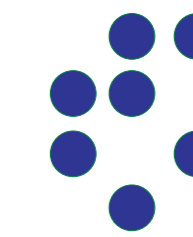


Surface Sensitivity of Multianode Photomultiplier Tubes

S.Korpar, I.Bizjak, A.Gorišek, P.Križan, R.Pestotnik, M.Staric, A.Stanovnik

Rok Pestotnik

Institut
Jozef Stefan
Ljubljana
Slovenia



PM tubes studied: Hamamatsu R5900

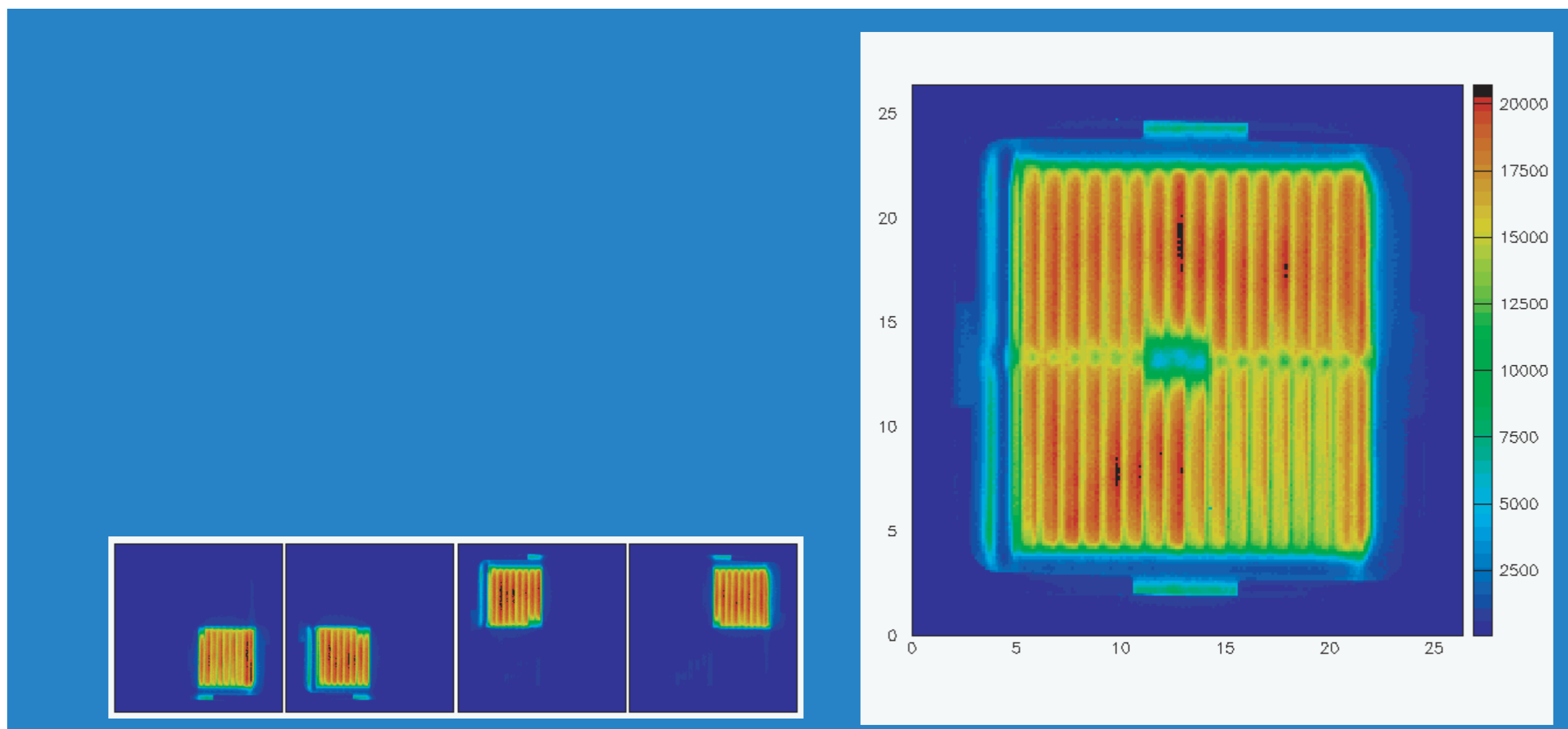
Anode divisions : 2x2 M4, 4x4 M16, 1x16 L16
Spectral response: 270 to 650 nm
Quantum efficiency at peak : 22%
Photocathode : Bialkali
Effective area : 18mm x 18 mm
Operational voltage: 600-1000 V

Measurements performed:

- Position dependent surface sensitivity with 30 μ m resolution at three different wavelengths
- PMT response at different incident beam angles
- The above measurements have been performed on three different PMT types (M4, L16, M16)

