

## BlueFlame

BF275F-120-H/H

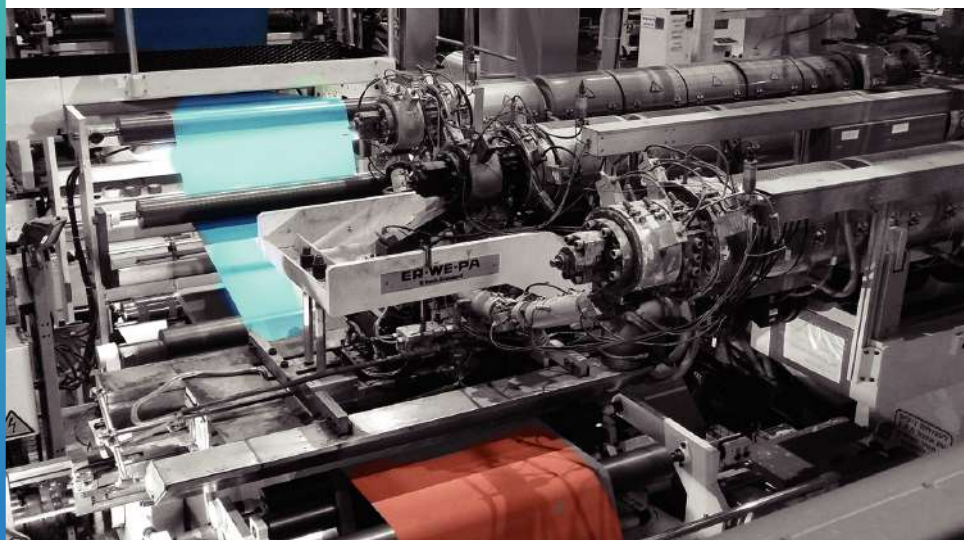
BF275F-60-H/H

BF275F-30-H/H

BF275F-20-H/H

BF275F-16-H/H

PCB Laminate for RF&MW Applications



BlueFlame is based on PureBlue proprietary polymer chemistry and continuous lamination technology.

Both the process and the substrate structure and composition are protected by existing patents and patent pendings.



