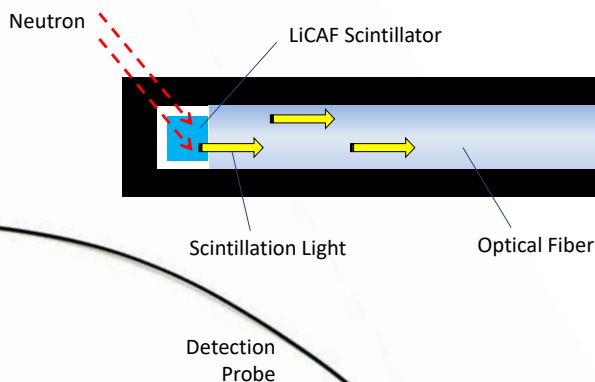


# Fiber Type LiCAF NEUTRON DETECTOR

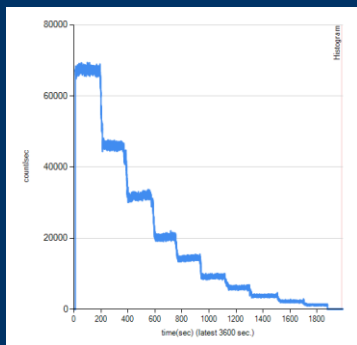
for Real-time Dosimetry

LiCAF scintillator on the edge of optical fiber provides ideal solution for real-time neutron dosimetry in  $10^5 \sim 10^{10}$  n/cm<sup>2</sup>/s.

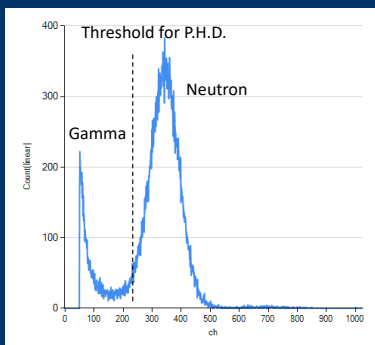


## Advanced features

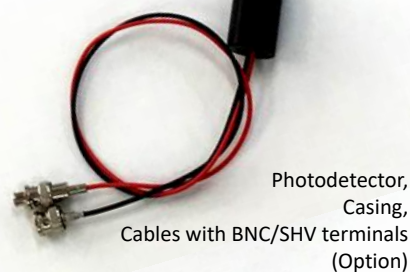
- Real-time neutron detection.
- Ultra thin design and minimal detector volume (< 1 mm<sup>3</sup>) for pinpoint measurement without disturbance on neutron field of interest.
- Waterproof and available for water phantom.
- Accurate neutron measurement with noise reduction by pulse height discrimination.
- Wide dynamic range with good linearity.
- Excellent reproducibility and robustness against radiation damage.
- Easy operation by self calibration algorithm (optional instrument and software).



Count Chart (cps)



Pulse Height Histogram



Photodetector, Casing, Cables with BNC/SHV terminals (Option)

LiCAF neutron detector rapidly responds to fluctuation of neutron field.

Pulse height discrimination to reduce noise due to gamma-ray or electronics.

# LiCAF NEUTRON DETECTOR

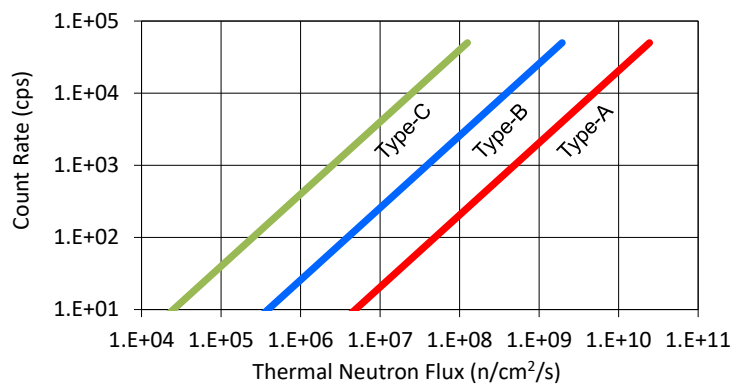
## Standard configurations of detection probe

	Type-A	Type-B	Type-C
Model number	FD-H(3-2)Q0610	FD-L(3-2)Q0610	FD-L(6-6)Q1010
Scintillator	LiCAF	LiCAF	LiCAF
Dimensions	0.3 x 0.3 x 0.2 mm <sup>3</sup>	0.3 x 0.3 x 0.2 mm <sup>3</sup>	0.6 x 0.6 x 0.6 mm <sup>3</sup>
Li-6 abundance	natural	> 95%	> 95%
Optical fiber	Quartz	Quartz	Quartz
Core diameter	0.6 mm	0.6 mm	1.0 mm
Outer diameter	< 3 mm	< 3 mm	<3 mm
Length	10 m	10 m	10 m
Connector	SMA	SMA	SMA

Ask for custom configurations.

## LiCAF characteristics

Chemical formula	LiCaAlF <sub>6</sub> :Eu
Density	2.98 g/cm <sup>3</sup>
Eu concentration	< 0.1 %
Emission wavelength	370 nm
Decay constant	1.6 μsec



Neutron sensitivity of LiCAF detector.

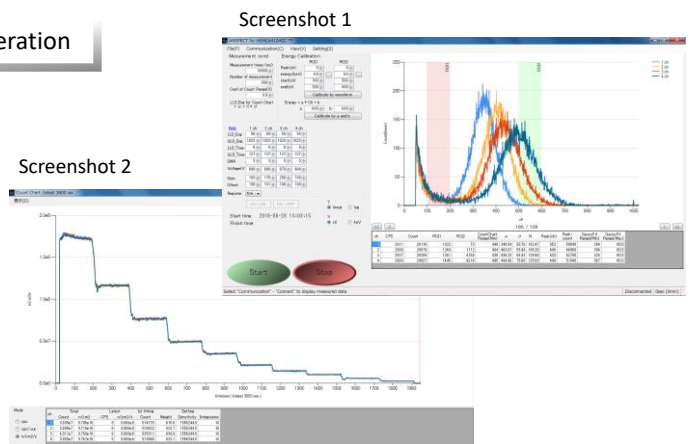
## Option

- Photodetector (Photomultiplier tube, PMT)
- Casing for PMT (SMA compatible)
- Measurement instrument and software for trial operation

Measurement instrument and software are ready for trial operation with customer's PC via USB connection. The system simultaneously operates up to four detection probes.

### System requirements

- OS: Windows 7 or later
- CPU: Intel Core i5 or later
- Communication: USB 3.0



Screenshot 1: Optimal threshold is automatically determined by peak search and gaussian fitting. Parameters are tunable by operator.

Screenshot 2: Real-time count rate (cps) or neutron flux (n/cm<sup>2</sup>/s) is displayed at every second.

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