Purchaser will not pay separately for transit insurance, all risks in transit being exclusively of the Supplier and the Purchaser shall pay only for such Items/Equipment as are actually received in good condition, in accordance with contract.

5. <u>TEST CERTIFICATE:</u>

Wherever required Test Certificate should be sent before dispatch of the Items.

6. <u>ACCEPTANCE OF ITEMS/EQUIPMENT:</u>

It is expressly agreed that the acceptance of Items/Equipment, for is subject to final approval by the Purchaser, whose decision shall be final.

7. <u>DELIVERY PERIOD:</u>

Delivery is the essence of the contract. The supplier should adhered to delivery schedule as indicated in the Purchase order.

8. **EXTENTION OF DELIVERY TIME**:

As soon as it is apparent that Supplier dates cannot be adhered to, an application shall be sent by the Supplier to the Purchaser. If failure, on the part of the Supplier to deliver the Items/Equipment in proper time shall have arisen from any cause which the Purchaser may admit as reasonable ground for an extension of the time (and his decision shall be final he may allow such additional time as he considers it to be justified by the circumstances of the case). In case of Letter of Credit the banking charges for the LOC amendment will be on suppliers account.



9. **PAYMENT:**

Preference will be given to the supplier whose payment terms is on Site Draft.

10. **SECURITY FOR PAYMENT:**

Successful Supplier will have to furnish in the form of a Bank Guarantee or any other form as called for by the Purchaser towards any payments before supply of Items/Equipment. In case of payment through Letter of Credit the banking charges out side India and Inside India will be on suppliers account.