



**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**  
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**NOTICE INVITING TENDER FOR SET OF RAW MATERIAL IN KIT FORM FOR  
PRODUCTION OF SPV MODULE 330W**

<b>TENDER NO. REIL/MM/21-22/IND/E-PROC./21089</b>	<b>DATED 25.08.2021</b>
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**Important Dates**

Last Date for Sample submission :

**31/08/2021**

Last Date & Time for submitting e- tender:

**06/09/2021 up to 2.00 PM**

Date & Time for opening of e-tenders

**07/09/2021 at 2.00 PM**

**Kindly note that only online bid will be considered against this tender**

**THIS TENDER DOCUMENT CONTAINS**

<b>Sr No</b>	<b>Document</b>	<b>Item Detail</b>	<b>Page No</b>
1	NIT	Notice Inviting Tender	3-4
2	Annexure -I	Terms and Conditions of the tender	5
3	Annexure -II	Process Compliance Form	6
4	Annexure-III	List of Kit items	7
5	Annexure -IV	Technical Specifications	8-15
6	Annexure-V	Format of Commercial Terms and Conditions	16-21
7	Annexure-VI	Format of General Terms and Conditions	22-23
8	Annexure-VII	Authorization Certificate format	24
9	Annexure-VIII	CA Certificate format	25
10	Annexure –IX	Certificate for non blacklisting	26
11	Annexure –X	Undertaking of No Near Relative	27
12	Annexure –XI	Sealed and signed Bid Security Declaration (Duly Notarized on Rs. 100/- Stamp Paper)	28
13	Annexure –XII	Check List	29

## RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

### **NOTICE INVITING TENDER REIL/MM/21-22/IND/E-PROC./21089**

This is a Notice Inviting Tender (NIT) for raw material in kit form for production of SPV Module 330W as per description and terms & conditions specified hereinafter:

#### **1.1 Item Description &Quantity:**

<b>Sr. No.</b>	<b>REIL P/No.</b>	<b>Description</b>	<b>Qty.</b>
01		Set of Raw material in <b>kit form</b> for production of SPV Module 330W with 72 Nos. of Multi crystalline Silicon solar cells. (Details as per annexure-III)	36,000 Sets. (Approx 12 MW)

**1.2 e-Tendering Procedure:** The procurement shall be carried out through submission of online tenders only. No offer in physical form will be accepted and any such offer if received by REIL will be out rightly be rejected. Tender documents can be downloaded from our website [www.reiljp.com](http://www.reiljp.com) or website of CPPP [www.eprocure.gov.in](http://www.eprocure.gov.in). Final bids are to be submitted on website [www.eprocure.gov.in](http://www.eprocure.gov.in). Any changes modification in the tender enquiry will be intimated through above Websites only. Tenderer are therefore, requested to visit our Websites regularly to keep themselves updated.

The bidder should have a valid Digital Signature certificate issued by any of the valid certifying Authorities to participate in the online tender. The bids shall be uploaded in electronic form only through e-tendering system on website [www.eprocure.gov.in](http://www.eprocure.gov.in)

#### **1.3 Bid should be submitted as per following instructions only:**

**Documents (duly signed on each page) to be uploaded in the e-tender portal as per checklist.**

**Note: e-Procurement system does not allow submission of documents after due date of tender. Incomplete form or non-submission of documents to verify details may results into rejection of your offer and no Co Pronunciations shall be done for submission of documents.**

**Bid of only those suppliers who are approved with REIL for required item will be considered against this tender.** New vendor will be considered for development order subject to completion of vendor registration process, sample approval and compliance of techno commercial conditions.

### **PROCEDURE FOR SUBMISSION OF BIDS:**

**The Bid Should Be Submitted in ‘Two Bid’ System:-**

#### **TECHNICAL BID:**

Technical Bid along with tender documents (duly signed on each page) to be uploaded in the e-tender portal. Technical Bid to be opened by the REIL committee

- a. The hard copy of technical bid duly completed and signed on each page, should be submitted along with the “**TECHNICAL BID**” and other supporting documents. Hard copy from the bidders who have participated in e-bid will only be accepted.

- b. Board resolution/ Authorization letter for signing of the bid document from the bidder be submitted.
- c. Prices / Costs of the items ***should not be*** indicated anywhere in the Technical Bid. This should be followed meticulously failing which the bid is liable to be rejected.

The Bid Processing fees and bid security (EMD) are exempted for MSEs Vendors/ Developers registered under NSIC / Udyog Aadhaar Category / Udyam Registration. Valid certificate is to be submitted along with the technical bid. Price Preference is not applicable to MSEs.

**Price Bid:-** Price Bid i.e. item rate BOQ given with tender is to be uploaded after filling all relevant information like basic prices, taxes & duties. The priced BOQ should be uploaded strictly as per the format available with the tender failing which the offer is liable for rejection (renaming or changing format of BOQ sheet will not be accepted by the system)

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**TERMS AND CONDITIONS OF THE TENDER**

1. REIL will have right of pre-dispatch inspection for any or all lot by their own or authorized representative and pre-dispatch inspection report will be part of dispatch document for inspected lot.
2. Order will be placed on L1 bidder. However REIL reserve the right to offer L1 rates to other qualified bidders also.
3. Vendor has to execute running order for pending quantity if any on final rate of this tender, if tender in his favour & rate finalized is lower than running rate.
4. Part-I (Technical and Commercial Offer) to be opened by the REIL committee
5. Part-II (Price Offer): Only those bidders whose offers are technically and commercially acceptable after evaluation of the technical and commercial offer will be opened & evaluated by the committee.
6. Quantity may increase/decrease as per our requirement.
7. Based on the response to the Tender, REIL reserves the right to extend the last date of submission of Bids and to reschedule the opening of "Part-I" & "Part-II". Information regarding extension of date will be available on web site [eprocure.gov.in](http://eprocure.gov.in) only.
8. As per directives of CENTRAL VIGILANCE COMMISSION, GOVERNMENT OF INDIA, One Agent can not represent two or more suppliers or quote on their behalf in a particular tender for single item. If so found at any stage, their offer will not be considered.
9. Risk Purchase: In case of delays in supplies / defective supplies or non fulfillment of any other terms and conditions given in Purchase Order the purchaser may cancel the purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier Vendors do not agree to the above RISK PURCHASE CLAUSE and in eventuality of RISK PURCHASE, may be banned for business with REIL
10. Supplier should not be blacklisted in any PSUs/Government/Semi Government / Quasi Government department in India, as on date of submission of bid. In this regard supplier (manufacturer) has to furnish undertaking that they are not blacklisted by any of the above mentioned organization.
11. REIL reserves the right to postpone the date of receipt of bids, accept or reject any bid without assigning any reason

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**Process Compliance Form**

(Tenders are required to print on their company's letter head and signed, stamp before uploading)

**To**

**M/s. RAJASTHAN ELECTRONICS & INSTRUMENTS LTD.,  
2, KANAKPURA INDUSTRIAL AREA, SIRSI ROAD,  
JAIPUR-302034**

***Sub:-Acceptance to the process related Terms and Conditions for the e-Tendering***

Dear Sir,

**This has reference to the Terms & Conditions for e-Tendering mentioned in the tender No. REIL/MM/21-22/IND/E-PROC./21089**

We hereby confirm the following:-

- 1) The undersigned is authorized representative of the company.
- 2) We have carefully gone through the NIT, Tender Documents and the Rules governing the e-tendering as well as this document.
- 3) We will honor the Bid submitted by us during the e-tendering.
- 4) We undertake that if any mistake occurs while submitting the bid from our side, we will honor the same.
- 5) We are aware that if REIL has to carry out e-tender again due to our mistake, REIL has the right to disqualify us for this tender.
- 6) We confirm that REIL shall not be liable & responsible in any manner whatsoever for my/our failure to access & submit offer on the e-tendering site due to loss of internet connectivity, electricity failure, virus attack, problem with the PC, digital signature certificate or any other unforeseen circumstances etc.

