

# Filament Control

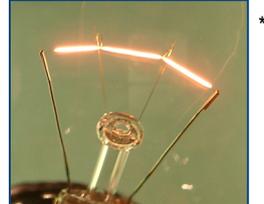
## Function Test of the Filament Light Bulb



# Q

Question

How is the functional test of the light bulb filament executed?

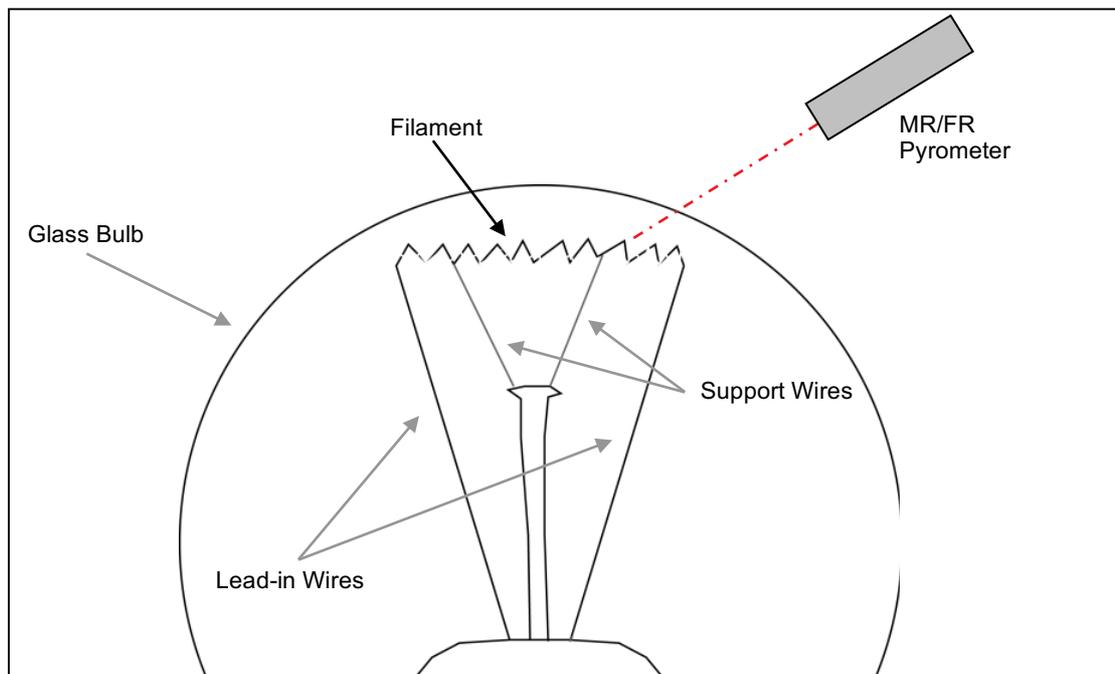


# A

Answer

### Situation Analysis

After a light bulb is sealed, a functional test of the filament is performed. To test the filament, the light bulb is energized and the temperature of the filament is measured. This test helps to identify defective light bulbs early in manufacturing, so changes can be made in the process to reduce scrap and achieve the desired quality. The filament is very small, so repeatable results are especially critical. In addition, the sensor must see through the glass bulb and measure the filament behind it, which presents another challenge.



*Temperature Measurement of the Filament as a Function Control of the Light Bulb*

# A

Answer

## Solution and Improvements

The Raytek Marathon Series FR and MR ratio pyrometers are well suited for the functional test of the filament. The two-color operation allows precise results up to a signal attenuation of 95%. With their spectral responses of  $1\ \mu\text{m}$ , both pyrometers are ideal for measuring through the glass bulb and detecting the filament behind it. The ratio operation allows for the measured object to be smaller than the measurement spot of the sensor. The FR fiber-optic pyrometer, with its small optical head and flexible cable, is the best choice for hard-to-reach locations and can be used without cooling in an ambient environment up to  $315^{\circ}\text{C}$  ( $600^{\circ}\text{F}$ ).



Ratio Pyrometer FR



Ratio Pyrometer MR

### Raytek Product

- Marathon FR
- Marathon MR

### Benefits

- Improved quality
- Reduced scrap
- Optimized Manufacturing

### Accessories

- Air Purge Collar for FR
- DataTemp® Multidrop Software for Marathon Series FR/MR

For customized solutions to your process, please contact:

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