



XDSOXFORD

SCINTILLATION DETECTORS

TECHNICAL DATA SHEET

The FMB Oxford Scintillation detectors come in two sizes and various configurations that are tailored to meet your individual needs, whether that is an individual detector or an array for a Multi Crystal analyser.

The Scintillation detector is made up of 4 components;

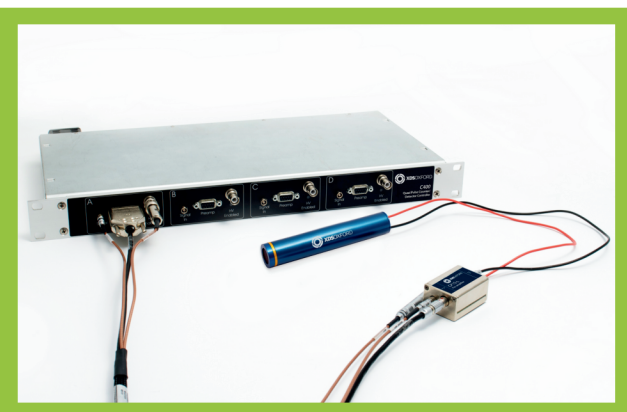
- Scintillation Detector Head,
- Pre-Amplifier Electronics (CP15),
- Signal Cable
- Pulse Processing Unit (C400).

The system comes with software for installation on a Windows PC and command protocols for LabView and EPICS database and GUIs.



Scintillation Detector System

In the detector head is a scintillation crystal, which absorbs X-rays and produces visible photons. The crystal is optically coupled to a photomultiplier tube which converts the light into an electronic signal; the amplitude of which is dependent on the incident X-ray intensity. The signal is then pre-amplified by the CP-15 before being transferred to the C400 for pulse processing.



Crystal Types

XDS Oxford offer a range of scintillation crystals and thicknesses. Your individual choice is a balance between count rate and energy resolution.

The highest performing crystal in XDS Oxford's range is Lanthanum Bromide. With a decay time of 16ns, it can register faster photon rates and output a greater light signal per photon than any other crystal types.

	Sodium Iodide	Lanthanum Bromide
Primary Decay time (ns)	250	16
Relative Light output (NaI = 100%)	100	165
Maximum Wavelength Emission (ns)	415	380

Scintillation Detector Heads

The scintillation detector heads are available in two standard sizes. Custom sizes can be made on request.

