

# *New Generation Neutron Detector*



## APPLICATIONS

- ❖ Nuclear Technology
- ❖ Material Research
- ❖ Non Destructive Testing
- ❖ Medical Science
- ❖ Biology
- ❖ Archeology/Paleontology
- ❖ Homeland Security
- ❖ Defense

## FEATURES

- ❖ Excellent Neutron Detection Efficiency
- ❖ Fast Timing for Single Neutron Detection
- ❖ Lightweight and Compact
- ❖ Robust against Environmental Stress
- ❖ Wide Dynamic Range

## Currently Available Products

	ND 25	ND 40
<b>Physical Data</b>		
Detection Unit	Neutron-Sensitive MCP	Neutron-Sensitive MCP
Active Diameter	25 mm	40 mm
Phosphor Screen Output	P43 (green)	P43 (green)
Spatial Resolution	50 $\mu\text{m}^*$	50 $\mu\text{m}^*$
Cold and Thermal (5 meV-25 meV)		
Neutron Sensitivity	30-50 %	30-50 %
Gamma Ray Sensitivity†	~ 1 %	~ 1 %
Background	< 1 ct/s/cm <sup>2</sup>	< 1 ct/s/cm <sup>2</sup>

\* dependent upon neutron beam dispersion

†for substantially reduced Gamma Ray Sensitivity see below, Coming Soon section

## Geometry

Housing	Circular, without / with Ring Power Supply	
Weight	90 g / 150 g	220 g / 350 g
Outer Diameter	50 mm / 75 mm	70 mm / 95 mm
Thickness	22 mm	22 mm

## Options

- *NDCam*: ND 25 / ND 40 with 45° Front Surface Mirror and CCD Camera
- *NDMod*: ND 25 / ND 40 Mounting Enclosure and Stand for Optical Bench or Stage
- Computer / Data Acquisition Board
- Special Housing with Pistol Grip incl. Battery Pack
- High-Voltage Ring Power Supply (Input 5 – 15V) or Rectangular PS (Input 3 – 24V)
- Different phosphor screens: P46 (fast green), P47 (fast blue)

## Coming Soon

- Large Size Square Detector: Active Area 100 mm x 100 mm (and later, 150 mm x 150mm) for large array tiling
- High spatial and high timing resolution digital readout
- All-Electronic Gamma Rejection Option (proprietary) in combination with direct digital readout: Gamma Sensitivity <math>10^{-6}</math> (gamma/neutron QDE) while preserving high thermal neutron sensitivity

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