

|  |                                  | STANDARD MANUFACTURING QUALITY PLAN                                  |       |                           |                           |                                   |                                   | MQP. NO.: SMQP/QBD/01 |     |                |   |   |         |
|----------------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------|-------|---------------------------|---------------------------|-----------------------------------|-----------------------------------|-----------------------|-----|----------------|---|---|---------|
|                                                                                  |                                  | PROJECT ENGINEERING & SYSTEMS DIVISION<br>BHEL, RC PURAM, HYD-502032 |       |                           | PRODUCT: QBD              |                                   |                                   | REV NO: 00            |     | DATE: 27.03.19 |   |   |         |
|                                                                                  |                                  |                                                                      |       |                           |                           |                                   |                                   | PAGE 1 OF 3           |     |                |   |   |         |
| SL NO                                                                            | COMPONENTS                       | CHARACTERISTICS                                                      | CLASS | TYPE OF CHECK             | QUANTUM OF CHECK          | REFERENCE DOCUMENT                | ACCEPTANCE NORMS                  | FORMAT OF RECORD      | * D | P              | W | V | REMARKS |
| 1.0                                                                              | RAW MATERIALS & BOUGHT OUT ITEMS |                                                                      |       |                           |                           |                                   |                                   |                       |     |                |   |   |         |
| 1.1                                                                              | BODY (BRASS)                     | Chemical                                                             | Major | Chem. Analysis            | One (1) Per heat or Batch | App. TDS/Drg./ Spec.              | App. TDS/Drg./ Spec.              | Lab./Mfg. TC          | √   | 2              | - | 1 |         |
|                                                                                  |                                  | Dimn. Check                                                          | Major | Measurements              | 2 Nos./ Heat or Batch     | App. TDS/Drg./ Spec.              | App. TDS/Drg./ Spec.              | IR                    | -   | 2              | 2 | 1 |         |
|                                                                                  |                                  | Surface Defects                                                      | Major | Visual                    | 100%                      | Surface free from harmful defects | Surface free from harmful defects | IR                    | -   | 2              | 2 | 1 |         |
| 1.2                                                                              | CAP & DEFLECTOR                  | Chemical                                                             | Major | Chem. Analysis            | One (1) Per heat or Batch | App. TDS/Drg./ Spec.              | App. TDS/Drg./ Spec.              | Lab./Mfg. TC          | √   | 2              | - | 1 |         |
|                                                                                  |                                  | Dimn. Check                                                          | Major | Measurements              | 2 Nos./ Heat or Batch     | App. TDS/Drg./ Spec.              | App. TDS/Drg./ Spec.              | IR                    | -   | 2              | 2 | 1 |         |
| 1.3                                                                              | LIQUID FILLED BULB               | Physical observation                                                 | Major | Visual                    | 100%                      | App. TDS/Drg./ Spec.              | App. TDS/Drg./ Spec.              | IR                    | -   | 2              | 2 | 1 |         |
| 2.0                                                                              | INPROCESS INSPECTION             |                                                                      |       |                           |                           |                                   |                                   |                       |     |                |   |   |         |
| 2.1                                                                              | BODY                             | Machining & dimn. Check                                              | Major | Measurement & gauge check | 100%                      | App. TDS/Drg./ Spec.              | App. TDS/Drg./ Spec.              | IR                    | -   | 2              | 2 | 1 |         |
| 2.2                                                                              | CAP + DEFLECTOR                  | Machining & dimn. Check                                              | Major | Measurement & gauge check | 100%                      | App. TDS/Drg./ Spec.              | App. TDS/Drg./ Spec.              | IR                    | -   | 2              | 2 | 1 |         |
| 2.3                                                                              | ASSY.                            | Fitment & assembly check                                             | Major | Visual                    | 100%                      | App. TDS/Drg./ Spec.              | App. TDS/Drg./ Spec.              | IR                    | -   | 2              | 2 | 1 |         |

  

