



## Sigracet 39 BB

### Description

Sigracet 39 BB is a non-woven carbon paper gas diffusion media with a Microporous Layer (MPL) that has been PTFE treated to 5 wt%. It has a total thickness of 315 um (microns). The hydrophobic treatment produces water repellent properties which prevent the highly porous carbon fiber backings from flooding and actively support the water management of PEM fuel cells. SGL BB is a great low-cost alternative to conventional woven carbon paper Gas Diffusion Layer (GDL) and Gas Diffusion Media materials.

The Sigracet Carbon Fiber Paper 39 Series is intended to combine the required production robustness and the excellent performance properties. Stack developers and assemblers are benefiting from the following greatly improved characteristics:

- Greatly improved homogeneity inter-lot and intra-lot. The overall variability has been shown to be better than +/- 10% (2 sigma)
- Greatly improved surface flatness
- Greatly reduced occurrence of faulty spots on a roll
- Best performance under various operating conditions
- Recommended Applications: PEMFC portable, PEM electrolysis

### Specification



| Gas Diffusion Layer Properties |   |
|--------------------------------|---|
| Material Type                  | Carbon Fiber Paper                                  |
| Thickness                      | 315 microns +/- 20 microns                          |
| Areal Weight                   | 95 +/- 15 g/m <sup>2</sup>                          |
| Electrical Resistivity         | < 13 mΩcm <sup>2</sup> (milliohms cm <sup>2</sup> ) |
| Thermal Conductivity           | 0.20 W(m <sup>-1</sup> )(K <sup>-1</sup> )          |
| Bending Stiffness (MD/TD)      | 3.5 / 2.9 N mm                                      |
| Gas Permeability               | 1.5 Gurley sec                                      |
| Compressibility                | 27 (@ 5 psi, 1.0 MPa)                               |
| Water Contact Angle (MPL)      | > 130°  |
| Roughness (MPL side)           | 7.0 μm  |
| Impurities (Fe, Co, Ni)        | < 10 ppm  |
| Tensile Strength               | 7.7 / 4.9 (MD/TD)                                   |
| PTFE Treatment                 | 5%  |
| Microporous Layer              | Yes, on one side                                    |