With regards

Signature with company seal

Name-

Designation

E-mail Id:

Mob No:

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**LIST OF KIT ITEMS**

<b>SN.</b>	<b>REIL Part No.</b>	<b>Description</b>	<b>Unit</b>	<b>Qty. Per Module</b>
1	423012	EVA SHEET 1000 MM	SQM	4
2	423020	BACK SHEET 1000 MM	SQM	2
3	424367	SEALANT WHITE 804 (In packing of 600ml)	ML.	120
4	425182	TINNED COPPER 1.1 MM	GM.	250
5	442336	AL.CAPSUL CHANNEL L=1972M	SET	2
6	442337	AL.CAPSUL CHANNEL L=997MM		2
7	442338	ALUMINIUM CORNER		4
8	445122	JUNCTION BOX	NO.	1
9	460055	TOUGH.GLASS 1965X 990 MM	NO.	1
10	760067	TIN COPPER 5.0MM	GM.	32
11	422130	SOLAR CELL $\geq 4.67$ Wp	NO.	72

**Note-** Technical specifications of above items are attached at Annexure-IV.

**Technical specifications****Item No.-1 - EVA SHEET 1000 MM**

S/N	Parameter Required	REIL Specification
1	Visual Appearance	Smooth Surface, Uniform Thickness, No discoloration, Non Stick at Room Temp.
2	Thickness:	>500 Micron
3	Cure:	Fast Cure
4	Length:	100 Linear meters per roll or as mutually agreed
5	Width:	1000 mm + 10mm/ - 0mm
6	Shelf Life:	Minimum six months from the date of manufacturing.
7	Life Time:	Over 20 years based on accelerated weathering tests. Goods should have passed IEC 61215 Ed. 2 (2005) qualification tests for SPV modules.
8	Adhesion:	The EVA should have excellent adhesion to Glass and Backsheet (PVF/PVDF/ Fluoresin).
9	Typical Physical properties of cured EVA after lamination:	
	Ultimate Tensile Strength (MPa):	≥16
	Ultimate Elongation (%):	≥450
	Optical Transmission, after cure (%):	≥ 91
	Water Absorption (25 Oc,24Hrs) (%):	≤ 0.10
	Refractive Index:	≥ 1.480
	UV Cutoff Wavelength (nm):	≤ 360
	Gel Content of cured EVA at 1500 C for 15 minutes of lamination process (%)	≥ 85%. Internal Test Report of Gel Content to be submitted.
	Shrinkage	≤ 0.1%
	Dielectric Strength( KV/mm)	≥ 24
	Bulk Resistivity ( Ohm-cm)	≥ 1X10 <sup>14</sup>
	Melting Point	58o C
	Specific Gravity	9.6gm/ cm <sup>3</sup>
	Humidity	<60% RH
10	Packing:	The EVA sheet may be in close contact with layer to layer, but shall not create a problem in unrolling the sheet or the EVA sheet may be interleaved with release polythene layer/paper (between two layers). There shall not be any dust/ foreign particle/ Hair between the layers of EVA & release sheet. The EVA sheet shall be tightly over wrapped with 0.3 mm thick water proof racking. The whole packing is then kept in 0.15 mm thick opaque polyethylene bag and sealed properly to ensure its storage life. Then two such sealed bags are required to be packed in one carton suitable for Air/ Sea Freight/ Domestic transit.
11	MAKE	Tuffest, Renewsys, Changzhou Sveck, Zhejiang Feiyu or any equivalent IEC/BIS Certified make.



**Item No.-2 - BACK SHEET 1000 MM**

S/N	Parameter Required	REIL Specification
1	Width:	1000 mm
2	Over all thickness:	>320 Micron
3	Colour	White
4	Length of the roll:	100/150 meters
5	Flatness of the sheet:	The sheet shall be flat when the sheet is cut in different length from the roll and kept on a flat surface.
6	Dimensional Stability:	Shall not exceed 1.0% in length or width when the sheet is kept at 160 degree centigrade for 30 minutes.
7	Tensile Strength:	
	a) Length:	190 N/10mm
	b) Cross:	200 N/10mm
8	Moisture Barrier @38°C, 90 % RH ( ASTM F 1249):	1.5 gm/m <sup>2</sup> per day
9	Break Down voltage:	> 10 KV
10	Partial Discharge	>1500V DC
11	Shelf life:	1 Year at 40 degree centigrade
12	Maximum permissible System voltage:	> 1000V
13	Inter layer adhesion ( ASTM D 903)	≥ 5 N/ CM
14	Adhesion strength with EVA (ASTM D903):	≥ 70 N/ CM
15	Material:	PVDF+PET+PVDF+PRIMER
		PVF+PET+PVF+PRIMER
		PVDF+PET+PRIMER(ENCAPSULANT)
		PVF+PET+PRIMER(ENCAPSULANT)
		Fluoresin+PET+Fluoresin+Prime
		Fluoresin/PVDF/PVF(Tedlar)≥25 microns, PET≥225 microns, PRIMER≥10 microns, EVA/PRIMER(ENCAPSULANT)≥50 microns
16	Make	Renewsys, Guangzhou Baojun, Jolywood Suzhou, Crown Advance or any equivalent IEC/BIS Certified make

**Item No.-3 - SEALANT WHITE 804 (In packing of 600ml)**

S/N	Description	Make
1.	Terminal Box Sealant Cartridge of 600 ml Sag-0 mm, Tack free time- 15-20 min, Elongation at break-450 +/- 100%, Tensile strength- 2.2 +/-0.2Mpa, Type of Cure- Neutral, Stable & flexible from -50°C to 180°C. Shelf life- Minimum 1.5 years	Dow Corning Make- PV 804/ Guibao Make- 888 A/, Double Head Eagle or any equivalent IEC/BIS Certified make.

**Item No.-4 - TINNED COPPER 1.1 MM**

S/N	Description	Make
1.	Tinned Copper Interconnect 1.1 mm <ul style="list-style-type: none"> <li>• Width of Ribbon- 1.1mm, +/-0.06mm</li> <li>• Thickness of bare Copper- 0.180 mm +/- 0.005 mm</li> <li>• Thickness of Ribbon- 0.220 mm</li> <li>• Coating of Sn-Pb-Ag- 0.020 mm each side</li> <li>• Hardness- Ultra Soft</li> <li>• Purity of Cu : 99.9%</li> <li>• Solder Type-62% Sn, 36% Pb, 2% Ag Soft, Strength &lt;235 M/mm<sup>2</sup>, elongation&gt;30%, Packing in USP 4 Spool Type</li> </ul>	Tamra Dhatu, Xian Telison, Changshu Fuertong or any equivalent IEC/BIS Certified make