### Lowest-loss PCB Laminates

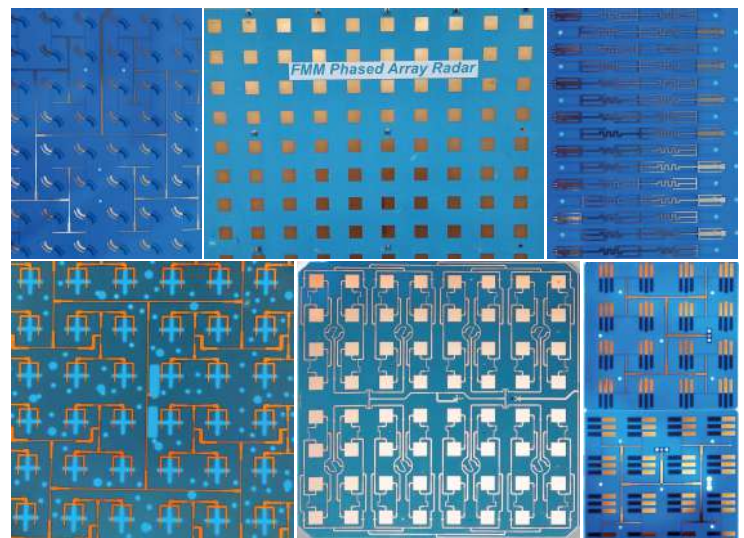
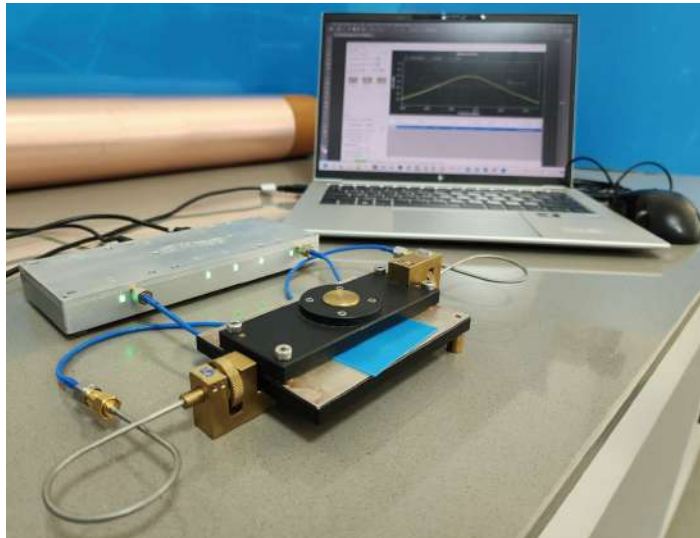
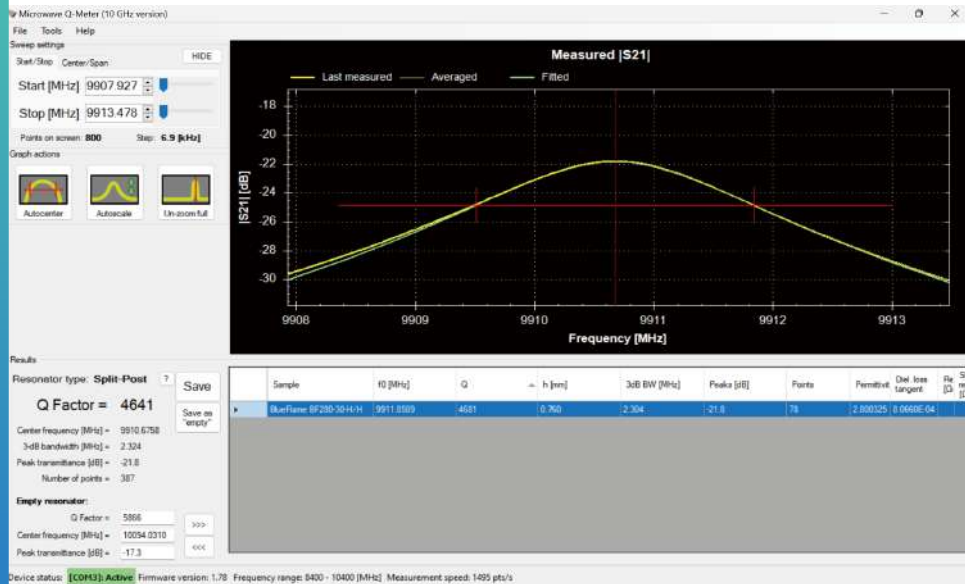
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PCB Laminate for RF&MW Applications



The BlueFlame laminate is designed to meet most demanding application scenarios.

The absolute glass fiber free system delivers the most isotropic substrate.

Multiple short time expositions to heat of 310 °C, capacity to operate at above 120 °C.

The proprietary to PureBlue continuous lamination process of high throughput secures tight thickness tolerance and very narrow fluctuation of dielectric constant.

The BF275F polymer compound features highly cross-linked polyolefin system designed for critical microwave components, antennas, power amplifiers and subassemblies.

Superior mechanical and electrical performance make the BF275F laminate system the material of choice for your lowest loss, high frequency applications.

The isotropic substrate structure secures substantial advantage in PIM readings vs. anisotropic analogies. The highest impact was recorded with dense PTH designs, better than -163 dBc under dynamic test and better than -170 dBc under static one.

PIM designated lowest profile foils apply in our performance-on-demand product versions.

