

The FIRST PACS Instrument

A. Poglitsch

Max-Planck-Institut für extraterrestrische Physik, Postfach 1312, D-85741 Garching, Germany
alpog@mpe.mpg.de

C. Waelkens

Katholieke Universiteit Leuven, Celestijnenlaan 200B, B-3001 Leuven, Belgium

The Photoconductor Array Camera & Spectrometer (PACS) is one of the three science instruments for ESA's Far Infra-Red and Submillimetre Telescope (FIRST). It employs two Ge:Ga photoconductor arrays (stressed/unstressed) with 16×25 pixels, each, and two filled Si bolometer arrays with 16×32 and 32×64 pixels, respectively, to perform imaging line spectroscopy and imaging photometry in the $60 - 210\mu\text{m}$ wavelength band. In photometry mode, it will simultaneously image two bands, $60 - 90$ or $90 - 130\mu\text{m}$ and $130 - 210\mu\text{m}$, over a field of view of $\sim 1.75' \times 3.5'$, with full beam sampling in each band. In spectroscopy mode, it will image a field of $\sim 50'' \times 50''$, resolved into 5×5 pixels, with an instantaneous spectral coverage of $\sim 1500\text{km/s}$ and a spectral resolution of $\sim 175\text{km/s}$. In both modes background-noise limited performance is expected, with sensitivities (5σ in 1h) of ~ 3 mJy or $2 - 8 \times 10^{-18}\text{W/m}^2$, respectively.