**Item No.-5 – AL.CAPSUL CHANNEL L=1972M**

**Item No.-6 – AL.CAPSUL CHANNEL L=997MM**

**Item No.-7 – ALUMINIUM CORNER KEY**

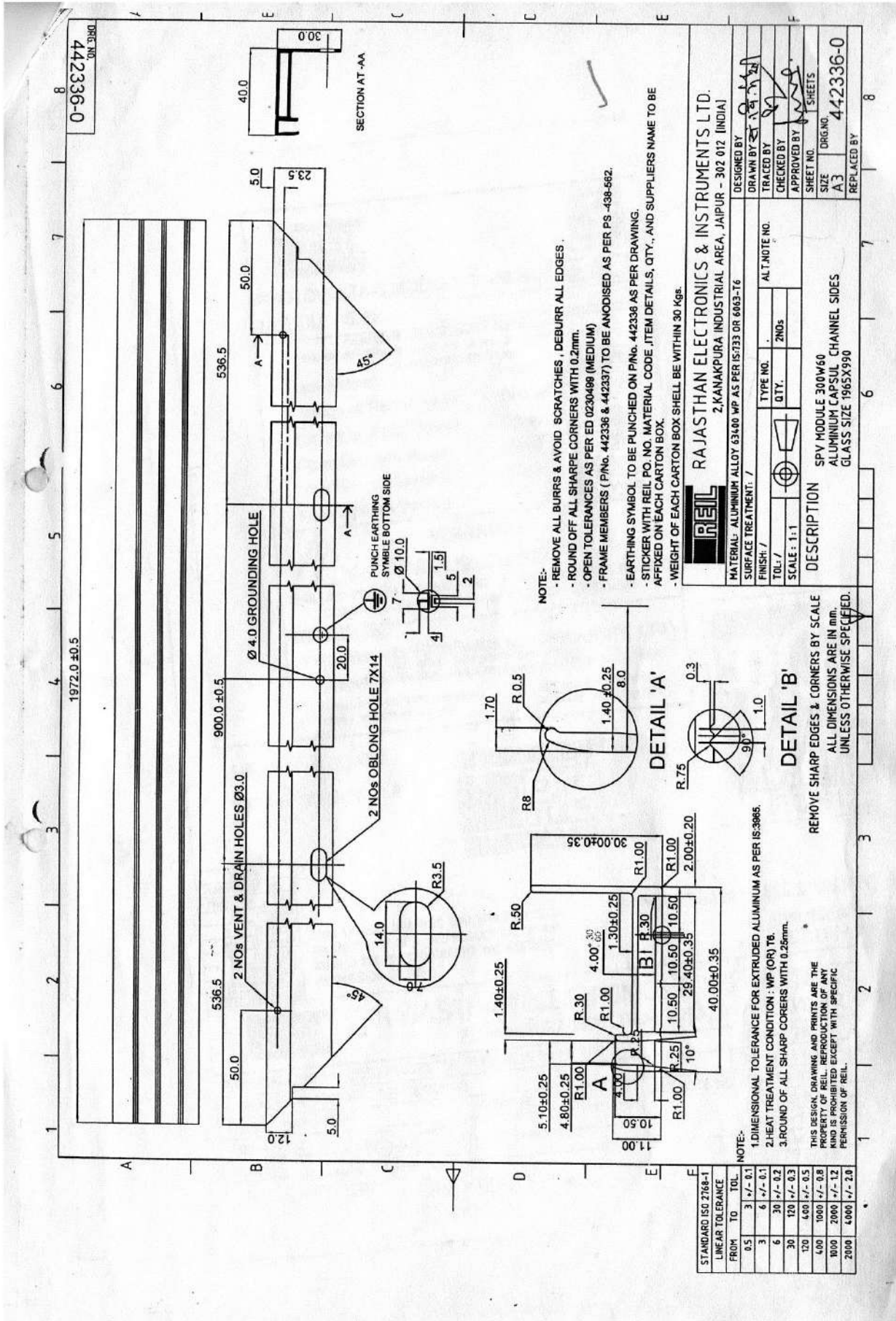
S/ N	Description	Watt	Drawing No.	Make
1.	Al. Channel “A” 1972 mm	330 Watt	442336-0/ Al Frame Extrusion T5	Zhejiang Jiaxing Taihe New Energy, MR Industry, Quality Forging or any equivalent IEC/BIS Certified make
2.	Al. Channel “B” 997 mm		442337-0/ Al Frame Extrusion T5	
3.	Corner Key		442338-0/ Al. Corner	

**Specification of Channel**- Natural Matt finished White Anodized, Anodized Thickness >15 micron

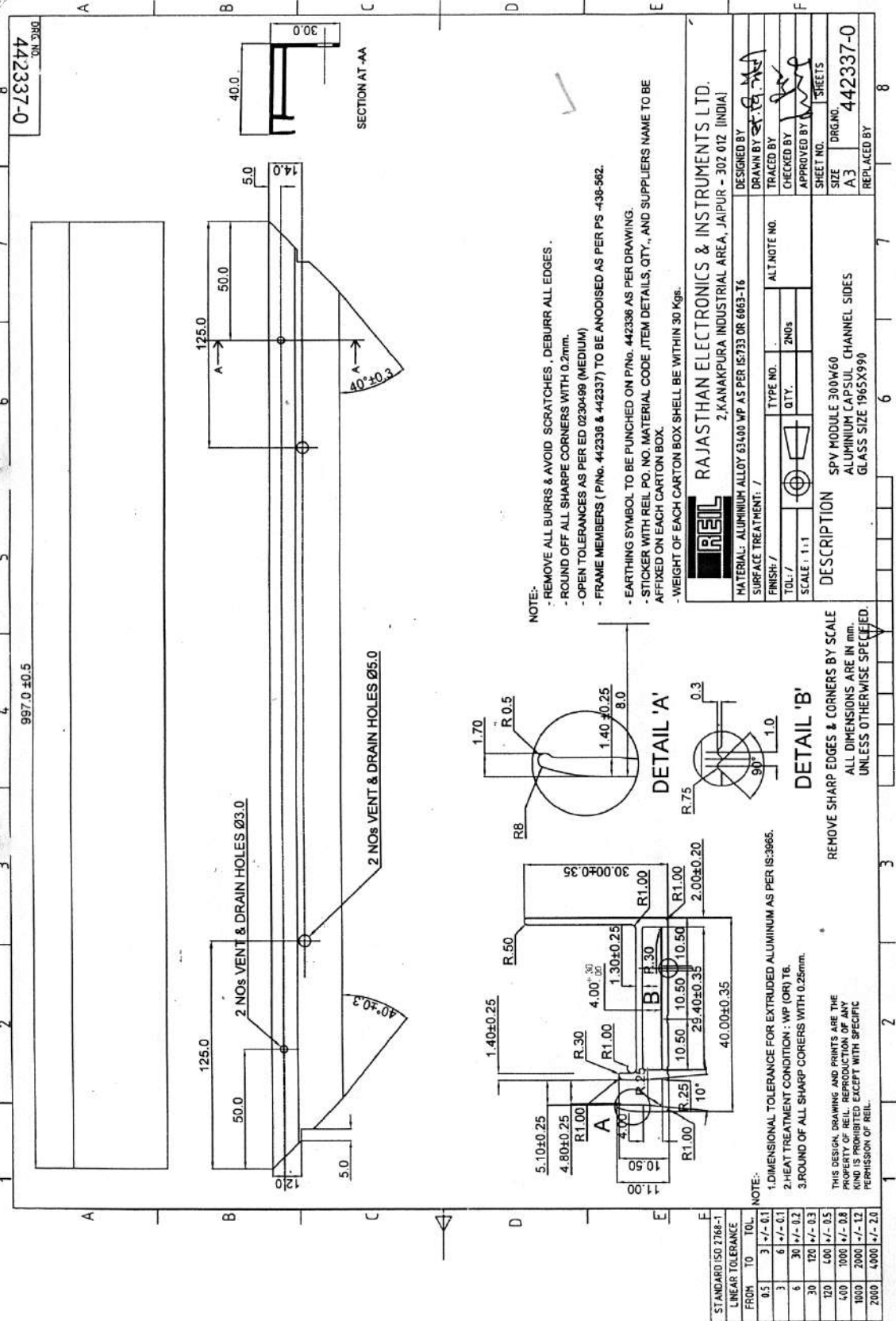
**Specification of Corner Key**- Mill Finished