C13 Scintillation Detector Head



C30 Scintillation Detector Head



Sodium Iodide Detectors

Ø30mm NaI(Tl) Detectors

C30Na25B 2.5mm thick crystal

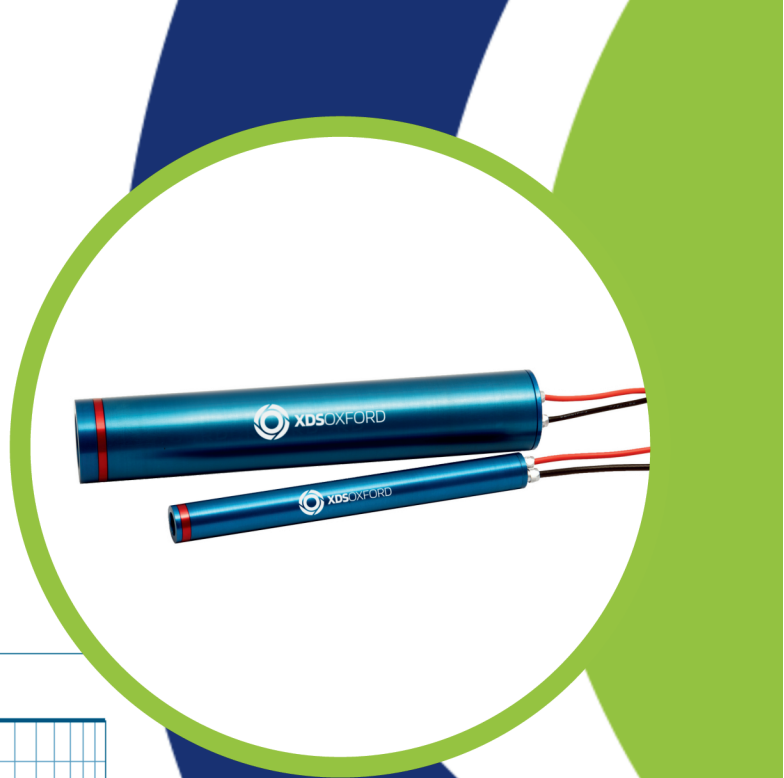
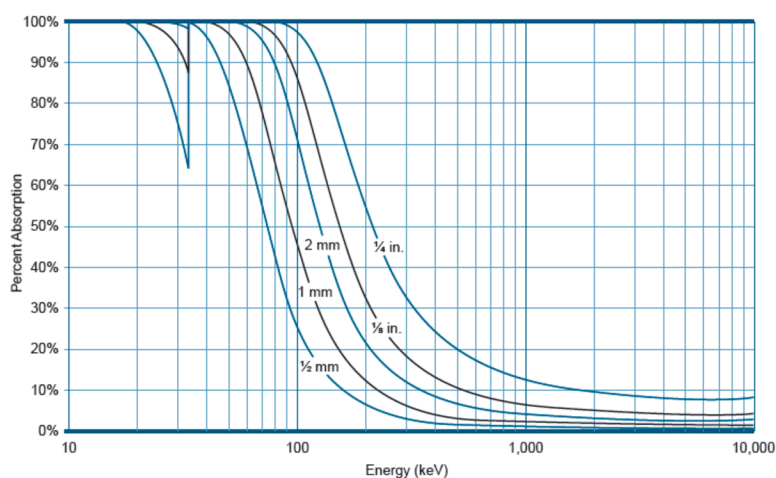
C30Na50B 5.0mm thick crystal

Ø13mm NaI(Tl) Detectors

C13Na25B 2.5mm thick crystal

C13Na50B 5.0mm thick crystal

Sodium Iodide Absorption Efficiency



Lanthanum Bromide Detectors

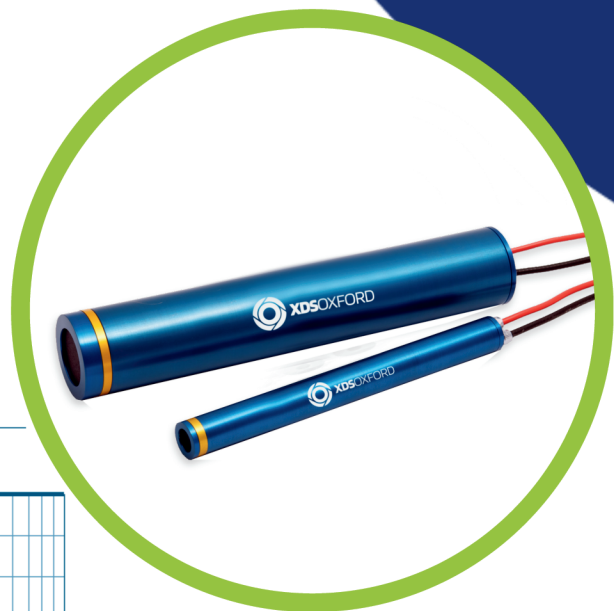
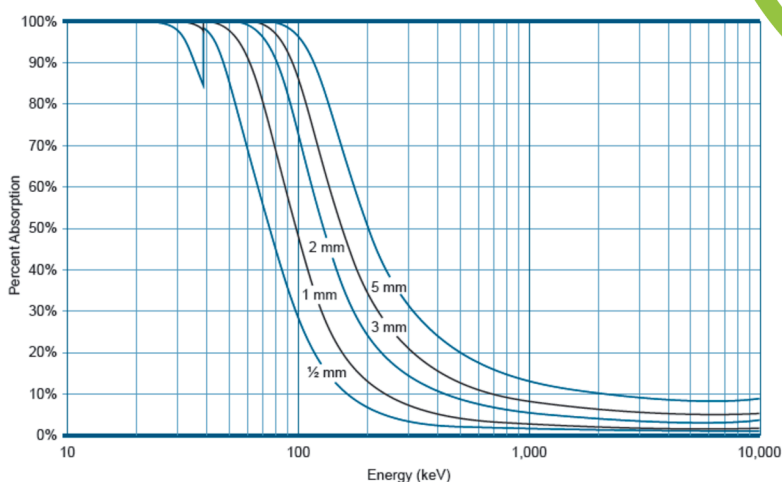
Ø30mm LaBr₃(Ce) Detectors

