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|------------------|--|--|----------|---------------|---|
| GAUTAM<br>SOLAR  |  | Gautam Solar Private Limited<br>IPQC Check Sheet |          |               | Document No.<br>GSPL/IPQC/IPC/003<br>Issue Date<br>01/12/2024<br>Rev. No./Rev.Date<br>01/30-08-2025 |
| Date: 2025-11-16 |  | Time:  | Shift: A | Po.no.: 23456 |   |

| Sr.No. | Stage                                    | Check point                                    | Quantum of Check<br>Sample Size   Frequency | Shift<br>Acceptance Criteria  | Monitoring Result               | Remarks,If any   |
|--------|--|--|---|---|---------------------------------|------------------|
| 1      | Shop Floor                               | Temperature                                    | once per shift                              | Temp. ≤53°C   | Time: 08:00 AM - 25.08°C        | Controlled       |
|        |  | Humidity                                       | once per shift                              | RH ≤60%   | Time: 08:00 AM - 43% RH         | Stable           |
| 2      | Glass Loader                             | Glass dimension(L*W*T)                         | once per shift                              | As Per PO   | 2376.26mm x 1127.49mm x 2.04mm  | Match PO         |
|        |  | Appearance(Visual)                             | once per shift                              | Glass Broken, Crack, Scratches and Line mark not allowed                  | No Scratches/Cracks             | Clear            |
| 3      | EVA/EPE Cutting                          | EVA/EPE Type                                   | once per shift                              | As per approved BOM   | EPE304                          | OK               |
|        |  | EVA/EPE dimension(L*W*T)                       | once per shift                              | As per Specification  | 2377.69mm x 1124.77mm x 0.72mm  | Within tolerance |
|        |  | EVA/EPE Status                                 | once per shift                              | Not allowed dust & foreign particle/Cut & non Uniform Embossing /Mfg Date | Uniform Embossing               | —                |
| 4      | Eva/EPE Soldering at edge(if Applicable) | Soldering Temperature and Quality of Soldering | Once per shift                              | As per specification and Should be properly soldered ( 400 ± 20°C)        | Time: 08:15 AM - Temp: 389.91°C | Controlled       |
| 5      | Cell Loading                             | Cell Manufacturer & Eff.                       | once per shift                              | Refer Process Card  | Longi Solar                     | OK               |
|        |  | Cell Size(*W)                                  | once per shift                              | Refer Process Card  | 182.64mm x 105.06mm             | OK               |
|        |  | Cell Condition                                 | once per shift                              | Free From dust,finger spot,color variation                                | No Damage/Cracks                | OK               |
|        |  | Cleanliness of Cell Loading Area               | once per shift                              | No unwanted or waste material should be at Cell Loading Area              | Clean Surface                   | No defects       |
|        |  | Verification of Process Parameter              | once per shift                              | ATW Stringer Specification  | Taping Proper                   | Good             |
|        |  | Cell Cross cutting                             | once per shift                              | Both side cutting should be equal.  | -0.06mm                         | Pass             |
|        |  | Verification of Process Parameter              | once Month                                  | ATW Stringer Specification  | No Shift                        | Good             |

|   |  |   |   |  |  |            |
|---|--|---|---|--|--|------------|
| 6 | Tabber & stringer                              | Visual Check after Stringing                                  | once<br>1 String/TS/Shift                       | TS Visual Criteria   | TS01A: OK, TS01B: OK, TS02A: OK, TS02B: OK, TS03A: OK, TS03B: OK, TS04A: OK, TS04B: OK   | Pass       |
|   |  | EL Image of Strings   | once<br>1 String/TS/Shift                       | TS EL Criteria   | TS01A: OK, TS01B: OK, TS02A: OK, TS02B: OK, TS03A: OK, TS03B: OK   | OK         |
|   |  | String length   | once<br>1 String/Stringer/ shift                | Refer Process Card   | TS01A: 1163.7mm, TS01B: 1162.6mm, TS02A: 1162.8mm, TS02B: 1163.5mm, TS03A: 1162.9mm, TS03B: 1162.8mm, TS04A: 1163.0mm, TS04B: 1162.4mm | Match PO   |
|   |  | Cell to Cell Gap  | once<br>1 String/Stringer/ shift                | Refer Process Card   | TS01A: OK, TS01B: OK, TS02A: OK, TS02B: OK, TS03A: OK, TS03B: OK, TS04A: OK  | No defects |