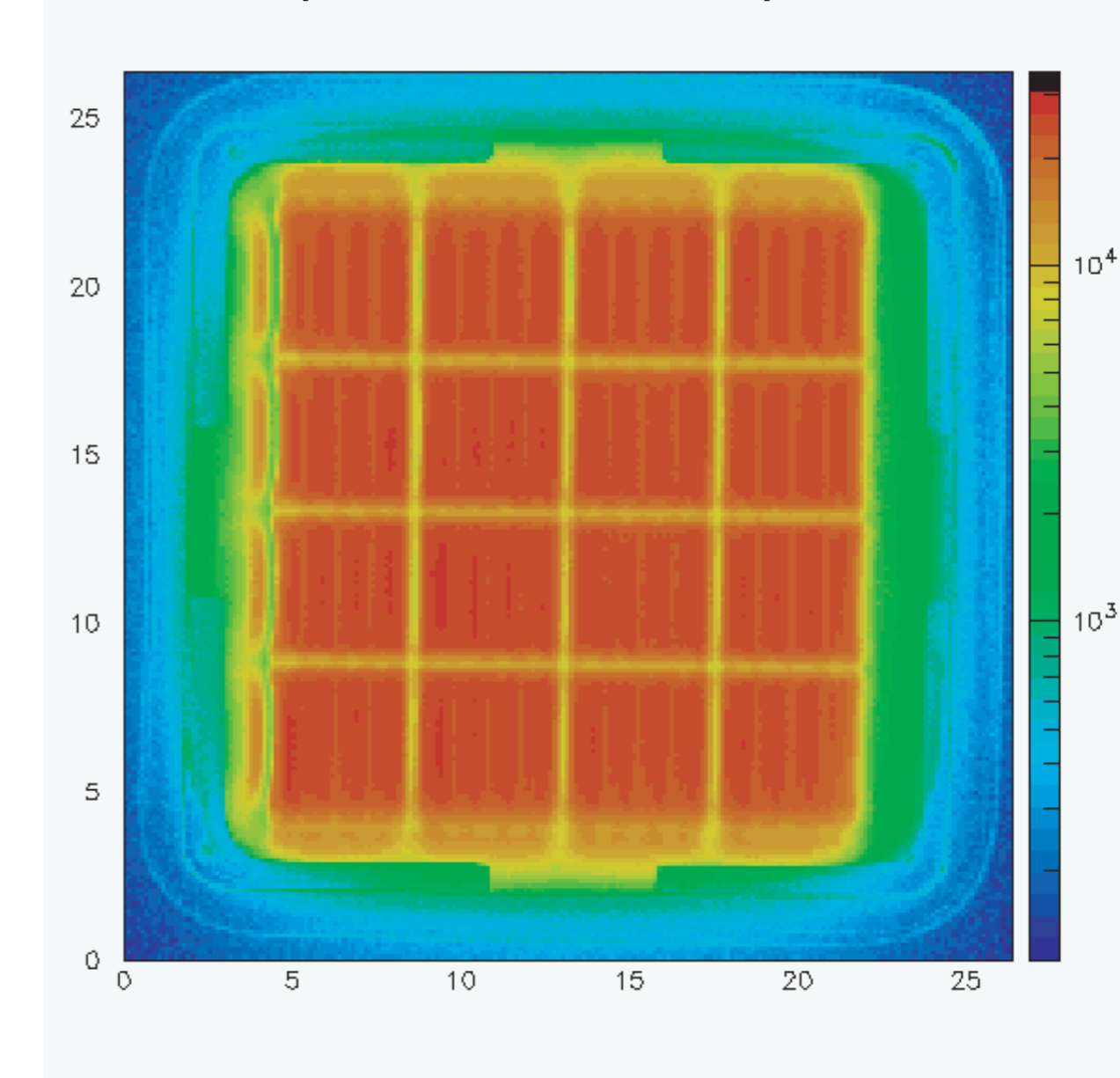
Position dependence of rates at normal incidence (right column)
Rates on individual anode channels (left column)

