

Temperature Distribution MIRL17-900

The nanostructured carbon membrane is a square of dimension 2.3mm x 2.3mm and overlaps the silicon frame. The radiant area of the free-hanging part of the membrane is ca. 1.7mm x 1.7mm. The temperature decreases from the center to the edges due to heat transfer to the frame. The two ends of the membrane that overlap the silicon frame are not radiant hot, and the side edges, which are anchored in spots, are also cooler. The temperature distribution of the membrane measured with a micro-pyrometer is shown in the figures below where the maximum temperature in the center is 750°C. The hottest area in the center (>740°C) has the shape of an ellipse. The glowing area at lower temperatures has the shape of a rectangle with rounded corners.