|   |  | Verification of Soldering Peel Strength                       | 2 cell each stringer Front & Back.<br>per shift | Peel Strength ≥1N  | TS01A: OK, TS01B: OK, TS02A: OK, TS02B: OK, TS03A: OK, TS03B: OK, TS04A: OK, TS04B: OK   | No defects |
|   |  | String to String Gap  | once<br>per shift                               |  | TS01A: 2.23mm, TS01B: 2.57mm, TS02A: 2.62mm, TS02B: 2.59mm, TS03A: 2.79mm, TS03B: 2.25mm   | Acceptable |
|   |  | Cell edge to Glass edge distance (Top,bottom & sides)         | once<br>per shift                               | Refer Process Card & Module Drawing                            | TS01A: OK, TS01B: OK, TS02A: OK, TS02B: OK, TS03A: OK, TS03B: OK, TS04A: OK, TS04B: OK   | No defects |
|   |  | Soldering Peel Strength b/w Ribbon to busbar interconnector   | once<br>per shift                               | ≥2N  | TS01A: OK, TS01B: OK, TS02A: OK, TS02B: OK, TS03A: OK, TS03B: OK, TS04A: OK, TS04B: OK   | Clear      |
| 7 | Auto bussing , layup & Tapping                 | Terminal busbar to edge of Cell                               | once<br>per shift                               | 132 Cell module drawing, Refer Module Drawing- GSPL/N144/G/001 | Refer Module Drawing   | No defects |
|   |  | Soldering Quality of Ribbon to busbar                         | Every 4h<br>per shift                           | No Dry/Poor Soldering  | Busbar Peel: 22.61N  | Good       |
|   |  | Top & Bottom Creepage Distance/Terminal busbar to Glass Edge. | Every 4h<br>per shift                           | Creepage distance should be as per process card/Drawing        | Top: 12.03mm   Bottom: 12.28mm   | Pass       |
|   |  | Verification of Process Parameter                             | once<br>per shift                               | Specification for Auto Bussing                                 | Auto Bussing   | Acceptable |
|   |  | Quality of auto taping  | Every 4h<br>per shift                           | Taping should be proper,no Cell Shifting allowed               | Proper   | OK         |
| 8 | Auto RFID Logo/Barcode placing (If Applicable) | Position verification of RFIDs Logo /Barcode placing          | Every 4h<br>per shift                           | Should not be tilt   | Tilt: 0.63mm   | OK         |

|    |                                       |  |  |  |   |                  |
|----|---------------------------------------|--|--|--|---|------------------|
|    |                                       | EVA/EPE Type   | once per shift                                       | EVA  | EVA PLASTOMER                           | As per BOM       |
| 9  | EVA/EPE cutting                       | EVA/EPE dimension(L*W*T)                             | once per shift                                       | As per Specification   | 2378.37mm x 1125.21mm x 0.67mm          | OK               |
|    |                                       | EVA/EPE Status                                       | once per shift                                       | Not allowed dust & foreign particle/Cut & non Uniform Embossing /Mfg Date      | Uniform Embossing                       | Good             |
|    |                                       |  |  |  |   |                  |
| 10 | Back Glass Loader                     | Glass dimension(L*W*T)                               | once Per shift                                       | As per PO  | 2376.2mm x 1128.13mm x 2.03mm           | OK               |
| 11 | Auto Busbar Flatten (If Applicable)   | No. of Holes/ Holes dimension                        | once Per shift                                       | 3 hole with dimension 12mm ± 0.5mm   | As per spec                             | As per spec      |
|    |                                       | Visual Inspection                                    | 5 pieces per shift                                   | No crack/ breaks in busbar & properly flattened without bending and twisting   | S.No: 10027, 10049, 10087, 10088, 10097 | Good             |
| 12 | Pre lamination EL & Visual Inspection | EL Inspection and Visual Inspection                  | 5 pieces per shift                                   | Pre EL Inspection Criteria, Pre EL Visual Criteria                             | S.No: 10013, 10018, 10047, 10067, 10092 | Good             |
| 13 | String Rework Station                 | cleaning of rework station/Soldering iron and sponge | once per shift                                       | Rework Station should be Clean/Sponge should be Wet                            | No Residue - CLEAN                      | No contamination |
|    |                                       | Soldering Iron Temp.                                 | once per shift                                       | 400±30°C   | Time: 08:00 - Temp: 22.75°C             | Good             |
| 14 | Module Rework Station                 | Method of Rework                                     | once per shift                                       | As per WI (GSPL/P/WI/012)  | As per spec                             | OK               |
