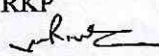
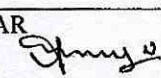


 BHEL-EPD	ELECTROPORCELAINS DIVISION BENGALURU - 560012, INDIA Purchase Specification Group : Photovoltaic Module				SPEC. NO: PS-901-01-0001	
					REV. 04	JOB NO.-STD.
					PAGE 01 OF 02	
ALUMINIUM FRAMES & CORNER KEY - 3.2 mm						
1.0 SCOPE: 1.1 Supply of Aluminum frame, Corner key with electrolytically formed anodic coatings on Aluminum & Aluminium alloy parts which are exposed to direct action of climatic elements (viz sun, wind, rain, dust, salt, water etc.,)						
2.0 GENERAL: 2.1 Aluminum parts to be anodized are made of Aluminium alloy (63400/6063) as per IS-733 and supplied in W P /T6 (temper condition). 2.2 End use of component is for Solar Photovoltaic module framing. 2.3 Anodizing process shall be as per Type-I: IS-7088 2.4 Type of sealing shall be as per IS-7088 (Clause 7)						
3.0 DRAWING: The Aluminum frame elements shall comply with the dimensional and other requirements given in the drawing as follows: a) 3-988-04-002-10 Aluminum Edge Frame b) 4-988-04-001-10 Main Extrusion c) 4-988-04-006-10 Corner Key						
4.0 PACKING: 4.1 Frame members are to be wrapped with polythene cover or craft paper to avoid scratches 4.2 Frame members to be supplied shall be neatly stacked and packed in carton boxes. 4.3 Number of frames per carton box is to be decided so as the weight of the each carton box shall not be more than 30 kg. 4.4 The carton boxes as above shall be further neatly palletized for mechanized handling. The total weight of each pallet shall not exceed 1000 kg.						
5.0 VISUAL REQUIREMENTS: 5.1 The anodic coating shall be continuous, smooth, adherent, uniform in appearance and shall be free from powdery areas, loose films and discontinuities such as breaks, scratches or other damages.						
Revision (04): Issued By Prepared By Checked By Approved By Date						
5th Issue SPV Eng. RKP  NAR  CNP  30.03.17						