**Drawings of Aluminium Channels are attached.**

# Drawing of Al. Channel "A" 1972 mm



# Drawing of Al. Channel "B" 997 mm



- NOTE:-**
- REMOVE ALL BURRS & AVOID SCRATCHES, DEBURR ALL EDGES.
  - ROUND OFF ALL SHARPE CORNERS WITH 0.2mm.
  - OPEN TOLERANCES AS PER ED 0230498 (MEDIUM)
  - FRAME MEMBERS ( P/No. 442336 & 442337) TO BE ANODISED AS PER PS -436-562.
  - EARTHING SYMBOL TO BE PUNCHED ON P/No. 442336 AS PER DRAWING.
  - STICKER WITH REIL PO. NO. MATERIAL CODE ,ITEM DETAILS, QTY., AND SUPPLIERS NAME TO BE AFFIXED ON EACH CARTON BOX.
  - WEIGHT OF EACH CARTON BOX SHALL BE WITHIN 30 Kgs.

DESIGNED BY	DR. RAJESH K. SHARMA
TRACED BY	DR. RAJESH K. SHARMA
CHECKED BY	DR. RAJESH K. SHARMA
APPROVED BY	DR. RAJESH K. SHARMA
SHEET NO.	1
SIZE	A3
DRG. NO.	442337-0
REPLACED BY	

<b>REIL</b> RAJASTHAN ELECTRONICS & INSTRUMENTS LTD. 2, KANAKPURA INDUSTRIAL AREA, JAIPUR - 302 012 (INDIA)	
MATERIAL:	ALUMINIUM ALLOY 6340 WP AS PER IS:733 OR 6063-T6
SURFACE TREATMENT:	7
FINISH:	7
TOL:	1:1
SCALE:	1:1
TYPE NO.	2N05
QTY.	2N05
ALT. NOTE NO.	
DESCRIPTION SPV MODULE 300W60 ALUMINIUM CAPSUL CHANNEL SIDES GLASS SIZE 1965X990	

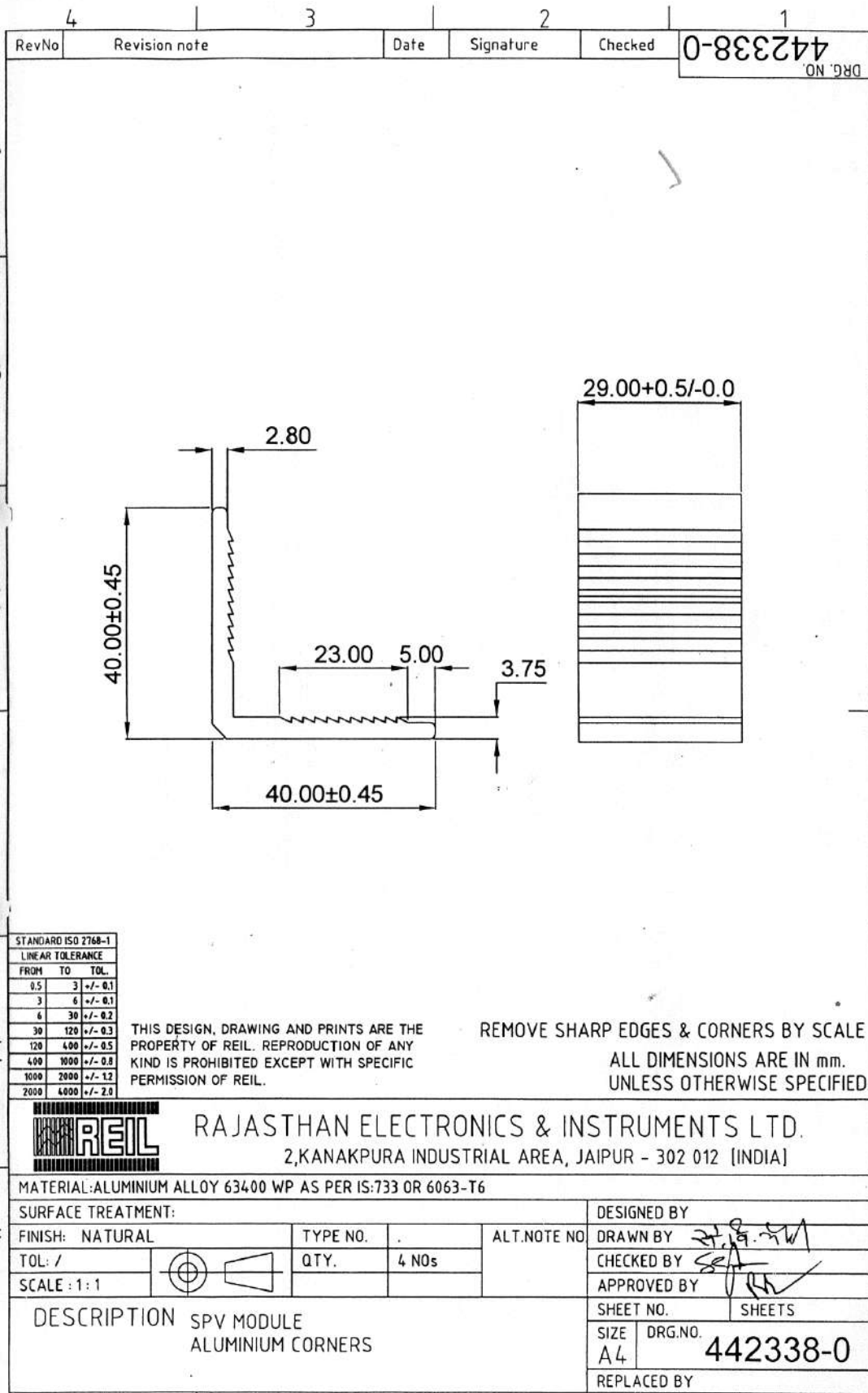
STANDARD ISO 2768-1	
LINEAR TOLERANCE	
FROM	TO
0.5	3
3	6
6	30
30	120
120	400
400	1000
1000	2000
2000	4000

NOTE:-  
 1. DIMENSIONAL TOLERANCE FOR EXTRUDED ALUMINIUM AS PER IS:3985.  
 2. HEAT TREATMENT CONDITION : WP (OR) T6.  
 3. ROUND OF ALL SHARPE CORNERS WITH 0.25mm.

THIS DESIGN, DRAWING AND PRINTS ARE THE PROPERTY OF REIL. REPRODUCTION OF ANY KIND IS PROHIBITED EXCEPT WITH SPECIFIC PERMISSION OF REIL.

REMOVE SHARP EDGES & CORNERS BY SCALE  
 ALL DIMENSIONS ARE IN mm  
 UNLESS OTHERWISE SPECIFIED.