|    |                                       | Cleaning of Rework station/Soldering iron sponge     | once per shift                                       | Rework Station should be Clean/Sponge should be Wet                            | CLEAN - No EVA Residue                  | Good             |
|    |                                       | Soldering Iron Temp.                                 | once per shift                                       | 400±30°C   | Time: 08:00 - Temp: 24.02°C             | Good             |
| 15 | Laminator                             | Monitoring of Laminator Process parameter            | once per shift                                       | Process Parameter of jinchen Laminator   | As per spec                             | OK               |
|    |                                       | Cleaning of Diaphragm/release sheet                  | once 24h   | Diaphragm/Release sheet should be clean,No EVA residue is allowed              | No Residue - CLEAN                      | No defects       |
| 16 | Auto Tape Removing (If Applicable)    | Peel of Test b/w: EVA/Backsheet EVA/EPE/POE to Glass | All position All laminators to be covered in a month | E/G ≥60N/cm E /Bs≥60N/cm   | As per spec                             | No defects       |
|    |                                       | Gel Content Test                                     |  | 75to 95%   | As per spec                             | Clear            |
|    |                                       | Visual Check after Lamination                        | 5 pieces per shift                                   | Check Tape Removing Should be smooth and No visual bubble Should be found.     | S.No: 10009, 10027, 10032, 10058, 10063 | OK               |
| 17 | Auto Edge Trimming                    | Trimming Quality                                     | 5 pieces per shift                                   | Excess layer from the glass edge should be removed,Uneven Trimming not allowed | Even Trim: 0.77mm deviation             | OK               |
|    |                                       | Trimming Blade life cycle                            | once per month                                       | Worn out not allowed   | Even Trim: -0.49mm deviation            | Good             |

|    |  |   |                    |   |   |              |
|----|--|---|--------------------|---|---|--------------|
| 18 | 90° Visual Inspection                  | Visual Inspection                                 | 5 pieces per shift | Post Lam Visual Inspection Criteria   | S.No: 10006, 10019, 10081, 10091, 10099 | OK           |
| 19 | Framing                                | Glue uniformity & continuity in frame groove      | 1 set per shift    | Should be uniform, Back sealing should be proper  | As per spec                             | OK           |
|    |  | Short Side Glue Weight                            | once Per shift     | Till as per Specification   | Potting Weight: 19.45g                  | OK           |
|    |  | Long Side Glue Weight                             | once Per shift     |   | Potting Weight: 20.56g                  | Good         |
|    |  | Anodizing Thickness                               | once Per shift     | ≥15 micron  | As per spec                             | —            |
| 20 | Junction Box Assembly                  | Junction Box(Connector Appearance & Cable Length) | once Per shift     | As per Process Card & module drawing  | JB Position: 0.05mm shift               | —            |
|    |  | Silicon Glue Weight on the bottom (g)             | once Per shift     | 21±6 gm   | Potting Weight: 18.48g                  | —            |
|    |  | Max Welding time                                  | once Per shift     | As per Specification  | As per spec                             | Clear        |
| 21 | Auto JB Soldering                      | Soldering current                                 | once per shift     | As per Specification  | As per spec                             | Pass         |
|    |  | Soldering Quality                                 | once per shift     | Welding area should be fully covered & checked by twizzer,no yellowing allowed            | As per spec                             | —            |
| 22 | JB Potting                             | A/B Glue Ratio                                    | once Per shift     | As per Specification  | As per spec                             | —            |
|    |  | Potting material weight                           | once Per shift     | 21±6 gm   | EPE304                                  | Confirmed    |
|    |  | Nozzle Changing                                   | once every 6h      | Should be changed after 6 hours or when found issue of damage or extra amount dispensing. | As per spec                             | —            |