## Lowest-loss PCB Laminates

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## Typical Specification Values

| Property                                  | IPC-TM 650 or ASTM | Units   | Value              | Condition / Remarks                                                             |
|-------------------------------------------|--------------------|---------|--------------------|---------------------------------------------------------------------------------|
| Dielectric Constant                       | IPC 2.5.5.5        | ---     | 2.75±0.02          | @10 GHz 23 °C                                                                   |
| Dissipation Factor                        |                    | ---     | 0.0012             |                                                                                 |
| Peel Strength                             | IPC 2.4.8          | N/mm    | 1.8-2.1            | Typical                                                                         |
| Moisture Absorption                       | IPC 2.6.2.1        | wt. %   | <0.04              | Typical                                                                         |
| Volume Resistivity                        | IPC 2.5.17.1       | MΩ - cm | >3X10 <sup>7</sup> |                                                                                 |
| Surface Resistivity                       | IPC 2.5.17.1       | MΩ - cm | >3X10 <sup>7</sup> |                                                                                 |
| Dielectric Strength                       | IPC 2.5.6          | kV/mm   | 19.7               |                                                                                 |
| Flexural Strength, min                    | IPC 2.4.4          | GPa     | 4                  |                                                                                 |
| Thermal Conductivity                      | ASTM C518          | W/m-K   | 0.4                |                                                                                 |
| x-y CTE, (-45 to 140 °C)                  | DMA/TMA            | ppm/°C  | <70                |                                                                                 |
| z CTE, (-45 to 120 °C)                    | DMA/TMA            | ppm/°C  | 150                |                                                                                 |
| Recommended operational temperature range |                    | °C      | -45 to +125        | For operation outside this temperature range please ask your technical contact. |
| Flammability                              | UL-94              |         | V0                 |                                                                                 |
| RoHS and Lead Free compatibility          |                    | ---     | Compatible         |                                                                                 |

## Electro Deposited HTE Copper Foil Specifications

Typical copper cladding is 15  $\mu$  HTE specified below. Other foil thickness - 12, 18, 24 and 35 may apply per demand.  
Other foil types may apply - reverse treated, rolled. Copper foil may be replaced with aluminum rolled. Aluminum thickness - 20 to 50  $\mu$

| Nominal thickness, $\mu$ m | Area weight, g/m <sup>2</sup> | Tensile strength, N/mm <sup>2</sup> | Elongation, % | Resistivity at 20 °C, Ohm g/m <sup>2</sup> |  |
|----------------------------|-------------------------------|-------------------------------------|---------------|--------------------------------------------|--|
| 15 $\pm$ 1                 | 125 $\pm$ 10                  | > 245                               | > 3           | < 0,162                                    |  |

| Feature                            | Unit                           | Gauge    | IPC      |            |
|------------------------------------|--------------------------------|----------|----------|------------|
|                                    |                                | 25 $\mu$ | IPC-4562 | IPC-MF-650 |
| Shiny side roughness, Ra           | $\mu$                          | 0,2-0,4  | 3.5.6    | 2.2.17     |
| Matt side roughness, Rz            | $\mu$                          | 4-5      | 3.4.5    | 2.2.17     |
| Tensile strength, room temperature | MPa,                           | > 276    | 3.5.1    | 2.4.18     |
| Elongation, room temperature       | %                              | > 10     | 3.5.3    | 2.4.18     |
| Solderability                      | Meets requirements of IPC-4562 |          | 3.6.3    | 2.4.12     |

## Panel Thickness (excluding copper foil)

BF275F-120-H/H – 3048  $\mu$  / 0.120" with a tolerance of  $\pm$  75  $\mu$   
 BF275F-60-H/H – 1524  $\mu$  / 0.060" with a tolerance of  $\pm$  40  $\mu$   
 BF275F-30-H/H – 760  $\mu$  / 0.030" with a tolerance of  $\pm$  25  $\mu$   
 BF275F-20-H/H – 508  $\mu$  / 0.020" with a tolerance of  $\pm$  15  $\mu$   
 BF275F-16-H/H – 406  $\mu$  / 0.016" with a tolerance of  $\pm$  12  $\mu$

## Panel Dimensions

- Standard 608X1220 mm
- Panel length may be increased to maximize the yield for massive orders upon arrangement.

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