## Drawing of Corner Key



**Item No.-8 – JUNCTION BOX**

S/N	Description
1.	<p>Junction Box (with mounted Cable, Connectors &amp; Diodes) as per following specifications.  <b>Make : Shanghai Yongem</b>            Product Type : SL-15A3-1 with 20 TLV 045 Diode Bypass Diode 3 Nos. 3 20A 45V, 1 Meter X 2 Cables of 4 sq. mm (Black),            1 pair of S 418 connectors</p> <p style="text-align: center;">OR</p> <p>Junction Box (with mounted Cable, Connectors &amp; Diodes) as per following specifications:  <b>Make : Bizlink-Sunbolts S412 Soldering</b>            Type, IP 67, 20A, TUV 1000V certified, 4 Rails, 3 X HY 20SQ040 (20A) Diodes, 1 Meter X 2 Cables of 4 sq. mm (Black), 1 pair of S 418 connectors, Part No. S412-1C1218-5101</p> <p style="text-align: center;">OR</p> <p>Junction Box (with mounted Cable, Connectors &amp; Diodes) as per following specifications:  <b>Make : Dhash PV, Type-DSJB03,</b>            Rated Current : 15A, Rated Voltage : 1500 VDC, Protection Degree : IP 68 , Cover Press fit &amp; water proof, Flame Class : UL94-V0, 5VB, Temp. Range : -40°C.....+90°C, Wire Range : 2.5....6.0 MM<sup>2</sup> , Cable marking 0740M AIL/UMIT : Uniflex Cables Indai Unicable/Dhash brand 1.8KV DC EBXL XLPRO/LPQ 120°C” H1Z2Z2-K” Solar Cable EN50618, ZH – FRLS1C X 4 sqm 2019, Cable length : 1.0 Mtr., MC4 Connector TT02, Diode 3 Nos. 20SQ045-I</p> <p style="text-align: center;">OR</p> <p>Junction Box (with mounted Cable, Connectors &amp; Diodes) as per following specifications:  <b>Make :MAGMA, Product Type- MP 04 IP 68,</b>            with 20SQ45 diodes 3 Nos., Rated Current : 15A, Rated Voltage 1000 V DC , cover Press fit &amp; water proof , cable 120 cm x 2 Nos., 4.0 mm<sup>2</sup> black marking on cable : 0407 M AIL/LINIT, Uniflex cables india, one pair of black colour with sealing water proof connection with MC4 Connector M01 +/- marking.</p> <p>or any equivalent IEC/BIS Certified make</p>

**Item No.-9 – TOUGH.GLASS 1965X 990 MM**

UV stabilized and self primed ethylene vinyl acetate Toughened Glass for encapsulation of Photovoltaic Cells in the manufacture of SPV Modules:

S/N	PARAMETER REQUIRED	REIL SPECIFICATION
1	Type	Fully tempered, low iron <100 ppm, extra clear textured glass.
2	Size Tolerance:	Length +/- 1.0mm, Width +/- 1.0mm
3	Thickness:	3.2 mm +/- 0.2mm,
4	Localised warp & overall bow	The overall bow in the glass plates shall not exceed by 0.3% on the total length, when the glass plate is placed on a flat surface, concave side down and measure the deviation with feeler gauge or dial indicator as per ASTM standard designation C 1048-92 or its equivalent.
5	Iron content:	Fe <sub>2</sub> O <sub>3</sub> content shall be less than 0.02
6	Solar Transmittance	a) Shall not be less than 91% when measured in actual sun light by placing the glass plate perpendicular to the sun's rays through an air mass of 1.5. Applicable ASTM standard C 1036-91 or its equivalent.
		b) The glass plates shall have 91.4% to 91.6% transmittance in the wavelength range of 500 nanometers to 770 nanometers of the solar spectrum.
7	Adhesion:	a) The glass plates shall perform best in the critical near infrared region, in the wave length range of 600 nanometers to 900 nanometers of the solar spectrum where the crystalline photovoltaic cells are most responsive to the sun's energy. The minimum transmission of the glass plates shall be 91.4% at the wavelength of 800 nanometers of the solar spectrum.
		b) The glass plates shall also provide a sharper ultra violet transmission cut-off at 340 nanometers. The glass plates shall also be a superb shortwave ultraviolet absorber for the betterment of solar photovoltaic module life.
8	a) Transmittance:	Spectral transmittance of 2.63% to 68.75% in the wave length range of 300 nanometers to 350 nanometers.
	b) Non-solarizing:	The glass plates shall be able to resist discolouration due to Solar Ultraviolet radiation and retain its capacity to transmit a maximum degree of solar energy.
9	Refractive Index	1.5150 (measured at sodium "D" line).
10	Temper:	The glass plates shall be fully tempered and flat to satisfy impact, strength and fragmentation test requirements as per ASTM C-1048-92, ANSI Z 97.1 and CPSC16 CFR 1201 category-II break pattern (49 FR 7107, February 27, 1984) or its equivalent standard.
11	Impact:	The glass plate shall not break by one shot of 227 gms steel ball when dropped from one meter height. Applicable standard for safety is ANSI Z 97.1 - 1984 (R-1994) and CPSC16 CFR 1201 or its equivalent standard.
12	Strength:	The glass plates shall not break at the uniform load of 150 Kgs.
13	Angle:	All the glass plate corners shall have 90 degree angle and the sides shall be parallel to each other.
14	Color	The glass plates shall be water white, ultra clear & transparent, without any kind of color tinge when viewed from the edges.
15	Finish:	a) All the edges of the glass plates shall be smooth and must be grind for safety & to avoid injury while handling.

		b) All the glass plates shall be free from scratches, digs, white or coloured patches, edge chips, airbubble, dust or dirt, gaseous inclusions, waves, lines, and knots. The applicable standard is ASTM - C 1036-91 or its equivalent.
16	Product marking:	The supplier shall ensure that the tempered glass plates are permanently labeled with the emblem/logo/ trade mark of the manufacturer, type of glass, conformance of Tempering/ safety standard as applicable at "BOTTOM RIGHT CORNER". Leaving 10 mm gap from the edges.
17	Packing:	a) The glass plates shall be packed in such a way that the glass plate's surfaces are not damaged and the packing is suitable for sea freight. b) The glass plates shall be packed in a suitable water proof packing before making a final crate for shipment.
18	Catalogues:	The supplier shall submit all relevant technical information in the form of data sheets/brouchers alongwith the quotation.
19	Standards:	The supplier shall also supply the photocopies of the latest applicable ASTM standards such as C1036-91,C1048-92, ANS1 Z97.1 and CPSC16 CFR 1201 or applicable German standard DIN18361 or any other standard as the case may be which will be equivalent to ASTM/DIN standard alongwith the quotation. The Glass must withstand fire test as per IEC 61730-1 & IEC 61730-2.
20	MAKE	BOROSIL, Wuxi Mangao, CNBM (Yixing) New Energy or any equivalent IEC/BIS Certified make

**Item No.-10 – TINND COPPER 5.0MM**

S/N	Description	Make
1.	<p>Tinned Copper Interconnect 5.0 mm</p> <ul style="list-style-type: none"> <li>• Width of Ribbon- 5.0mm, +/-0.07mm</li> <li>• Thickness (Total) - 0.250 mm - 0.260 mm</li> <li>• Hardness – Half hard</li> <li>• Bare Copper – 0.230 mm +/- 0.005 mm</li> <li>• Solder Type-60% Sn, 40% Pb</li> <li>• Solder Thickness - 0.02 mm to 0.03 mm</li> <li>• Solder ability – Electro Plated</li> <li>• Weight of Spool - &lt;=5.0 Kg</li> <li>• Packing form : Reel/ Spool Form</li> </ul>	Tamra Dhatu, Xian Telison, Changshu Fuertong,