M4 (s/n: EA0055), blue LED

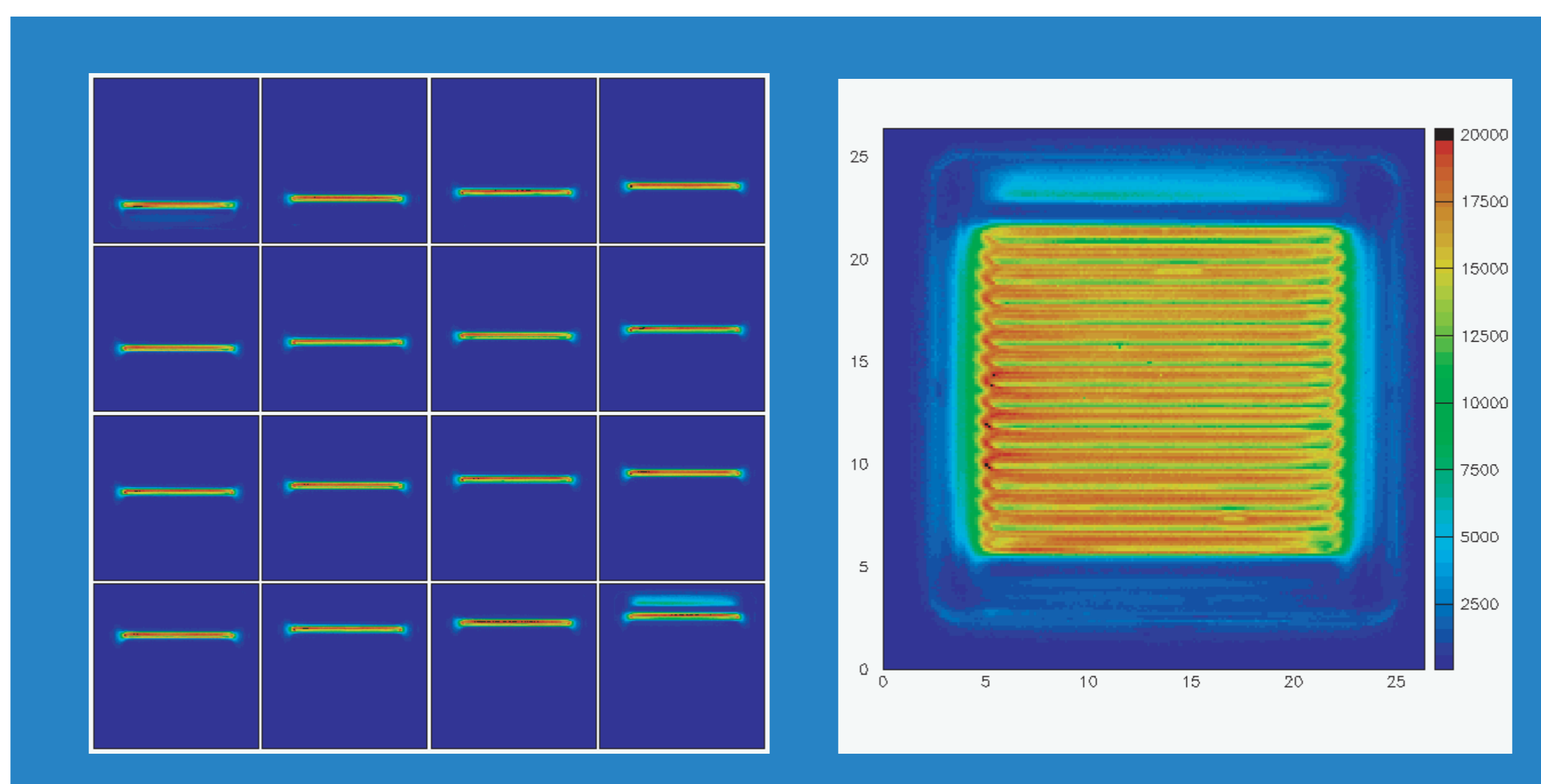


Surface sensitivity in logarithmic scale displaying boundary effects.