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| LEGEND: P: PERFORM, W: WITNESS, V: VERIFICATION. INDICATE 1 FOR BHEL CQS (OR BHEL NOMINATED INSPECTION AGENCY) & 2 FOR VENDOR/SUB VENDOR AS APPROPRIATE AGAINST EACH COMPONENT /CHARACTERISTIC UNDER P, W & V COLUMNS. * FOR ITEMS MARKED ✓ (TICK) IN COLUMN 'D', TEST CERTIFICATES SHALL BE SUBMITTED TO BHEL FOR RECORDS. | PREPARED BY                | APPROVED BY               | APPROVED BY                  |
|                                                                                                                                                                                                                                                                                                                             | VENDOR'S SIGNATURE & STAMP | BHEL QA SIGNATURE & STAMP | CUSTOMER'S SIGNATURE & STAMP |

|                                                                                  |                            |                                                                      |          |                                                                   |                  |                      |                      |                       |     |                |   |   |         |
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|                                                                                  |                            |                                                                      |          |                                                                   |                  |                      |                      | PAGE 2 OF 3           |     |                |   |   |         |
| SL NO                                                                            | COMPONENTS                 | CHARACTERISTICS                                                      | CLASS    | TYPE OF CHECK                                                     | QUANTUM OF CHECK | REFERENCE DOCUMENT   | ACCEPTANCE NORMS     | FORMAT OF RECORD      | * D | AGENCY         |   |   | REMARKS |
|                                                                                  |                            |                                                                      |          |                                                                   |                  |                      |                      |                       |     | P              | W | V |         |
| 2.4                                                                              |                            | Hydro test (30 kg/cm2 for 5 min)                                     | Critical | Leak proof test (pressure test)                                   | 100%             | App. TDS/Drg./ Spec. | App. TDS/Drg./ Spec. | IR                    | -   | 2              | 2 | 1 |         |
|                                                                                  |                            | & Burst test                                                         | Critical | B. P. test                                                        | 1/Lot            | App. TDS/Drg./ Spec. | App. TDS/Drg./ Spec. | IR                    | -   | 2              | 2 | 1 |         |
| 2.5                                                                              | QBD. BULB (WITH LIQUID)    | Leak Test                                                            | Critical | Leakage test                                                      | 100%             | App. TDS/Drg./ Spec. | App. TDS/Drg./ Spec. | IR                    | -   | 2              | 2 | 1 |         |
| 3.0                                                                              | FINAL INSPECTION & TESTING |                                                                      |          |                                                                   |                  |                      |                      |                       |     |                |   |   |         |
| 3.1                                                                              | Q.B.D (Complete Assembly)  | Physical observation & dimn. Check                                   | Major    | Visual check surface, make, logo Model, UL mark & Measurement     | 20% at random    | App. TDS/Drg./ Spec. | App. TDS/Drg./ Spec. | IR, Dimn. Check       | √   | 2              | 1 | - |         |
|                                                                                  |                            | Hydro Test                                                           | Major    | Pressure Test ( Leak Proof Test) 30 kg/cm2 for a period of 5 min. | 10% at random    | App. TDS/Drg./ Spec. | App. TDS/Drg./ Spec. | IR /TC                | √   | 2              | 1 | - |         |
| 4.0                                                                              | PRESERVATION & PACKING     |                                                                      |          |                                                                   |                  |                      |                      |                       |     |                |   |   |         |

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| SL NO                                                                            | COMPONENTS    | CHARACTERISTICS                                                      | CLASS | TYPE OF CHECK | QUANTUM OF CHECK | REFERENCE DOCUMENT   | ACCEPTANCE NORMS     | FORMAT OF RECORD      | * D | AGENCY         |   |   | REMARKS |
|                                                                                  |               |                                                                      |       |               |                  |                      |                      |                       | P   | W              | V |   |         |
| 4.1                                                                              | Q. B. D. Assy | Properly packing with necessary marking                              | Major | Visual        | 100%             | App. TDS/Drg./ Spec. | App. TDS/Drg./ Spec. | Packing report        | -   | 2              | 2 | - |         |
|                                                                                  |               | Preservation must be maintained at proper place                      | Major | Visual        | 100%             | App. TDS/Drg./ Spec. | App. TDS/Drg./ Spec. | Packing report        | -   | 2              | 2 | - |         |

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