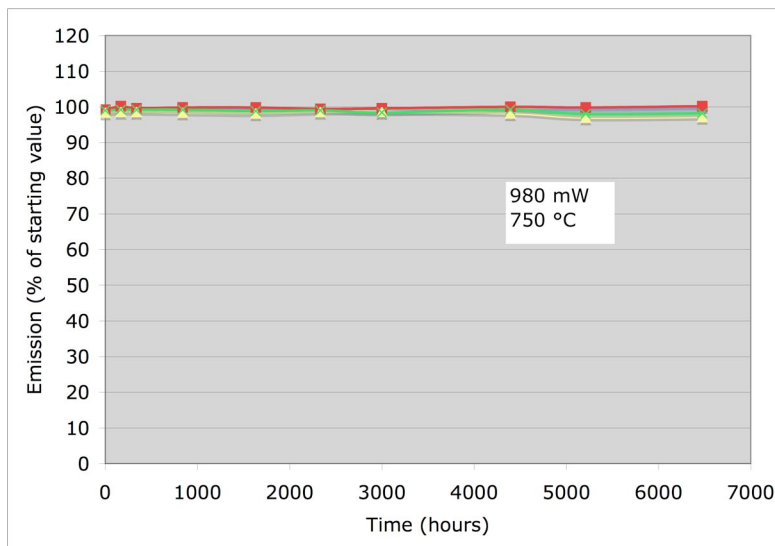




### Lifetime of MIRL17-900 IR Emitter

The lifetime tests are performed in ambient atmosphere using a square input pulse at 10 Hz and 50% duty cycle at the maximum rated input power corresponding to a temperature of ~750 °C in the center of the membrane. The results show no measurable degradation within the rated lifetime of 5000 hours at 750°C. The sources were operated at ambient conditions and do not require encapsulation.



Dependence of lifetime as function of membrane temperature for MIRL17-900 infrared emitter relative to the lifetime at 750°C. By lowering the membrane temperature the lifetime increases according to the formula

$D = K \cdot e^{\frac{T_a}{t+273}}$  where  $D$  is the durability (days),  $t$  is the temperature of the membrane (°C) and  $K$  and  $T_a$  are constants selected by a least squares fit. As can be seen, by lowering the temperature to 600°C, the lifetime increases by more than a factor of 10.