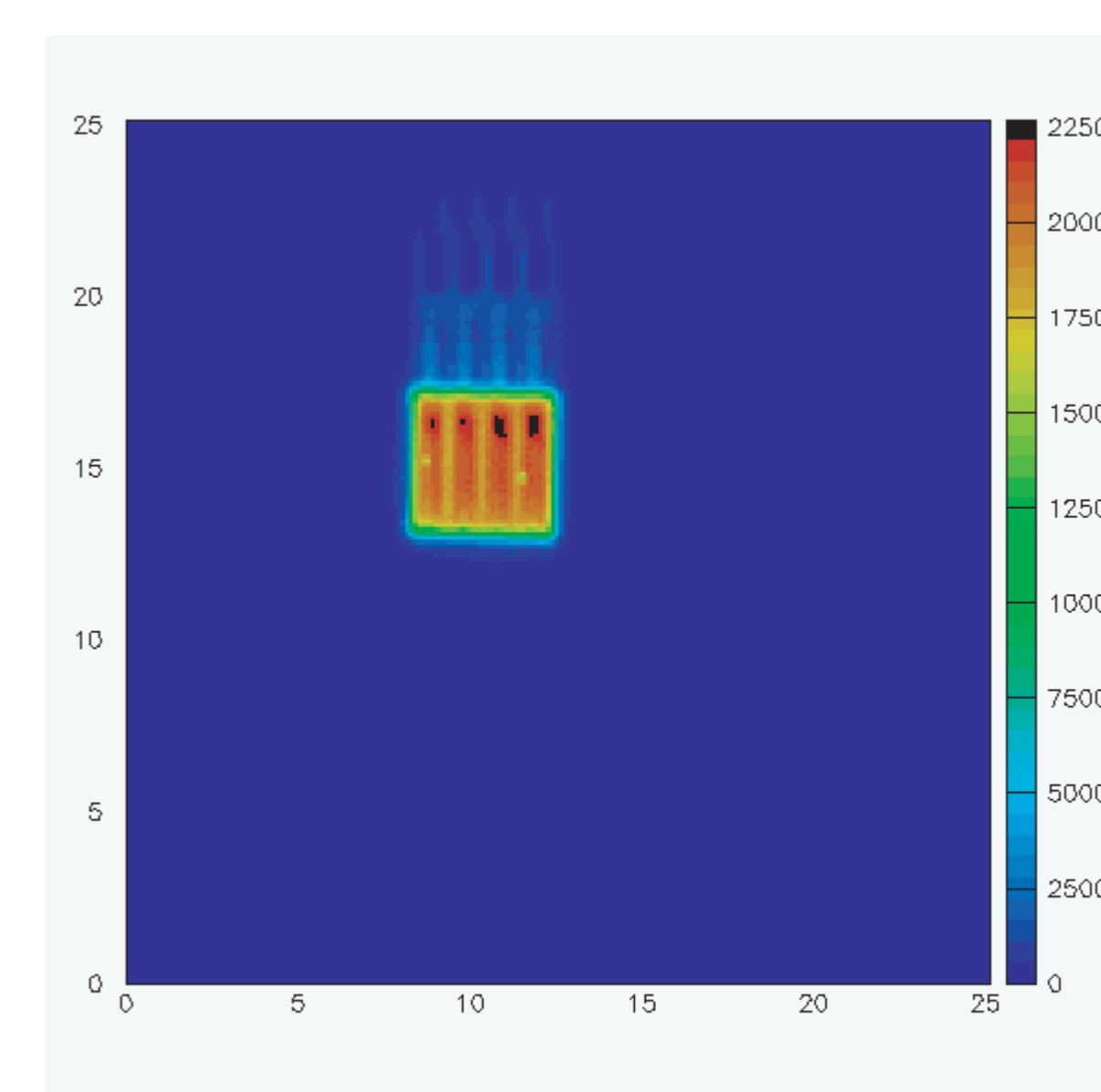
M16 (s/n: KA0350), blue LED



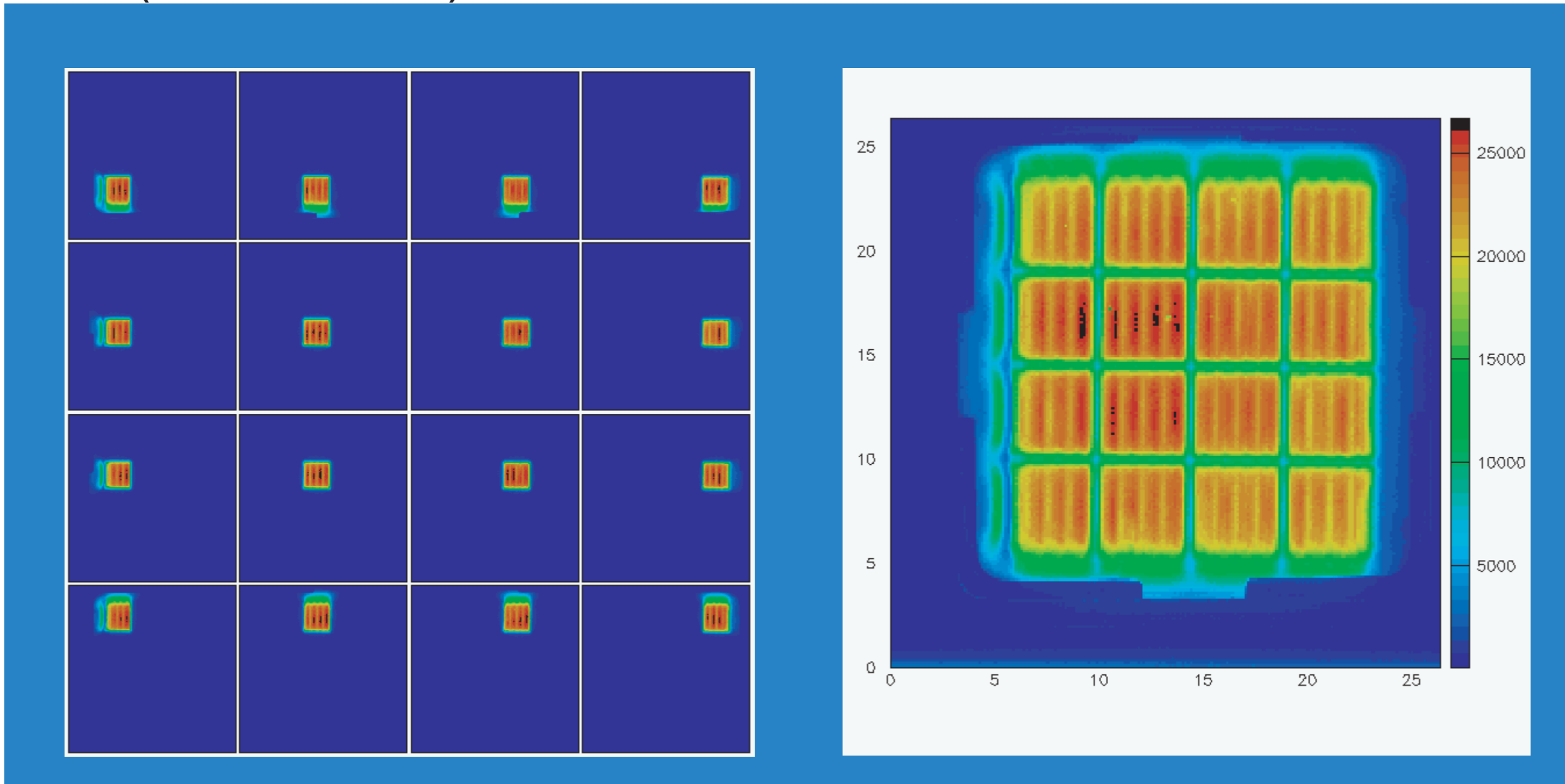
L16 (s/n: LMU102), blue LED



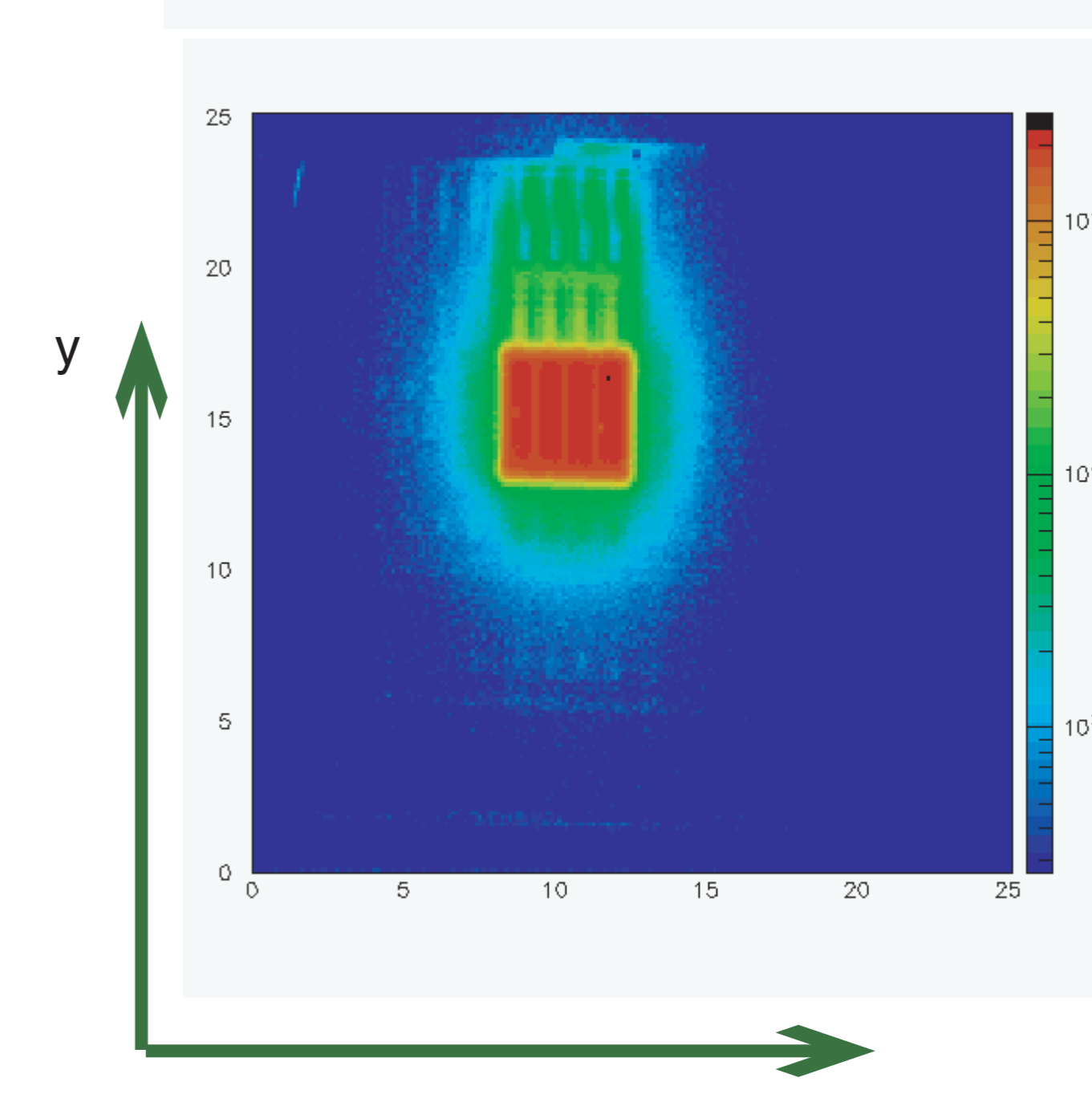