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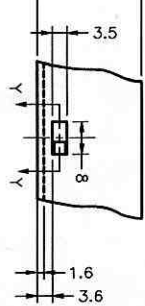
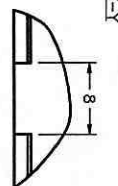
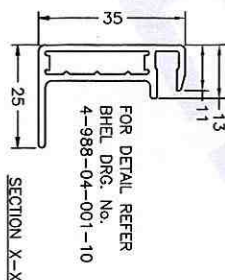
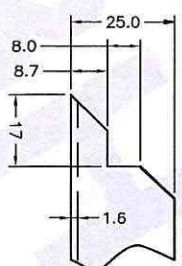
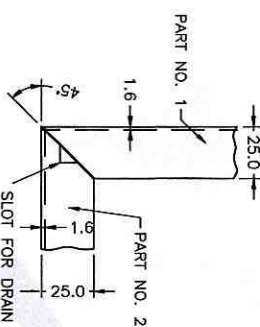
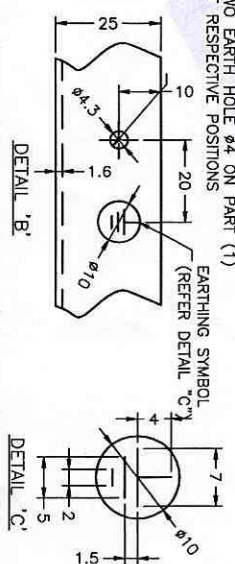
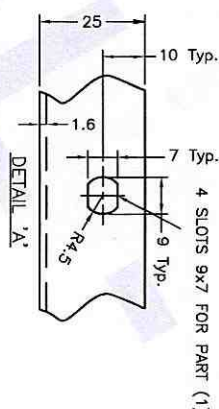
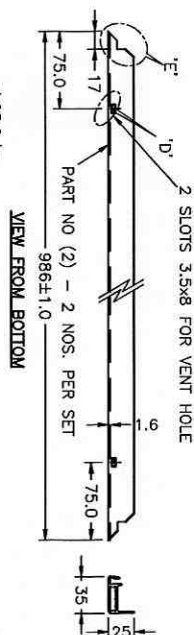
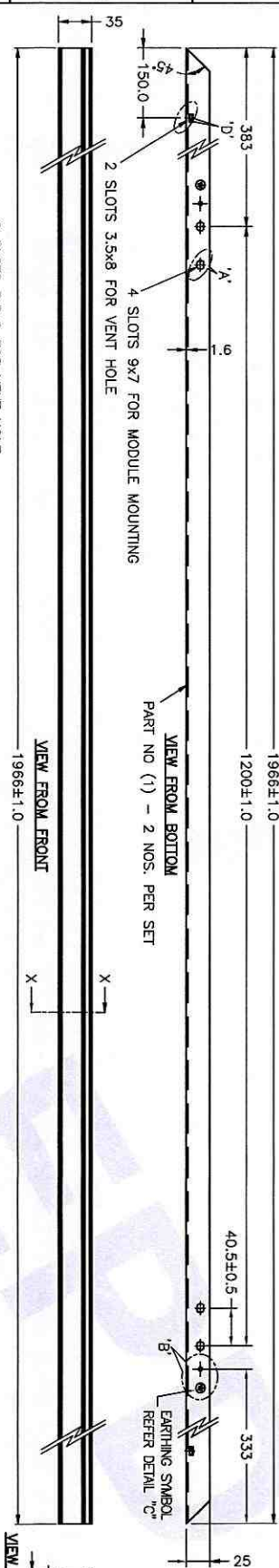
		 BHEL-EPD	ELECTROPORCELAINS DIVISION BENGALURU – 560012, INDIA Purchase Specification Group : Photovoltaic Module		SPEC. NO: PS-901-01-0001 REV. 04 JOB NO.-STD. PAGE 02 OF 02	
COPY RIGHT AND CONFIDENTIAL The information on this document is the property of Bharat Heavy Electricals Limited. It must not be used directly or indirectly in anyway detrimental to the interest of the company.		6.0 SURFACE PREPARATION REQUIREMENTS: 6.1 After anodic coating, the parts shall comply with dimensional requirements of the applicable drawings. a) Extent of surface to be anodized : As per drawing b) Anodic Coating Thickness: 18±3 microns as per IS:1868 (AC 15 grade), Table 1 c) Surface Texture: Natural matte finish d) Continuity: As per IS-8375 e) Insulation: As per IS-8554, the break down potential of the coating shall not be less than 1000 V DC. f) Corrosion resistance: Each anodized and sealed member when tested as per IS-9000 (part XI) as per procedure 1 (5% salt solution) shall not show more than 5 isolated spots or pits (0.8 mm dia max). 7.0 NOTE: 7.1 Supplier shall produce test certificate from reputed labs for Sl. nos. 6.1 (d), (e) and (f) which shall not be older than one year as on the date of material supply. 7.2 Supplier shall ensure the clearance between the corner key and rectangular slot provided in the main frame extrusion for an interference fit, before commencement of mass manufacturing and also before dispatch of the material to BHEL. 8.0 TEST METHODS: VISUAL AND DIMENSIONAL 8.1 Parts selected in accordance with the sampling plan and tested for visual and dimensional checks shall comply with the BHEL Specification. 9.0 COATING THICKNESS: 9.1 Parts selected as per sampling plan and tested for coating thickness in accordance with IS-6012 shall comply with clause 6.1 (b). 10.0 SAMPLING PLAN: 10.1 Sampling Size: Single Sampling Plan as per IS-10673, Special Inspection Level S-4, AQL 1.0				
		Revision (04): 5 th Issue	Issued By SPV Eng.	Prepared By RKP	Checked By NAR	Approved By CNP Date 30.03.17

FIRST ANGLE PROJECTION

DRG. No.
3-988-04-002-10

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PART NO (3) - 4 NOS. PER SET
FINISH : NATURAL

NOTE:

1. REMOVE ALL BURRS & AVOID SCRATCHES. DEBURR ALL EDGES FOR PART 1, 2 AND 3.
2. ROUND OFF ALL SHARP CORNERS WITH 0.2 mm
3. OPEN TOLERANCES AS PER IS:2102 PART 1 (MEDIUM)
4. FRAME MEMBERS (PART 1 & 2) TO BE ANODISED AS PER PS-901-01-0001.
5. COATING THICKNESS OF ANODISATION = 18±5 MICRONS (FOR PART 1 & 2).
6. WALL THICKNESS AFTER ANODISATION PROCESS = 1.4 mm (MINIMUM).
7. EARTHING SYMBOL TO BE PUNCHED ON PART 1 INDICATED IN THIS DRAWING REF. DATA

