

KL3D-50 Calibration Bench



The KL3D-50 calibration bench is intended for the precise and safe adjustment of the detector position within the horizontal ionizing radiation beam during calibration. KL3D-50 is designed as a part of a hi-tech calibration system for dose and dose rate meters.

Purpose

The KL3D-50 calibration bench is a part of the horizontal calibration/irradiation system for gamma dose / gamma dose rate meters.

The KL3D-50 moves on rails parallel with the beam axis. It is used to fix the meter tested at a desired distance from the source (or at a desired dose rate). The calibration bench makes it possible to change the distances of the meter tested from the source automatically in a range from app. 0.7 up to 10 metres (2ft 3in to 32ft 10in) as standard.

Description

The basic components of the calibration bench are as follows:

- steel rails,
- moveable trolley, electromechanically actuated,
- instrument table on a multi-purpose holder,
- PLC controller,
- 2 laser sources for correct detector position verification,
- incremental revolving sensor to measure and adjust the meter-source distance
- camera and monitor for visual checking of the meter-source distance.

The adjustment of the moveable trolley, that is the detector- source distance, is controlled by a power unit that secures its continuous start and stop. The trolley control is provided by the controller via RS-485.

Version with manual adjustment of the detector in the horizontal/vertical direction perpendicularly to the source collimator axis is done manually, by rotating the adjustable knob with a resolution of 0.1 mm.

The version with electro mechanical drive is Y-axis set done manually and Z-axis is set done by the control module in the range of ± 150 mm (5.9 in) from the reference point (1500 mm / 59 in).

Main advantages

- High versatility – calibration of meters of many different types and manufacturers;
- Reliability, excellent precision in positioning;
- Automated and safe operation controlled from control system.

Specifications

Detector-source distance	0.7 ~ 10 m (27 ~ 394 in)
Detector horizontal movement	± 300 mm (± 12 in)
Detector vertical movement	+/- 125 mm (± 5 in)
Repeatability of position adjustment	less than 1 mm (less than 0.04 in)
Trolley weight	70 kg (154 lb)
Maximum detector weight	10/70* kg (22/154* lb)
Trolley speed	0 ~ 200 mm/s (0 ~ 7.9 in/s)
Trolley dimensions without Z axis	1115 x 900 x 280 mm (43.9 x 35.4 x 11 in)
Instrument table dimensions	270 x 300 mm (11 x 12 in)
Power supply	110 / 230 VAC
Communication with host system	Serial (RS-485)

* Available with K0124-02.

Description

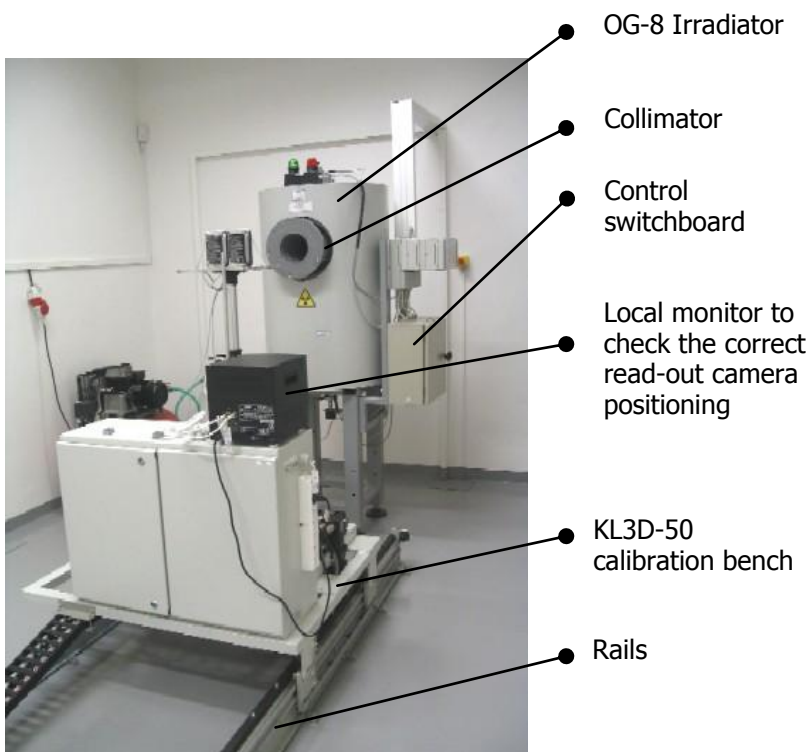
The detectors are fixed to the moveable trolley by means of either special holder according to the individual detector types or by general-purpose holder. The holders are typically made of aluminium alloy.

Two laser sources are installed to check the correct detector position. One laser source is directed toward the collimator centre and determines the detector height. The other is directed perpendicularly downward and determines the trolley position.

The calibration bench controller is installed in a control box which is fixed to the trolley.

The system is equipped with a CCTV circuit to check the adjustment of the trolley position visually by the operator. Along the trolley rails, the steel scale is assembled and is monitored by the camera. The picture is transmitted to the control room to a display where the operator can visually check the correct bench adjustment.

Calibration system / main parts and function



Optional accessories

The following equipment is available upon request.

- Elements of the measuring system, intended for acquisition of measuring data in different forms using different interfaces (serial, counters, ...)
- Local camera and local and/or remote monitor providing remote visual data readouts from the display of the meter
- Power supply system for the meters being tested
- Meters of environmental parameters in the calibration room (temperature, pressure, relative humidity)

Ordering data

When ordering, please specify the name, type and the model.

Model	Description
K0124-01	Basic option with mechanical Y and Z axis setting.
K0124-02	Basic option with electro mechanical X and Z axis setting.
K0124-xx	All system parameters and the range of delivery will be specified according to the customer's requirement.
K0123	OG-8 irradiator with the holder for 8 sources
N/A	DaRS Control and Information System for calibration laboratory.
N/A	Calibration sources – nuclide and activity on request.



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