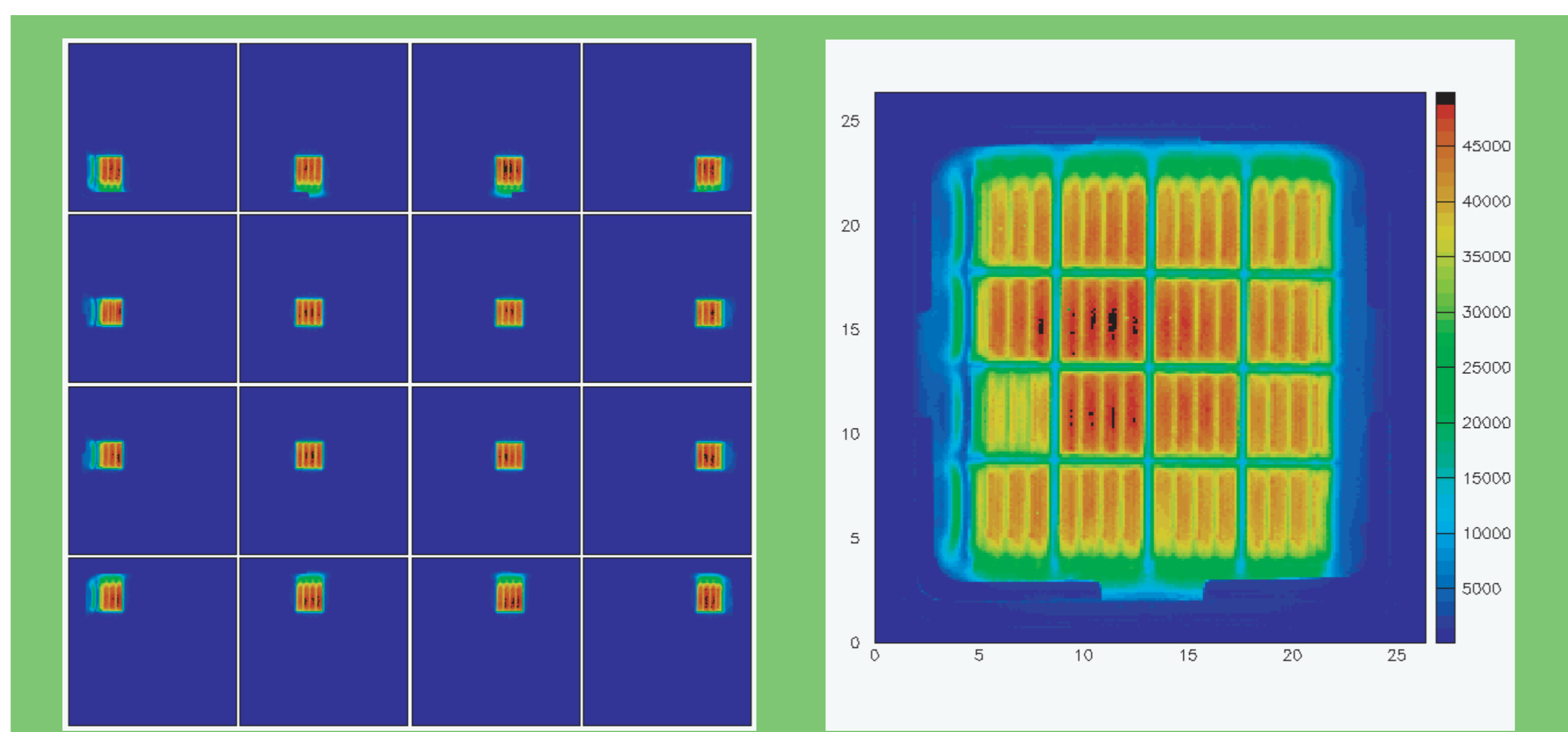
Position dependence of rates for M16 at 50 deg. incident angles:
Surface sensitivity of a single channel in linear scale (top) and log scale (bottom)