**Item No.-11 – SOLAR CELL ≥ 4.67 Wp**

<b>S/N</b>	<b>PARAMETER REQUIRED</b>	<b>REIL SPECIFICATION</b>
1	Size	156*156 ± 1.0mm / 156.75*156.75 ± 1.0mm for > =4.67 W Solar Cells
2	Type of Cell	5 Busbar Multi / Mono Crystalline Silicon Solar Cell
3	Thickness of Cell (including paste on back/ front)	200 +/- 20 µm
4	Bending (Bow )	≤ 2.0mm
5	Front Bus-Bars	Width ≥ 0.8 mm)
6	Back Bus-Bars	Back - Silver Continuous/Discontinuous with Aluminium BSF ,Width ≥ 1.0mm
7	Distance between the centre lines of the Bus-Bars	To be specified by the manufacturer & should be same for Front & Back Bus-Bar
8	Linear Shift of Screen from Center of Cell	≤ 0.25 mm on either side
9	Radial Shift of Screen from the Edge of the Cell (Front/ Back)	≤ 1°
10	Anti Reflection Coating	Preferred - PECVD Silicon Nitride (Deep Blue Color)
11	VISUAL	
	A) Cell should be free from	
	· Any crack/micro crack/pin holes	
	· Surface chip on the front surface of the Cell.	
	· Edge Chipping	
	· Grid lines missing in the cell.	
	· Cut in the grid lines of size more than 1 mm on 2 or more lines.	
	· Smudges of the paste on the front side of the cell	
	· Visible mismatch in the colour/pattern of the cell.	
	· Visible spot/patches on front side of the cell.	
	· Any other visually observable marks, scratch or mechanical damage.	
12	Packing of Solar Cell	Packing of solar cells shall be export worthy to avoid micro cracks / cracks during transit. Preferably 100 nos. of solar cells should be vacuum packed & then packed tightly in a shock proof thermocole box. One box should contain solar cells in power band of 0.05W.
13	Information	The supplier shall provide information regarding type of cell, crystal structure, resistivity, orientation, thickness and wattage of cells packed in each box on a sticker, and the same shall be affixed on each box.

All specified parameters are at STC (25<sup>0</sup> C Ambient, 100mW / cm<sup>2</sup> irradiance and AM 1.5 Spectrum)

<b>S.No.</b>	<b>PARAMETER REQUIRED</b>	<b>SPECIFICATION</b>
1	Open Circuit Voltage	> 0.625 Volts
2	Short Circuit Current	>9.05 Amps
3	Peak Power Pmax	≥ 4.67 Watts
4	Voltage at Peak Power Vmax	≥ 0.515 Volts
5	Minimal shunt resistance (Rsh)	≥ 4 Ohms
6	Maximal series resistance (Rs)	≤ 12.5 mili Ohms
7	Temperature coefficients	Please mention the values in %/K in offer
	- for Pmax	~ -0.40 %/K
	- for Voc	~ -0.32 %/K
	- for Isc	~ +0.050 %/K
8	Fill Factor	≥ 0.78
9	PID	Cells should be PID free
10	Make	BHEL, Jupiter, Venus, Jiangsu, Zhejiang Sunflower or any equivalent IEC/BIS Certified make

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**Commercial Terms & Conditions**

S/N	DESCRIPTION	REIL COMMERCIAL TERMS & CONDITIONS	OFFER STATUS*	
			COMPLIED/ NOT COMPLIED	DEVIATION IF ANY
1	Technical compliance	Our standard technical specifications and approved make are as per annexure-IV for reference. You may offered for same or other make having same specification and applicable standard. Minor size variation is acceptable if it suits to our requirement. If your offered make is other than our approved make than sample approval before submission of bid is must. Sample for minimum 03 no. Module requirement should reach us before last date of sample submission i.e. 30.08.2021 along with detailed technical specifications.		
2	Fixed Prices	Bidder should quote the fixed prices for entire delivery period on FOR REIL, Kanakpura Jaipur basis(Inclusive of packing forwarding, Freight, Insurance & Unloading of material).		
3	GST	The GST if any is to be clearly mentioned in BOQ. Bidders shall indicate clearly GST as applicable for the quoted items in BOQ. In the absence of clarity of these, any claim at a later date will not be entertained. Any changes in Taxes after award of the contract will not be considered except such are those, which are imposed by Govt., notification within the contractual delivery. Seeking price amendments for change in GST due to crossing of turnover limits will not be considered under any circumstances.		
4	Delivery Schedule	The quantity is to be supplied within 2 weeks from our delivery clearance up to March, 2021. Minimum lot size will be 3000 Sets or 1 MW at the interval of 15 days. This is our tentative requirement, actual delivery on the basis of our Delivery Clearance.		
5	Supply Tolerance against P.O.	Plus or Minus 5% tolerance in supply quantity & corresponding value is allowed. Quantity may increase/decrease of required item as per our requirement.		
6	Payment Terms *	95% payment on 45 days clean credit from receipt of goods at REIL & balance 5% within 45 days from date of receipt of PBG. The value of PBG will be 5% of total contract value for warranty period of 1 year. (Loading factor for payment terms deviation as per Note:-2)		

7	Validity	Offers must be valid for at least 45 days from the date of opening of the tender.		
8	Test/Qualification certificate	All consignments must be accompanied by a test report and quality certificate from the manufacturer of the product indicating compliance with the required specification. The supplies are liable for outright rejection by REIL without such certificate.		
9	Sample	The manufacturer should submit at least three sets of sample kit for evaluation of unapproved make items. Last date of sample submission is 30.08.2021.		
10	Splitting Of Tender Quantity Between Bidders	REIL reserve the right to split the quantity and award one two or more vendors as per the production/ project requirement.		
11	Offer	Part-I Technical and Commercial Offer is to be opened by the REIL committee. Offer should be submitted strictly as per attached Annexure. Offer received without proper format may not be considered.		
12	Price Offer	Part-II Price bid of only those bidders whose offers are technically and commercially acceptable after evaluation of the technical and commercial offer will be opened & evaluated by the committee.		
13	Order Placed	Order will be placed on L1 bidder. L1 bidder will be considered per set basis. However, rate for each item is required for calculation purpose. However REIL reserve the right to offer L1 rates to other qualified bidders also. Vendor has to execute running order for pending quantity if any on final rate of this tender, if tender in his favour & rate finalized is lower than running rate.		
14	Non Blacklisting	Supplier should not be blacklisted in any PSUs/Government/Semi Government / Quasi Government department in India , as on date of submission of bid. In this regard supplier (manufacturer) has to furnish undertaking that they are not blacklisted by any of the above mentioned organization.		
15	Date Extension	Based on the response to the e Bid Tender, REIL reserves the right to extend the last date of submission of Bids and to reschedule the opening of "Part-I" & "Part-II". Information regarding extension of date will be available on web site eprocure.gov.in only. REIL reserves the right to postpone the date of receipt of bids, accept or reject any bid without assigning any reason		
16	Risk Purchase	In case of delays in supplies / defective supplies or non fulfillment of any other terms and conditions given in Purchase Order the purchaser may cancel the purchase Order in full or part thereof, and may also make the purchase of such material from elsewhere / alternative source at the risk and cost of the supplier.		