C30LaBr25B 2.5mm thick crystal

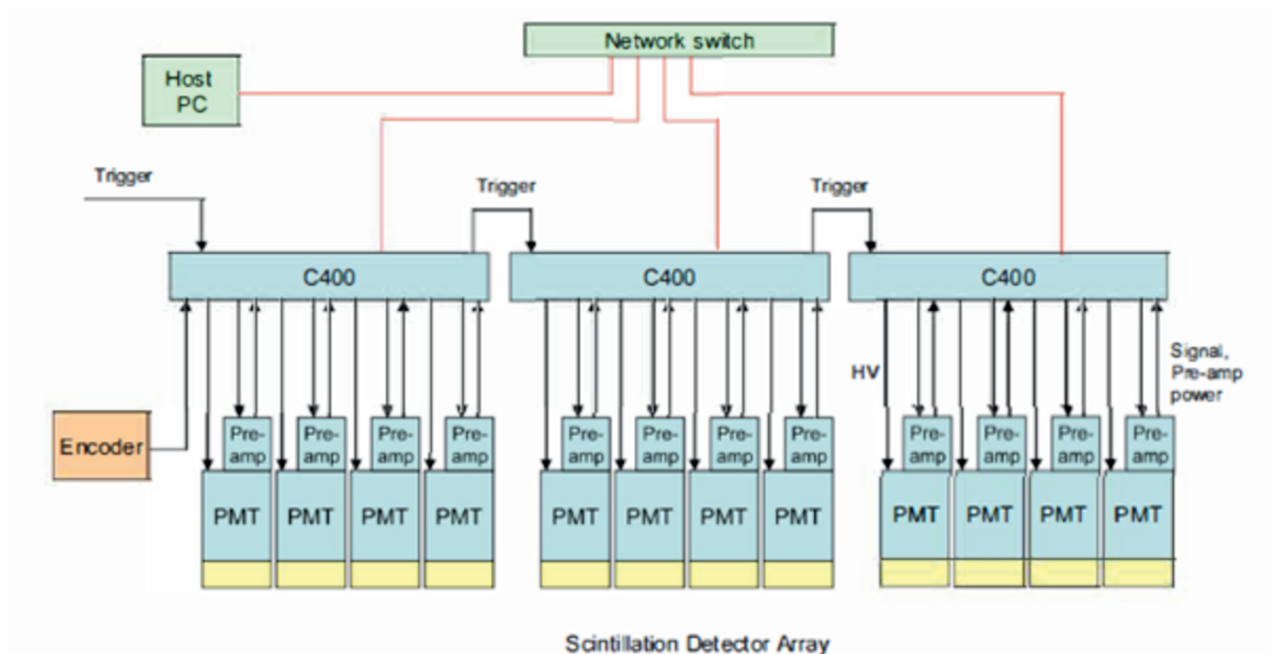
Ø13mm LaBr₃(Ce) Detectors

C13LaBr25B 2.5mm thick crystal

LaBr₃(Ce) Absorption Efficiency



Scintillation Detector Array Diagram



Scintillation Detector Cabling

Part Number	Signal Cable
WYX31905	Scint PPU Cable 5m
WYX31910	Scint PPU Cable 10m
WYX31915	Scint PPU Cable 15m
WYX31920	Scint PPU Cable 20m

Part Number	Signal Cable
WYX29505	RS232 9 Pin Cable 5m
WYX29510	RS232 9 Pin Cable 10m
WYX29515	RS232 9 Pin Cable 15m
WYX29520	RS232 9 Pin Cable 20m