M16 (s/n: KA0349), blue LED

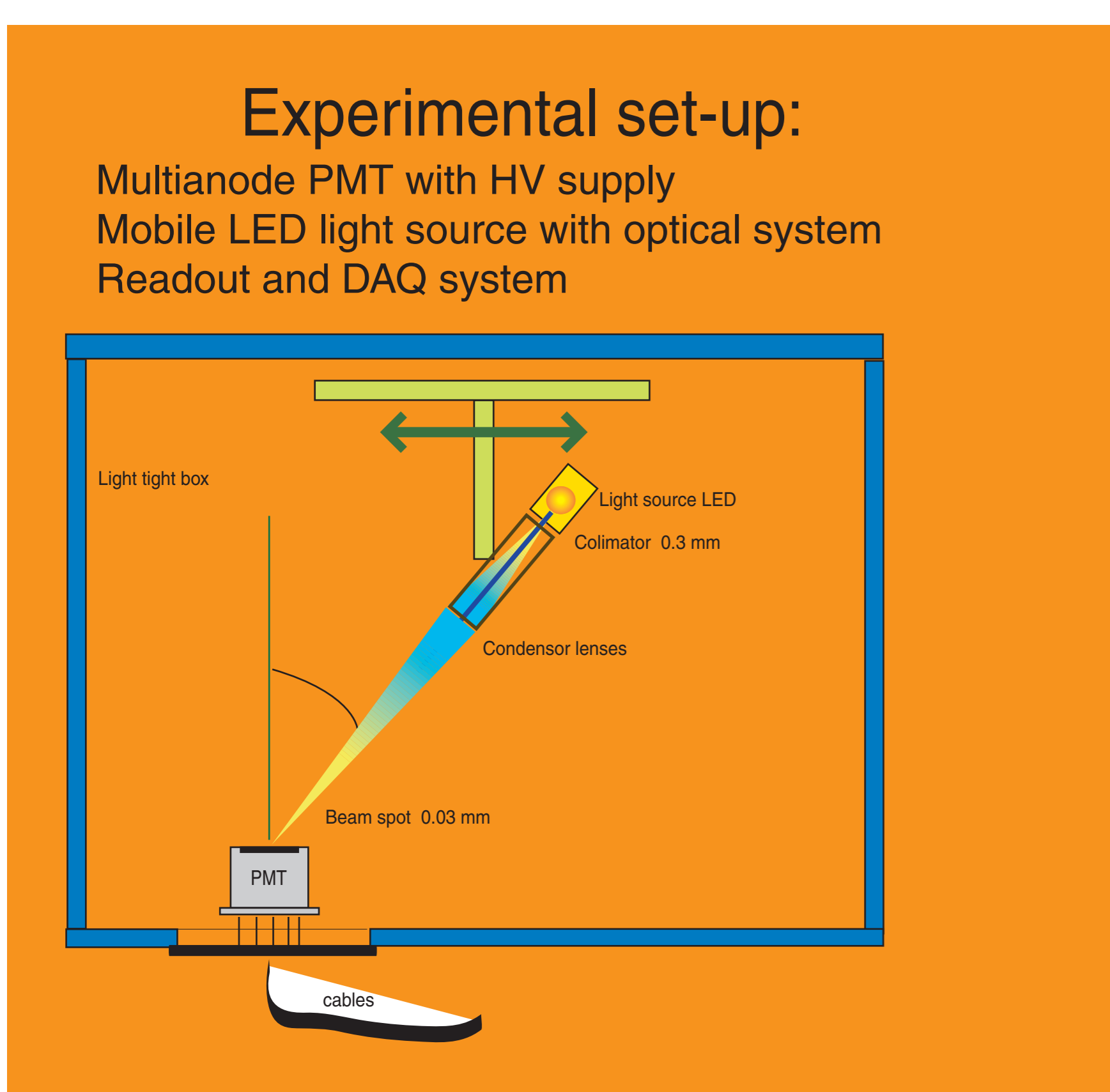