| 23 | OLE Potting Inspection (If Applicable) | Visual Check                                      | once 5 piece       | Potting should be properly filled, and mounting hole should be as per drawing.            | As per spec                             | No defects   |
| 24 | Curing                                 | Temperature                                       | once per shift     | 25±3■   | Time: 08:00 - Temp: 24.55°C             | Within Limit |
|    |  | Humidity  | once per shift     | ≤50%  | Time: 08:00 - RH: 55%                   | Acceptable   |
|    |  | Curing Time(H)                                    | once Per shift     | ≥4 hours  | As per spec                             | Pass         |
| 25 | Buffing                                | Corner Edge-Buffing belt condition                | 5 pieces per shift | Should not be sharp & No worn out   | FF: 78.27%                              | Clear        |

|    |                         |  |                    |   |   |                  |
|----|-------------------------|--|--------------------|---|---|------------------|
| 26 | Cleaning                | Module should be free from Tape,Dust,Dirt,EVA/Backsheet residue,Corner Burrs,Glue residue on glass,backsheet,JB,Wire etc.) | 5 pieces per shift | Post Lam Visual Criteria  | S.No: 10001, 10005, 10028, 10042, 10100 | No contamination |
| 27 | Flash Tester            | Ambient Temp.  | once per shift     | 25±3■   | Time: 08:00 - Temp: 23.69°C             | Acceptable       |
|    |                         | Module Temp.   | once per shift     | 25±3■   | Time: 08:00 - Temp: 26.19°C             | OK               |
|    |                         | Isc/simulator Calibration  | once 12h           | Isc/simulation should be calibrated at the start of the shift with Golden/Silver module(GSEN/QA/K/11) | Isc: 13.27A                             | OK               |
|    |                         | Validation   | once every 4h      | As per GSEN/QA/K/11   | As per spec                             | —                |
|    |                         | Silver Reference Module I-V Check  | once Two weeks     | Should be same as original I-v picture  | As per spec                             | Pass             |
| 28 | Hipot Test              | DCW/IR/Ground continuity   | 5 pieces per shift | ≤50µA , >40MΩ·m² , (0-100) mΩ   | S.No: 10013, 10038, 10047, 10048, 10063 | Pass             |
| 29 | Post EL Test            | Verification of current configuration in DC power supply   | once Shift         | As per WI (GSPL/P/WI/027)   | Pmax: 624.36W                           | Pass             |
|    |                         | EL Inspection and Visual Inspection  | 5 pieces per shift | Post EL Inspection Criteria, Post EL Visual Criteria  | S.No: 10007, 10010, 10060, 10079, 10099 | Good             |
| 30 | RFID                    | RFID Position  | once per shift     | As per Process card   | Tilt: 0.73mm                            | Acceptable       |
|    |                         | Cell & Module Make & Manufacturing Month Verification  | once per shift     | As per BOM and Process card   | As per spec                             | Clear            |
| 31 | Final Visual Inspection | Visual Inspection  | 5 pieces per shift | Post Lam visual inspection criteria   | S.No: 10013, 10024, 10037, 10047, 10076 | Good             |
|    |                         | Re-label   | 5 pieces per shift | No bubble,Tilt,Align,no folded label not acceptable   | Tilt: 0.08mm                            | No defects       |
| 32 | Dimension measurement   | L*W and Module Profile   | once per shift     | As per Module drawing (±1mm)  | Refer Module Drawing                    | —                |
|    |                         | Mounting Hole X & Y (H/L)  | once Per shift     |   | As per spec                             | —                |
|    |                         | Diagonal Difference  | once Per shift     | ≤3mm  | FF: 78.63%                              | Pass             |
|    |                         | Corner Gap   | once Per shift     | As per visual inspection criteria   | As per spec                             | As per spec      |
|    |                         | JB Cable length  | once Per shift     | As per Process Card   | Cable: 1186.91mm                        | Match PO         |

|    |           |                         |                   |  |              |             |
|----|-----------|-------------------------|-------------------|--|--------------|-------------|
|    |           | Packaging Label         | once<br>Per shift | WI For Packaging                           | Tilt: 0.55mm | Clear       |
| 33 | Packaging | Content in Box          | once<br>Per shift |  | As per spec  | —           |
|    |           | Box Condition           | once<br>Per shift | Damage,dull printing,wet boxes not allowed | As per spec  | —           |
|    |           | Wooden Pallet dimension | once<br>Per shift | should not be less than module dimension   | As per spec  | As per spec |