FOR DETAIL REFER
BHEL DRG. No. 4-988-04-006-10

SCALE NTS

REV.	DATE	ALTERED	REV.	DATE
		CHECKED		
		APPROVED	00	

ITERED
ECKED
PROVED

NAME	SIGN	DATE

BHARAT HEAVY ELECTRICALS LIMITED, ELECTROPORCELAINS DIVISION, BENGALURU		CARD CODE
TITLE		No. of

ALUMINIUM EDGE FRAME WITH CORNER KEY
SPV MODULE NO. - L24300P

SHTS	01
SHT No.	01

FORM No. A3-04

A3 SIZE

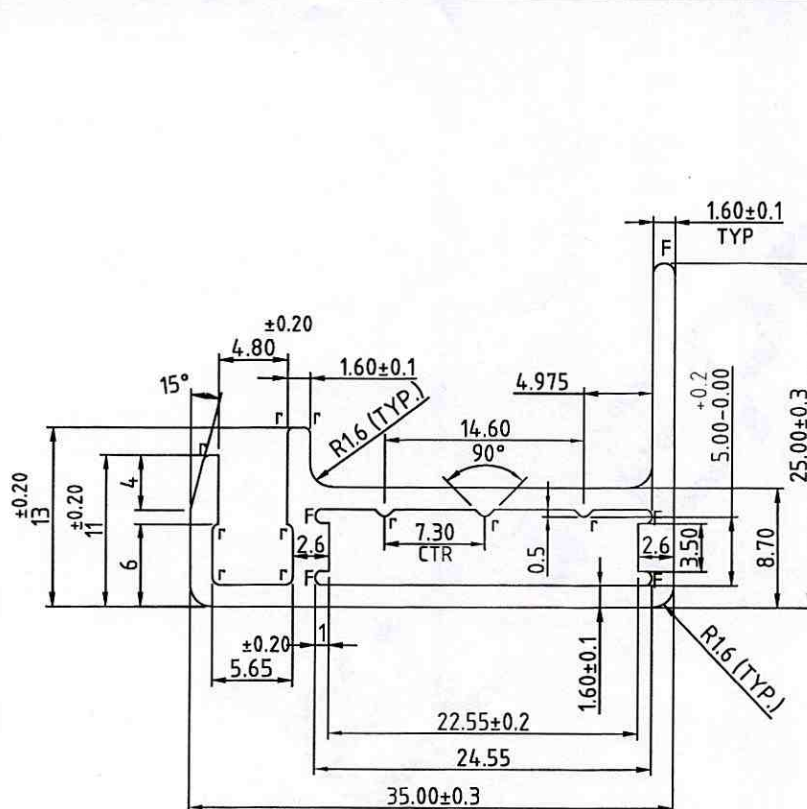
FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED	RKP	REV.	DATE	ALTERED	ADDITIONAL INFORMATION
01	280318	CHECKED	NAR	00		CHECKED	
		APPROVED	CNP			APPROVED	
Vendor extrusion Approval by BHEL Deleted				FIRST ISSUE			STATUS OF DRAWING
Project 0.5 mm Dimension inside corner key cavity included.							DISTRIBUTION OF PRINTS

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SCALE=1:1

MATERIAL : ALUMINIUM ALLOY - 63400 WP AS PER IS:733 (OR) 6063-T6.

NOTE :

1. ALL UNSPECIFIED WALL THICKNESS - 1.6 ± 0.1 .
2. $r-0.50$, F - FULL RADIUS.
3. DIMENSIONAL TOLERANCES FOR EXTRUDED ALUMINIUM AS PER IS:3965.
4. HEAT TREATMENT CONDITION : WP (OR) T6.
5. ESTIMATED WEIGHT Kg/m = 0.474.
6. ROUND OFF ALL SHARP CORNERS WITH 0.25 mm RADIUS.

REF. DRG.NO.

REMARKS

ITEM NO.

DESCRIPTION

STD.

MATERIAL CODE

MATERIAL SPECN.

A

C

UNIT

UNIT WL(Kg)

QUANTITY

SIGN & DATE


BHARAT HEAVY ELECTRICALS LIMITED,
ELECTROCELAINS DIVISION, BENGALURU

 DRN
 CKD
 APPD

NAME

SIGN.

DATE

No. OF VAR

RKP

NAR

CNP

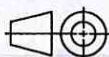
28.03.18

28.03.18

28.03.18

INVENTORY NO.

 DEPT.
 SPV
 CODE
 901

 FOR UNSPECIFIED TOLERANCES
 REFER IS 2102

 SCALE
 2 : 1

WEIGHT (Kg)

REF. TO ASSY. DRG.

ITEM NO.

No. OF ITEM

TITLE

MAIN EXTRUSION FOR
SPV MODULE

DRAWING NO.

4-988-04-001-10

REV.