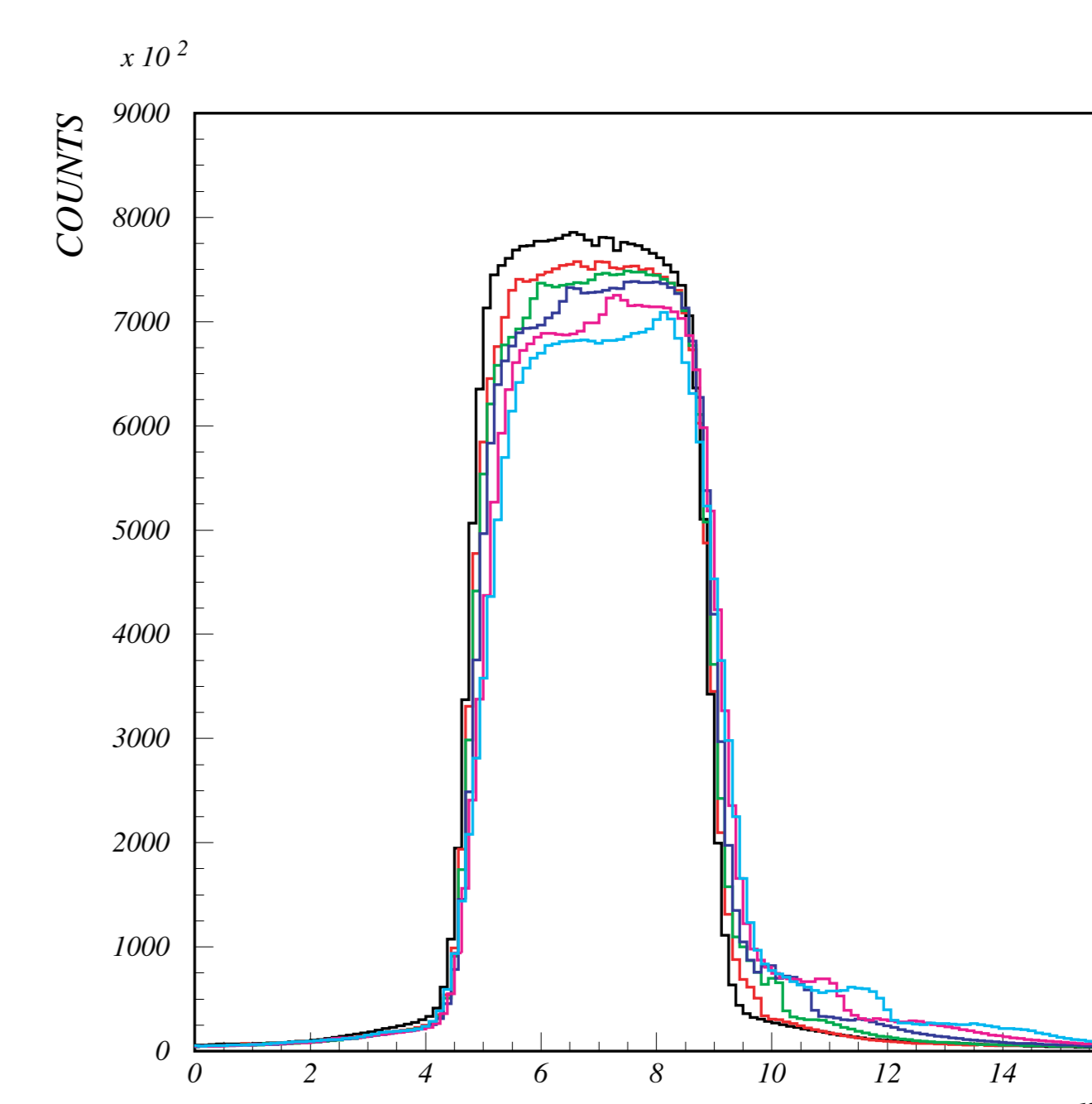
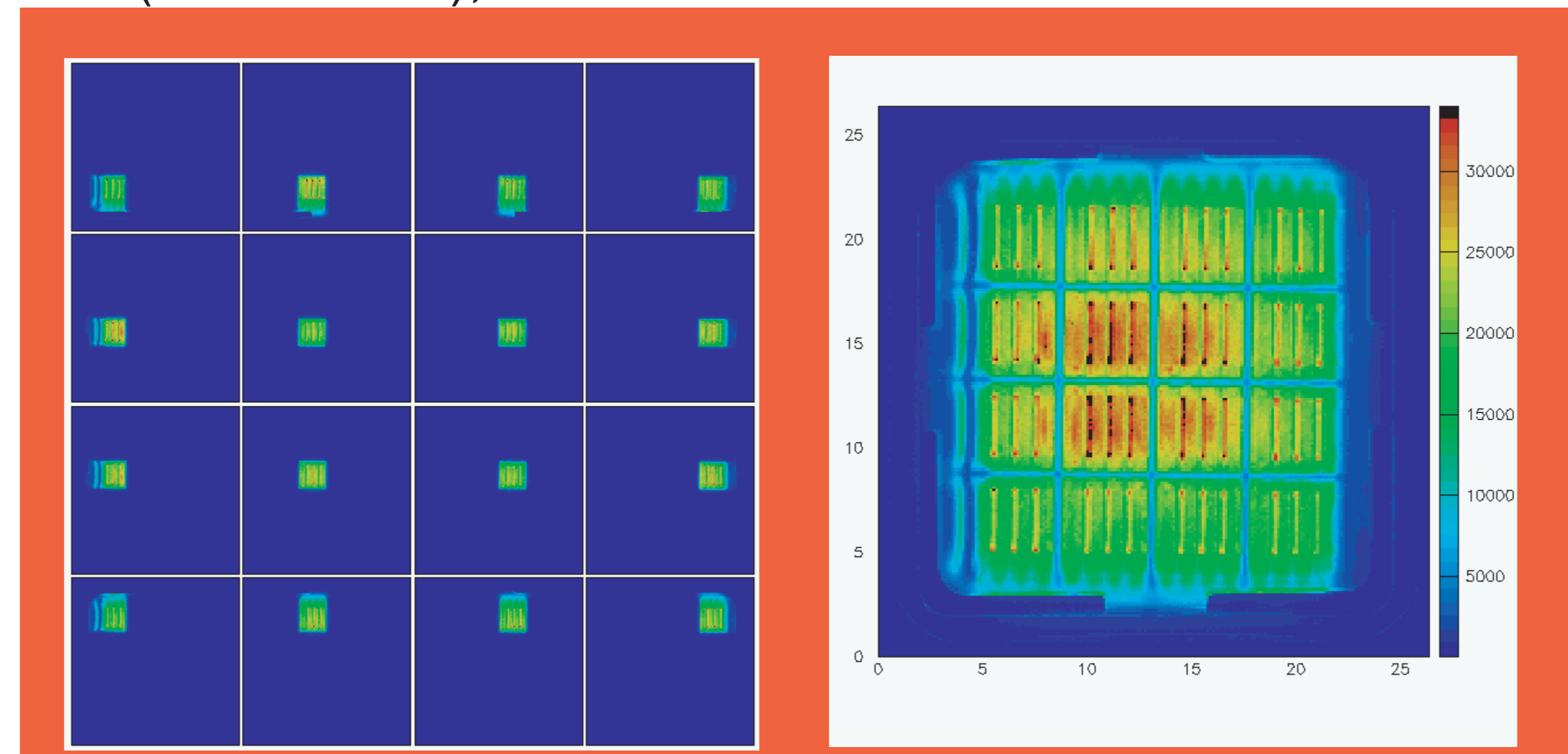


