MEMBRANE ELECTRODE ASSEMBLY (MEA)
Material code: SG9780063013

1. **DESCRIPTION:** Membrane electrode assembly (MEA) for high power fuel cell

2. **TECHNICAL DETAILS:**

SL.NO.	DESCRIPTION	SPECIFICATIONS
1	Members Electrode Assembly (MEA) as per drawing details	MEAs will be supplied as per drawing. Gas diffusion layer centered: (181 X 259)mm
2	MEA dimensions	7 Layer membrane avg. thickness in µm 520 +/-40 Total avg. Membrane(reinforced) thickness in µm 12+/-2
3	Feed reactants stoichiometric ratios	Hydrogen: 1.05 to 1.30, Proportional Stoic ratio of Air is: 1.8 to 3.0. MEA is operated at recommended Stoichiometric ratio.
4	Required Current density of 1 A/cm2-1.5 A/cm2 at 0.625 VDC/Cell	Operating conditions: 1. Operating temp. : 65° to 75° C 2. 0.5-1 bar at cathode, 0.5-1 bar at anode 3. Electrical conductivity of 50-55 S/cm 4. Dew point of : Air 45-55°C, Hydrogen 35-45° C 5. 60 wt% of DI water, 40 wt% of Ethylene glycol MEA operates at cell voltage of 0.65V at 1.2 A/cm2 – 1.5 A/cm2 current density, from testing of Sample MEAs.
5	Operational stability	More than 5000 hr.
6	Performance degradation rate in case of continuous operation	Below 8-10mV/1000hr.
7	Electrolyte base material	PFSA
8	Degradation rate for 5000 ON/OFF cycle over a period of 5000 hr. cumulative operation	Below 10-12mV/1000 cycles
9	Reinforcement of Non active area of MEA	Confirmed the reinforcement of Non active area of MEA
10	Differential pressure (DP) between anode and cathode	Minimum differential pressure of 0.5 bar.
11	Low temperature stability	Below 0 Deg. C
12	Thickness of Non-active area (1)	85<t< 95µm

3. GENERAL SPECIFICATION

Sl no	Description	BHEL Requirement
1	Supply of sample MEA gasket	Vendor need to submit 2 samples of MEA at NO COST to BHEL R C Puram along with technical bid for evaluation. Offer submitted without samples would be treated as INVALID.

4. TEST CERTIFICATES:

The following certificates shall be submitted by supplier
a) Duly signed manufacturers test certificate
b) Country of origin on supplier's letter head in case of foreign vendor
c) Guarantee Certificate

5. GUARANTEE CERTIFICATE:

A guarantee certificate for 18 months of trouble free performance from the date of shipment or 12 months from the date of commissioning whichever is earlier shall be furnished.

6. PACKING:

a) MEA shall be packed individually in a box. Such boxes shall be packed in a cardboard case with adequate cushioning material to withstand normal transit risks.

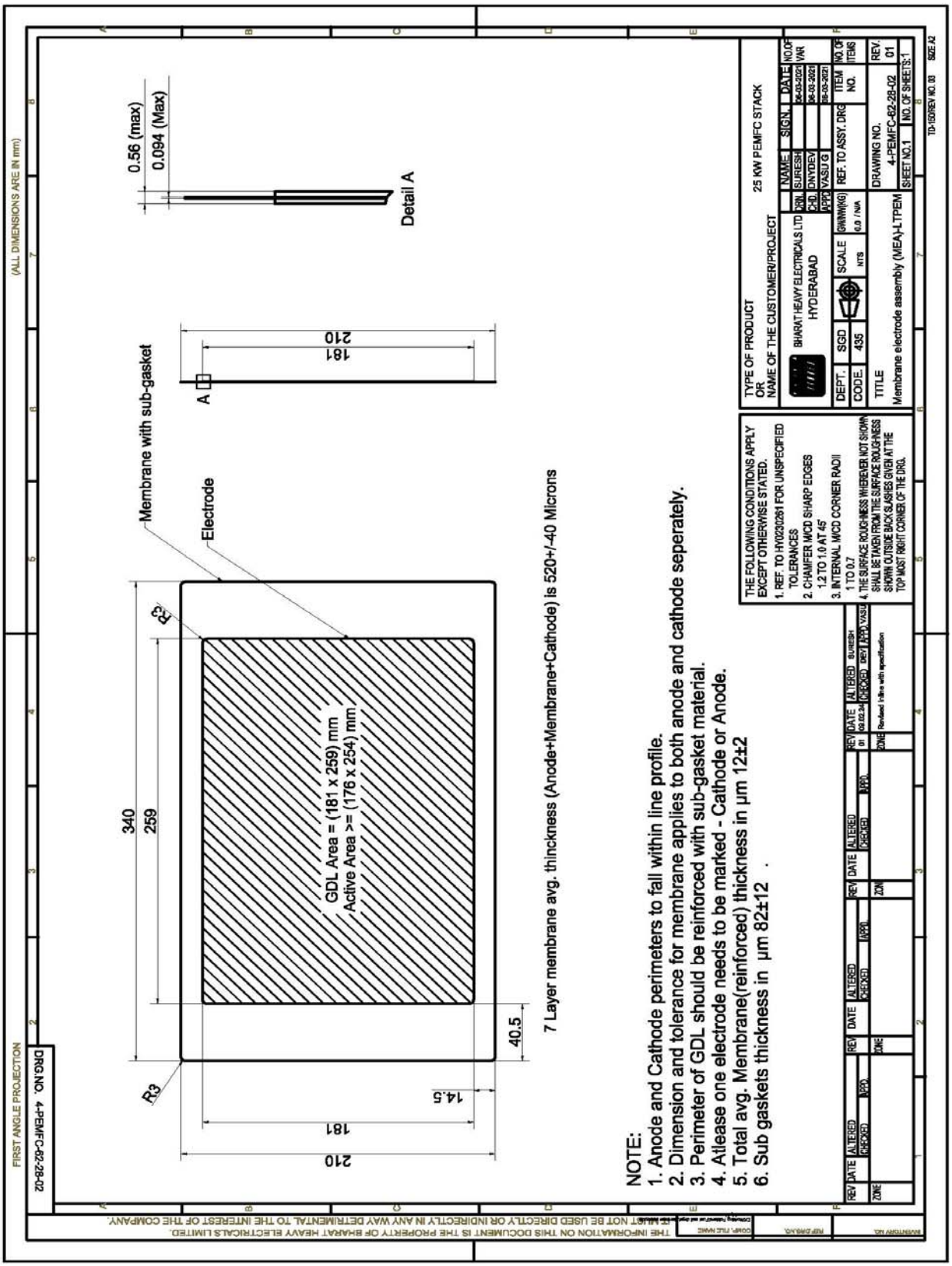
b) The item shall be stored in a covered shed for long periods before installation. The packing shall be suitable for such storage.

7. MARKING:

The following details shall be marked on the packing case.
a) Manufacturer's name or trade mark
b) BHEL purchase order no.

PRODUCT STANDARD
SWITCHGEAR
HYDERABAD

Product STD NO.	SG 80063
Rev No 01	
Page 3 of 4	



Revisions:	Prepared: K. SANGEETHA	Approved: LVRK	Date: 20.06.2023
Refer to record of revisions:			

RECORD OF REVISIONS

REV. NO	DATE	REVISION DETAILS	REVISED	APPROVED
01	09.02.204	1.MEA dimensions modified 2. Feed reactants stoichiometric ratios changed.	LVRK	KDG