01

SHEET NO. 01

NO. OF SHEETS 01

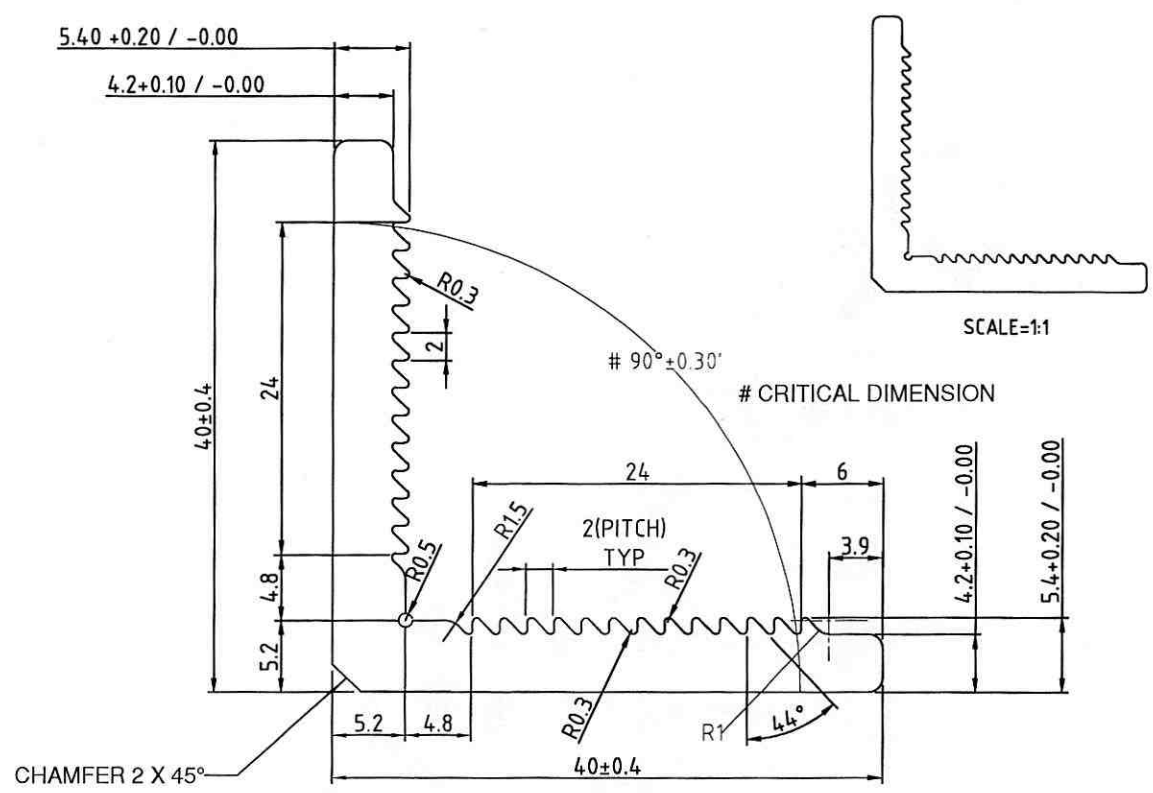
A4 SIZE

FIRST ANGLE PROJECTION

(ALL DIMENSIONS ARE IN MM)

REV.	DATE	ALTERED	REV.	DATE	ALTERED	ADDITIONAL	
		CHECKED			CHECKED	INFORMATION	
		APPROVED	00		APPROVED	STATUS OF	
			FIRST ISSUE			DRAWING	
						DISTRIBUTION	
						OF PRINTS	

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MATERIAL : ALUMINIUM ALLOY - 63400 WP AS PER IS:733 (OR) 6063-T6.

NOTE :

- 1. DIMENSIONAL TOLERANCES FOR EXTRUDED ALUMINIUM AS PER IS:3965.
- 2. HEAT TREATMENT CONDITION : WP (OR) T6.
- 3. ESTIMATED WEIGHT Kg/m = 0.958
- 4. ROUND OFF ALL SHARP CORNERS WITH 0.25 mm RADIUS.

REMARKS	ITEM NO.	DESCRIPTION	STD.	MATERIAL CODE	A	UNIT	UNIT Wt.(Kg)	
				MATERIAL SPECN.	C		QUANTITY	

SIGN & DATE	NAME	SIGN.	DATE	No. OF VAR
	DRN RKP		28.03.18	
	CKD NAR		28.03.18	
	APPD CNP		28.03.18	

DEPT. SPV	FOR UNSPECIFIED TOLERANCES	SCALE	WEIGHT (Kg)	REF. TO ASSY. DRG.	ITEM NO.	No. OF ITEM
CODE 901	REFER IS : 2102	2 : 1				

INVENTORY NO.	TITLE	DRAWING NO.	REV.
	CORNER KEY EXTRUSION FOR SPV MODULE	4-988-04-006-10	00
		SHEET NO. 01	NO. OF SHEETS 01