17	Liquidated Damages Clause	If supplier fails to deliver the modules as per the accepted delivery schedule, a penalty shall be imposed and realized @ 1% per week subject to maximum of 10% of delayed supply after 2 weeks of delayed supply, REIL may invoke risk purchase along with applicable L/D.		
18	Legal or arbitration issues	Bidder having any legal or arbitrary issues pending with REIL directly or indirectly are not eligible to quote in the tender.		
19	Udhyam Registration	As per recent Govt. guideline, manufacturer/service provider has to take Udhyam Registration to avail the benefits of MSME. Attached your copy of Udhyam Registration with this tender.		
20	Acceptance of Reverse auction	REIL reserve the right to adopt reverse auction at any point of time after technical evaluation, at its discretion. REIL may also open the price bid at its discretion.		

Note :- 1. Offer Status is to be mentioned in form of Complied or Not Complied. If it is not complied then please mention deviation in deviation column.

\*Note:- 2. Loading Factors for Payment Terms -

Loading factors as detailed below will be added to the quoted price (basic) to evaluate the lowest quote for non-compliance of REIL payment term.

S. No.	Standard Terms and Condition	Deviation Terms	Loading Factor
1.	Payment Terms: x% on y days clean credit	x% on y days credit through Bank or through LC	5% on quoted rate
2.	Payment Terms: x% on y days clean credit	x% on z days clean credit	Interest charges @24% for (y-z) days

# Bank charges shall be to respective accounts. REIL bank charges to REIL account and beneficiary bank charges to beneficiary account. All credit periods will be calculated from date of material receipt at site. Note: Offer/ s with payment terms other than the payment terms indicated at clause No. 9 or Deviated Payment terms with loading indicated at Note 2 above are liable for rejection.

**SIGNATURE WITH STAMP**

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**GENERAL TERMS AND CONDITIONS****1) AMENDMENT**

Except as otherwise provided herein, no addition, amendment to or modification of the Contract shall be effective unless it is in writing and signed by and on behalf of both parties.

**2) SEVERABILITY**

In the event that any or any part of the terms conditions or provisions contained in the Contract shall be determined invalid, unlawful or unenforceable to any extent such term, condition or provision shall be severed from the remaining terms, conditions and provisions that shall continue to be valid and enforceable to the fullest extent permitted by law.

**3) CONFIDENTIAL TREATMENT**

It is understood and agreed that data, know-how and other such proprietary information that was provided or will be provided by either party, will remain confidential.

**4) RELATIONSHIP OF THE PARTIES**

REIL relationship with Supplier will be that of a Business Associate, and nothing in this Contract shall be construed to create a relationship, joint venture, partnership.

**5) CONSTITUTION OF THE FIRM**

(5.1) The bidder should be registered under any of the following categories as on date of floating of tender.

- A. Company
- B. Sole Proprietor firm
- C. Partnership firm
- D. Joint Venture (JV)

(5.2)

- A. In case of company, tender document must be signed and sealed by Chief Executive of Company or any person authorized by CEO or by any person authorized by resolution of board of directors. Memorandum of Association and notarized Power of Attorney should be uploaded with tender.
- B. In case of Sole Proprietor firm, the bidder must submit (Original/Notarised) affidavit certifying the Sole Proprietorship of firm before date of opening of bid. The bid document must be signed and sealed by authorised person.
- C. In case of Partnership firm this firm should be registered with registrar of firms. The bid document must be sealed and signed by any authorized person. The authorization given in partnership deed or other notarized document must be uploaded.
- D. In case of Joint Ventures, Signed and Sealed bid document by any authorized person duly authorized by all JV members must be uploaded. Original copy or duly notarized copy of JV agreement must be uploaded.
- E. In case of society signed and sealed bid document must be uploaded before tender opening date. Power of Attorney (Original/Notarised) in favour of tender signatory must be submitted.

**6) INDEMNITY**

REIL and the Supplier will indemnify, defend, and hold harmless each other and its divisions, successors, subsidiaries and affiliates, the assigned of each and their directors, officers, agents and employees from and against all liabilities, claims, losses, and damages of any nature, including, without limitation, all expenses (including attorney's fees), cost, and judgments incident there to REIL and REIL's obligations under this indemnity will survive the expiration, termination, completion or cancellation of this Contract or an order hereunder.

**7) FORCE MAJURE**

REIL and the Supplier shall not be under any liability to each other or to any other party in any way whatsoever for the destruction, damage, delay or any other matters of the nature arising out of reasons beyond the control of either party, including but not limited to a war, rebellion, civil commotion, strikes, lock-outs and industrial disputes; fire, explosion, earthquake, Act of God, flood, drought, bad weather, requisitioning or other act or order by any government department, council or other constituted body, and similar other reasons.

**8) RESTRICTION ON EMPLOYMENT**

Both the parties have agreed that they will not recruit any members of staff of other party directly or indirectly.

## **9) ARBITRATION**

All disputes arising out of this contract and questions relating to its interpretation etc. shall be referred to the contract committee headed by ED/GM and if not resolved shall be referred to the sole arbitration of Managing Director, Rajasthan Electronics & Instruments Ltd., for his decision, which shall be final and binding on both parties. The Venue of Arbitration proceedings shall be at Jaipur. In case of any dispute the decision of Managing Director, Rajasthan Electronics & Instruments Limited, Jaipur will be final and binding on both the parties. Further dispute, if any, will be settled in the court of law at Jaipur jurisdiction only.

## **10) RISK AND COST**

In the event of failure on the part of the contractor in the supply, installation and commissioning of goods and services, which is required in view of the pending orders, REIL shall be entitled to cancel the remaining order and procure the outstanding quantity through other sources at risk and costs of the contractor.

## **11) TERMINATION OF CONTRACT:**

REIL shall be entitled to terminate this Contract, in the event of any or all or any of the following events, with a written notice of 15 days :-

- i. has abandoned the Contract
- ii. has without valid reason failed to supply the goods in respect of the contract or has suspended the progress of supply of equipment
- iii. persistently fails to execute the Contract in accordance with the Contract or persistently neglects to carry out its obligations under the Contract without just and proper cause

## **12) DURATION OF CONTRACT**

This contract shall take effect on the day of execution of this contract and shall endure up to warranty period.

## **13) GOVERNING LAW**

This contract and its validity, interpretation and performance will take effect and be governed under the laws of India. Venue in any action in law or equity arising from the terms and conditions of this contract shall be the court of appropriate jurisdiction in Jaipur, Rajasthan (India)

## **14) SPLITTING OF TENDER QUANTITY BETWEEN BIDDERS**

REIL reserve the right to split the quantity and award on two or more vendors as per the production/project requirement. The following norms would be adopted in case of split of quantity:

If the lowest quoting vendor is an approved vendor and the second lowest is also approved vendor to REIL, 100% of the tender quantity would be split amongst the approved vendors only in the ratio of 70:30 at the rate and terms applicable in the tender, keeping in view the objective that the per unit landed cost to REIL in case of purchase from L1 or L2 approved vendor remains same. In exceptional cases quantity may be split between L1, L2 and L3 in the ratio as per the requirement on case to case basis.

## **15) PREFERENCE TO MSE**

1. 25% of the tendered quantity is earmarked for MSE suppliers in this tender
2. Out of the 25% tendered quantity reserved for MSE suppliers, 20% shall be earmarked for procurement from MSE owned by SC/ST entrepreneurs.
3. In case MSE vendor participating in the tender quotes within the price band of L1+15%, they will be allowed to supply the portion of the requirement subject to acceptance of L1 price by MSE vendor. In case of more than one such MSE, the supply shall be shared proportionately.
4. CA certificate as per annexure-VII is to be submitted in support of your firm falling under MSME.

