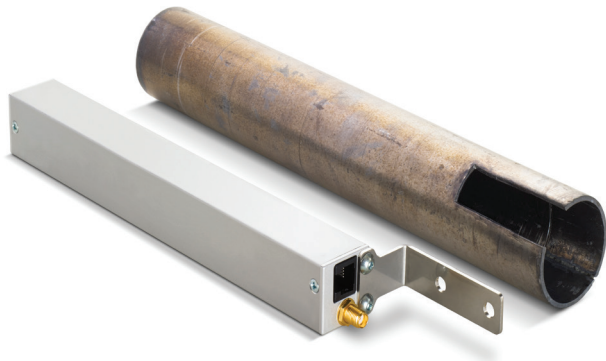


Libera BLD

The **B**eam **L**oss **D**etector



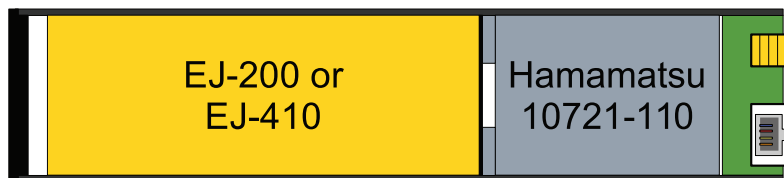
The Libera BLD is a compact beam loss detector sensitive to various lost particles. It provides the user with instant information about the relative beam loss amount through an analog output signal.

Highlights

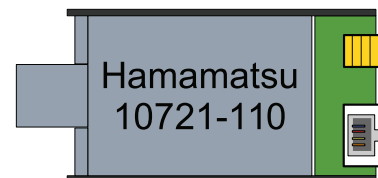
- Sensitive to various lost particles
- Compatible with optical fiber (as a scintillator)
- Compact and easy to install
- Can be calibrated in-situ
- Powered and controlled by the Libera BLM

How it works

Photons are generated when lost particles (gammas, X-rays, neutrons, etc.) pass through the scintillating material. The Photo-Multiplier Tube transforms the photons into electrical pulses and amplifies them. The readout electronics samples the electrical pulses and applies real-time processing algorithms that evaluate the loss and provide it to user in forms of numbers/counts and plots.



BLD.001, BLD.004



BLD.002, BLD.003

BLD.001 version contains the scintillator which is sensitive to any kind of lost particle. To reduce the sensitivity against X-rays, an additional lead shield (2 mm thick) can be provided.

BLD.004 version contains the scintillator which is sensitive to neutrons specifically (EJ-410).

BLD.002 and BLD.003 versions do not contain a scintillator. The SMA or FC adapter is intended for connecting the fiber cable that acts as a scintillator.

The benefit of this options is that fiber cable can be put in small and tight spots.

Specifications of the Libera BLD

Product code	BLD.001	BLD.002 BLD.003	BLD.004
Scintillator material	EJ-200	Optical fiber	EJ-410
Sensitivity to particles	gamma, X-ray		neutron
Peak wavelength of the scintillator	425 nm		450 nm
Photo multiplier tube (PMT)	Hamamatsu 10721-110		
Peak wavelength of the PMT	400 nm		
Rise time of the PMT	0.57 ns		
Supply voltage	5 V		
Gain control voltage	0 to 1 V		

Works best with: Libera Beam Loss Monitor

Libera BLM is an instrument that analyzes the loss signals from up to 4 beam loss detectors.



It provides the power supply and gain control voltage to Libera BLD via RJ-25 connectors. Fast Interlock output is supported, too.

Processing algorithms were contributed by several accelerator laboratories worldwide. EPICS, TANGO and other clients are supported.