M16 (s/n: KA0349), green LED



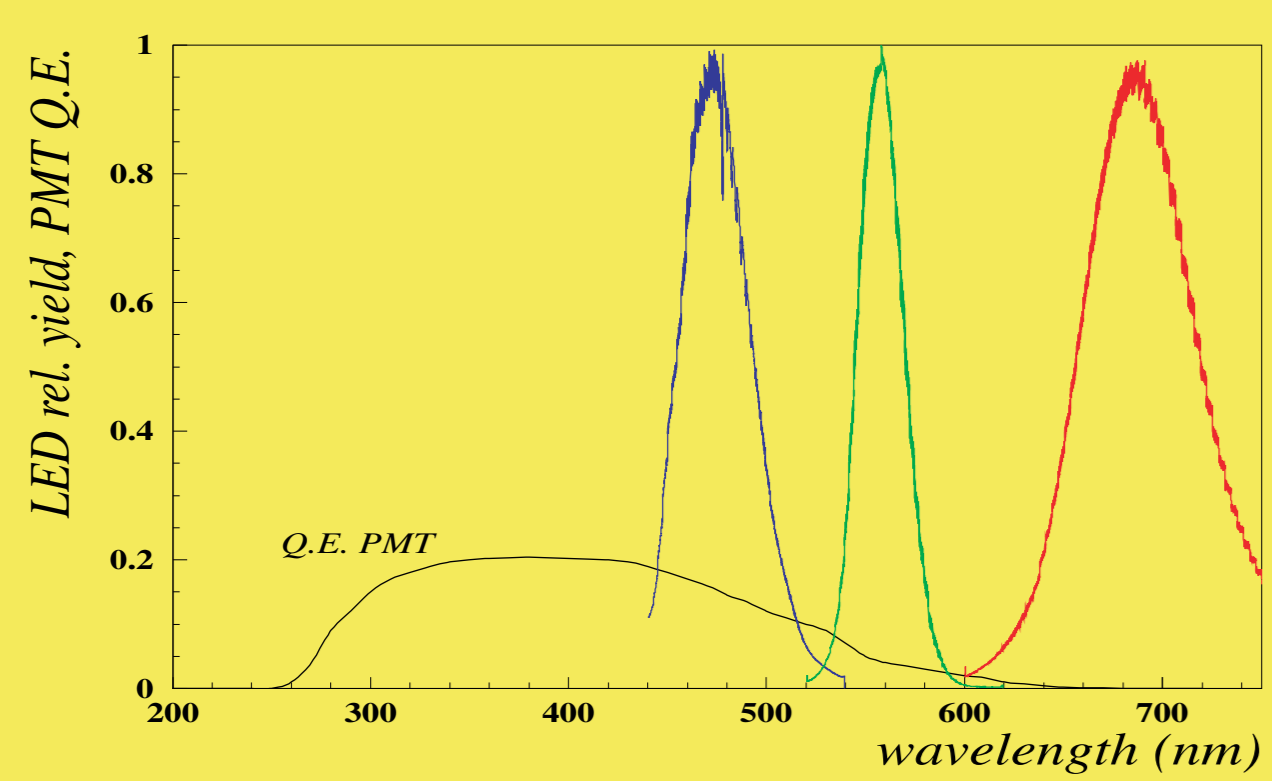
Angular dependence of M16 response: Single channel rate at different incident angles (black 0, red 10, green 20, dark blue 30, pink 40 and light blue 50 deg.) as a function of the y coordinate

M16 (s/n: KA0349), red LED



Light sources:

Spectra of the LED's used compared to the quantum efficiency of the PMT



Readout and DAQ:

