



MW FLIM Multi-Wavelength FLIM Detector

Part List of Detector Assembly

M-SHUT field lens and shutter assembly ¹⁾
 MW-FLIM fibre bundle
 MW-FLIM fibre adapter to spectrograph
 LOT MS125 spectrograph
 PML-16-0-C (300 to 600 nm) or PML-16-1-C (300 to 800 nm) 16 channel PMT module, with MS125 adapter

TCSPC components required

SPC-830 or SPC-150 TCSPC module ²⁾ or Simple-Tau 830 or 150 stand-alone TCSPC system ³⁾
 DCC-100 detector controller ²⁾
 SPCImage FLIM data analysis software

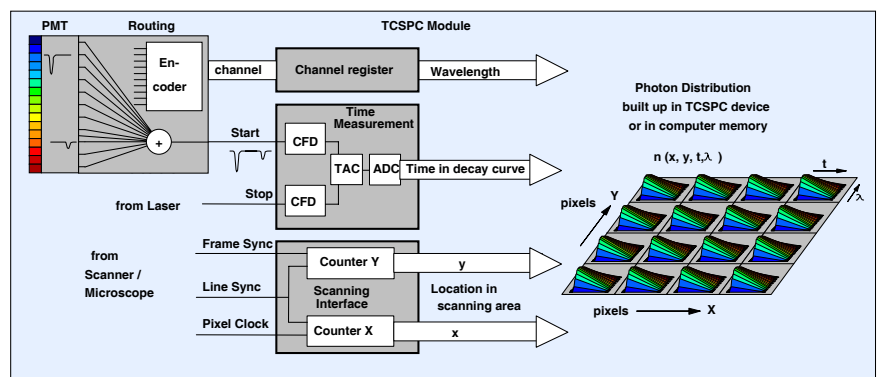
- 1) please specify microscope type and configuration in your order
 2) PC cards, to be inserted in a Pentium PC
 3) Laptop based stand-alone system, contains SPC-830 or SPC-150 and DCC-100

Wavelength range and resolution

Grating Part No.	Primary wavelength region adjustable by set screw ⁴⁾	Width of recorded wavelength interval, channel 1 to 16	Blaze Wavelength
77417	340-820 nm	300 nm	500 nm
77414 (standard)	340-820 nm	200 nm	400 nm
77411	340-820 nm	100 nm	350 nm

4) for PML-16-1, may vary due to transmission range of microscope optics

The setup employs BH's multi-dimensional TCSPC technique featuring multi-wavelength capability, high count rate, near-ideal counting efficiency, low differential nonlinearity, and ultra-high time-resolution. It contains the usual building blocks (CFDs, TAC, ADC) in the 'reversed start-stop' configuration together with a scanning interface and a large histogram memory integrated on a single PC board. For each photon the TCSPC module determines the time within the fluorescence decay function, t , the wavelength, λ , and the location within the scanning area, x and y . These values are used to address a memory in which the events are accumulated. Thus, in the memory the distribution of the photon density over X , Y , λ , and t builds up. With a 16-channel detector, the result contains 16 data sets for different wavelength, each containing a large number of images for different time in the fluorescence decay curve. The recording process runs at any scan rate, including ultra-high rates of resonance scanners.



For more information please download or request

W. Becker, The bh TCSPC Handbook, 5th edition, Becker & Hickl GmbH (2012), www.becker-hickl.com
 Becker & Hickl GmbH, PML-16-C User Handbook, www.becker-hickl.com
 Becker & Hickl GmbH, FLIM systems for Zeiss LSM 510 and LSM 710 family microscopes, www.becker-hickl.com
 Becker & Hickl GmbH, DCS-120 confocal scanning FLIM systems, www.becker-hickl.com
 W. Becker, A. Bergmann, C. Biskup, Multi-Spectral Fluorescence Lifetime Imaging by TCSPC. *Micr. Res. Tech.* 70, 403-409 (2007)
 P. A. A. De Beule, C. Dunsby, N. P. Galletly, G. W. Stamp, A. C. Chu, U. Anand, P. Anand, C. D. Benham A. Naylor, P. M. W. French, A hyperspectral fluorescence lifetime probe for skin cancer diagnosis. *Rev. Sci. Instrum.* 78, 123101 (2007)
 A. Rück, Ch. Hülshoff, I. Kinzler, W. Becker, R. Steiner, SLIM: A New Method for Molecular Imaging. *Micr. Res. Tech.* 70, 403-409 (2007)
 D. Chorvat, A. Chorvatova, Multi-wavelength fluorescence lifetime spectroscopy: a new approach to the study of endogenous fluorescence in living cells and tissues. *Laser Phys. Lett.* 6 175-193 (2009)
 E. Dimitrow, I. Riemann, A. Ehlers, M. J. Koehler, J. Norgauer, P. Elsner, K. König, M. Kaatz, Spectral fluorescence lifetime detection and selective melanin imaging by multiphoton laser tomography for melanoma diagnosis. *Experimental Dermatology* 18, 509-515 (2009)



Becker & Hickl GmbH
 Nahmitzer Damm 30
 12277 Berlin, Germany
 Tel. +49 30 787 56 32
 info@becker-hickl.com
 Fax +49 30 787 57 34
 www.becker-hickl.com



US Representative:
Boston Electronics Corp
 Tel: (800) 347 5445 or (617) 566 3821
 Fax: (617) 731 0935
 www.boselec.com tcspc@boselec.com



UK Representative:
Photonic Solutions PLC
 sales@photronicsolutions.co.uk
 www.photronicsolutions.co.uk