SCIONIX

CLYC Scintillation Detectors

CLYC:Ce scintillators for neutrons and gamma rays

CLYC detects both gamma rays and neutrons: thermal neutrons through lithium enriched to 96% ^{6}Li and fast neutrons through the interaction with Cl-35. Neutrons and gamma rays are separated by pulse shape discrimination, and the gamma resolution is 4.5–5.5% FWHM at 662 keV depending on geometry.

^{6}Li enrichment	Energy resolution at 662 keV	Thermal neutron peak
96% [1]	**4.5–5.5% FWHM depending on geometry** [1]	**3.1–3.3 MeV** [1]

Specifications

DETECTOR		
Scintillator	CLYC – cerium-doped caesium lithium yttrium chloride (Cs_2LiYCl_6:Ce)	[1]
Neutron detection	Thermal neutrons through ^{6}Li and fast neutrons through Cl-35	[1]
PERFORMANCE		
Energy resolution at 662 keV	4.5–5.5% FWHM depending on geometry	[1]
Thermal neutron peak	3.1–3.3 MeV	[1]
ELECTRONICS & SIGNAL		
Pulse shape discrimination	Neutrons can be discriminated from gamma rays	[1]
MECHANICAL		
Emission wavelength	275–450 nm, maximum at 370 nm	[1]
GENERAL		
^{6}Li enrichment	96%	[1]
Density	3.31 g/cm³	[1]
Refractive index	1.81 (at 400 nm)	[1]
Decay time	1 ns, 50 ns and 1,000 ns	[1]
Light yield	Approx. 20,000 photons/MeV	[1]
Hygroscopic	Yes	[1]
Melting point	640 °C	[1]

Sources

[1] **CLYC:Ce – data sheet**
Scionix · datasheet · p. 1 · checked 2026-11-26
https://scionix.nl/wp-content/uploads/2022/09/CLYC-datasheet.pdf

Every value is taken from the manufacturer's own document; the number after the value refers to the source list. Always check against the latest datasheet before ordering.

The data comes from the manufacturer’s published documents. Manufacturers may change specifications; the current configuration and performance are confirmed in the quotation.