## **16) INDIGENOUS MANUFACTURER**

Indigenous manufacturer shall be given preference for promotion of indigenous products to maximum subject to meeting quality standards and specifications.

## **17) NO NEAR RELATIVE CLAUSE**

The bidder should give a certificate that none of his/her near relative is working in REIL as defined below along with their technical bid as per the attached Annexure . In case of proprietorship firm certificate will be given by the proprietor. For partnership firm certificate will be given by all the partners and in case of limited company by all the Directors of the company excluding Government of India/Financial institution nominees and independent non-Official part time Directors appointed by Govt. of India or the Governor of the state and full time Directors of PSUs both state and central. Due to any breach of these conditions by the company or firm or any other person the tender will be cancelled and Bid Security will be forfeited at any stage whenever it is noticed and REIL will not pay any damage to the company or firm or the concerned person. The company or firm or the person will also be debarred for further participation in REIL's Tender. The near relatives for this purpose are defined as:- (a) Members of a Hindu undivided family. (b) They are husband and wife. (c) The one is related to the other in the manner as father, mother, son(s) & Son's wife (daughter in law), Daughter(s) and daughter's husband (son in law), brother(s) and brother's wife, sister(s) and sister's husband (brother in law).

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**Authorization Certificate**

To

Date

DGM (MM),  
Rajasthan Electronics & Instruments Limited,  
2, Kanakpura Industrial Area,  
Jaipur-302034  
Rajasthan

Dear Sir,

We M/s. ....are authorizing M/s. .... to submit tender document in reference to your tender no **REIL/MM/21-22/IND/E-PROC./21089 Dated 25-08-2021** for raw material in **kit form** for production of SPV Module 330W on our behalf. They are authorize to carry out communication and negotiations on our behalf. Order shall be placed on them for supply of material.

On behalf of company :

Authorized Person details :

Signature :

Name of Company:

Name :

Signature :

Designation :

Name :

Landline No.:

Designation :

Mobile No.:

Landline No. :

Mobile No. :

Seal :

Seal :



**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**CA CERTIFICATE**

To

Date :

DGM (MM),  
Rajasthan Electronics & Instruments Limited,  
2, Kanakpura Industrial Area,  
Jaipur-302034  
Rajasthan

Dear Sir,

It is certified that M/s ..... is falling under MSE category as per guidelines contained in the provisions of the MSMED Act,2006 and notification No. S.P. 1722(E) dated 05.10.2006 and recent Government guidelines having Udyog Adhar no. ....

We also certify that the investment in plant and machinery (Imported and indigenous) as on date ..... is Rs..... and turnover for FY 2020-21 is ----- . .

Tendered items are being manufactured by tenderer M/s -----

Chartered Accountant  
Firm name:-

Signature with seal

UDIN .....

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**CERTIFICATE FOR NON BLACK LISTING**

To

Date

DGM (MM),  
Rajasthan Electronics & Instruments Limited,  
2, Kanakpura Industrial Area,  
Jaipur-302034  
Rajasthan

Dear Sir,

We M/s. ....confirm that we are not blacklisted in any PSUs/Government/Semi Government /Quasi Government department in India , as on date of submission of bid. This undertaking is submitted to the best of my knowledge. If at any stage it is found wrong then REIL may take necessary action against us.

On behalf of company .....

Name and Designation

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**UNDERTAKING OF NO NEAR RELATIVE**

To

Date

DGM (MM),  
Rajasthan Electronics & Instruments Limited,  
2, Kanakpura Industrial Area,  
Jaipur-302034  
Rajasthan

Dear Sir,

I.....S/o..... R/o.....  
hereby certify that none of my relatives) as defined in the tender document is/are  
employed in REIL unit as per details given in tender document. In case at any stage, it  
is found that the information given by m is false/incorrect, REIL shall have the absolute  
right to take any action as deemed fit/without any prior intimation to me.

On behalf of company .....

Name and Designation

**[Duly Notarised on Rs. 100/- Stamp Paper]**

**Bid Security Declaration**

In reference to “REIL” Tender for “ \_\_\_\_\_ [ Subject of Tender] “ published vide NIT/Bid Document No : \_\_\_\_\_ dated: \_\_\_\_\_, We, \_\_\_\_\_ [Name of the bidder]” hereunder referred to as Bidder”.

- (a) understand that, according to tender conditions, bids must be supported by a Bid Security Declaration.
- (b) hereby submit a declaration that the bid submitted by the undersigned, on behalf of the Bidder, shall not be withdrawn or modified during the period of bid validity as mentioned in the tender document.

We, \_\_\_\_\_[Name of the bidder], also accept the fact that in case the bid is withdrawn or modified during the period of its validity or if \_\_\_\_\_[Name of the bidder] fail to sign the contract in case the work is awarded to us or fail to submit a performance security before the deadline defined in the tender document/letter of award, then \_\_\_\_\_[Name of the bidder] shall be suspended for participating in all government Tenders, for a period of 5 year from bid due date of above referred tender.

We \_\_\_\_\_[Name of the bidder] also understand that this Bid Securing Declaration shall cease to be valid if We are not the successful Bidder, upon the earlier of:

- (a) the receipt of your notification of the name of the successful Bidder; or
- (b) thirty days after the expiration of the validity of our Bid

Signed: \_\_\_\_\_ (insert signature of person whose name and capacity are shown)  
in the capacity of: \_\_\_\_\_ (insert legal capacity of person signing the Bid Securing Declaration)  
Name: \_\_\_\_\_ (insert complete name of person signing he Bid Securing Declaration)

Duly authorized to sign the bid for an on behalf of \_\_\_\_\_[Name of the bidder]

Dated on \_\_\_\_\_ day of \_\_\_\_\_, 2021 (insert date of signing)

Company Seal (where appropriate)

**RAJASTHAN ELECTRONICS & INSTRUMENTS LIMITED, JAIPUR**

Tender ref. REIL/MM/21-22/IND/E-PROC./21089

**Check List for tender document to be uploaded on E- Procurement website**

<b>Sr. No.</b>	<b>Required Documents</b>	<b>Submitted (Y/N)</b>
1	Sealed and signed Notice Inviting Tender.	
2	Sealed and signed Terms and Conditions of the Tender(Annexure-I)	
3	Sealed and signed process compliance form. (Annexure-II)	
4	Sealed and Signed List of Kit items Technical Specifications (Annexure – III)	
5	Sealed and Signed Technical Specifications (Annexure – IV)	
6	Sealed and signed commercial terms & conditions of tender (Annexure-V)	
7	Sealed and signed general terms & conditions of tender (Annexure-VI)	
8	Authorization certificate as per annexure VII.	
9	Sealed & signed CA Certificate (Annexure VIII)	
10	Sealed & signed under taking as per annexure-IX from manufacture for nonblack listing.	
11	Sealed & signed under taking of No Near Relative (Annexure X)	
12	Sealed and signed Bid Security Declaration (Duly Notarised on Rs. 100/- Stamp Paper) (Annexure-XI).	
13	Check list for tender document to be uploaded on E- Procurement website (Annexure-XII).	

For any queries regarding tender, please contact:

**Name:** Shubham Patel  
**Designation:** Engineer  
**Contact No:** 0141- 2471083  
**E-mail id-** [mm@reil.co.in](mailto:mm@reil.co.in)

For further escalation, please contact:

**Name:** Mr. Deepak Gupta  
**Designation:** Deputy General Manager  
**Contact no:** 0141-2471083  
**E-mail id-** [deepak.gupta@reil.co.in](mailto:deepak.gupta@reil.co.in)