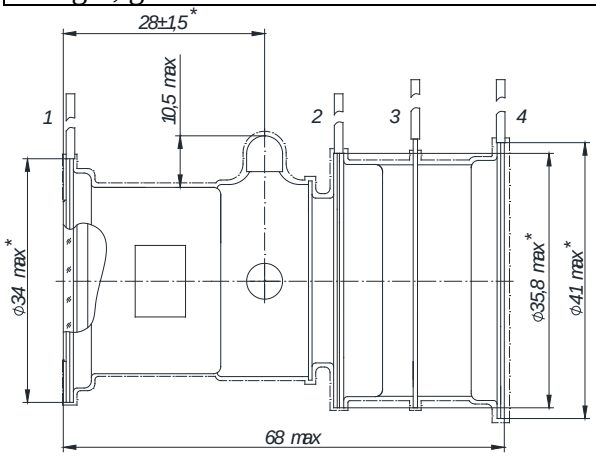
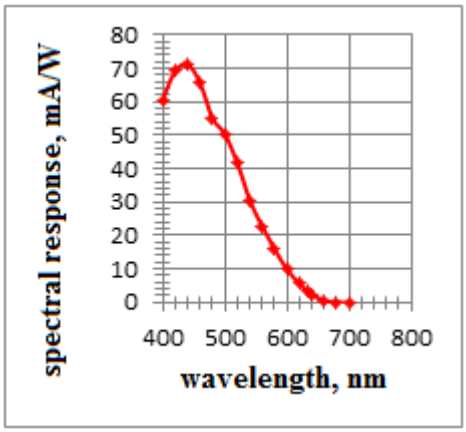
# Photon counting MCP-PMT Topaz

PMT Topaz comprises a bialkali potassium-sodium-antimony photocathode, electrostatic electron focusing at the input, a chevron stack of two microchannel plates and a metal anode. PMT Topaz provides for operation in photon counting mode. PMT Topaz is intended for amplification of low visible signals and converting them to electric ones in general application electron devices and high sensitivity instruments in spectrometry. While PMT is heat-resistant at temperatures to 150°C, it can be utilized in devices operating in high climate-relevant impact conditions.

Basic performance

| | |
|---|---|
| Spectral response range, nm: | 300 - 650 |
| Integral sensitivity, μA/lm | 40, min |
| Spectral response at λ = 420 nm, mA/W | 40, min |
| Photocathode active area diameter, mm | 14 |
| Single-electron amplitude resolution, % | 100, max |
| Gain at MCP voltage 2400 V max | $10^6$, max |
| Dark pulses counting rate density, $sec^{-1}cm^{-2}$ | 50, max |
| Response duration (FWHM), nsec | 1,2 max |
| Anode current pulse rise time, nsec | 0,8 max |
| Weight, g | 50, max |




Scheme of voltage supply to the electrodes

| Terminal marking | Electrode | Adjustable voltage range, V |
|---|---|---|
| 1 | Photocathode | «minus» (3000 – 3400) |
| 2 | Amplifier input | «minus» (2000 – 2400) |
| 3 | Amplifier output | 0 |
| 4 | Anode | 300 |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