

# YD-880 X-γ Area Radiation Monitor



## YD-880

X-γ Area Radiation Monitor

24/7 continuous online monitoring

Radiation Data Management Software

## Product Description

The YD-880 Environmental X-γ Radiation Monitoring System utilises an energy-compensated GM counter (or scintillator) as its radiation sensor, providing high sensitivity and excellent measurement stability for accurate X-ray and  $\gamma$ -ray detection. A high-speed microprocessor and a 3.5-inch colour touchscreen LCD enable streamlined, user-friendly operation. The integrated TCP/IP Ethernet interface allows the system to be configured as a standalone local area network or connected to a cloud platform for remote data management, facilitating flexible deployment.

## Features

- High-performance embedded microprocessor ensures real-time processing of monitoring data and system status.
- 3.5-inch colour touchscreen LCD (customisable to 7-inch, 8-inch, or other sizes upon request) with an intuitive operator interface for rapid familiarisation and effortless handling.
- Built-in TCP/IP Ethernet port supporting 10/100 Mbps transmission simplifies network integration and multi-unit deployment.
- Automatic cumulative dose recording with non-volatile onboard storage; data are retained during power outages, and alarm logs are accessible for manual review.
- User-configurable alarm thresholds for both dose rate and cumulative dose.
- Detector unit stores up to 4,000 alarm data records.
- Over-threshold audible alarm with short dead time ensures robust performance under high dose rate conditions.
- Onboard real-time clock displays year, month, and date; clock operation is unaffected by power interruptions.

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# YD-880 X- $\gamma$ Area Radiation Monitor

## Applications

The system is intended for X and  $\gamma$  radiation environment monitoring and radiological protection surveys across a broad range of sectors, including medical facilities, centres for disease control and prevention (CDC), environmental protection agencies, metallurgy, petroleum and petrochemical industries, chemical processing, radiological laboratories, industrial non-destructive testing (NDT) radiography, radiation processing, mining operations, and other settings where radiation monitoring is mandated.

## System Architecture

### 1. Local Area Network (LAN) Deployment

Each radiation detector unit — equipped with local data display, audible/visual alarm, and an integrated TCP/IP Ethernet interface — is connected via an Ethernet switch to form a dedicated local area network. Measurement data from all monitoring points are transmitted in real time to a local server situated within the same network. The server runs radiation data management software, which provides centralised functions including real-time data visualisation, alarm management, historical data review, and report generation. This architecture ensures low-latency monitoring and full data sovereignty within the facility's own network.

### 2. Cloud-Based Deployment (4G Wireless)

Alternatively, each detector unit may be equipped with a 4G cellular communication module. In this configuration, radiation monitoring data are transmitted wirelessly to a secure cloud platform without the need for on-site network cabling. Authorised users can access the cloud-based radiation data management software via desktop computers or Android mobile devices to view real-time readings, manage alarms, and retrieve historical data. This approach enables remote monitoring, multi-site aggregation, and convenient mobile access for personnel in the field.

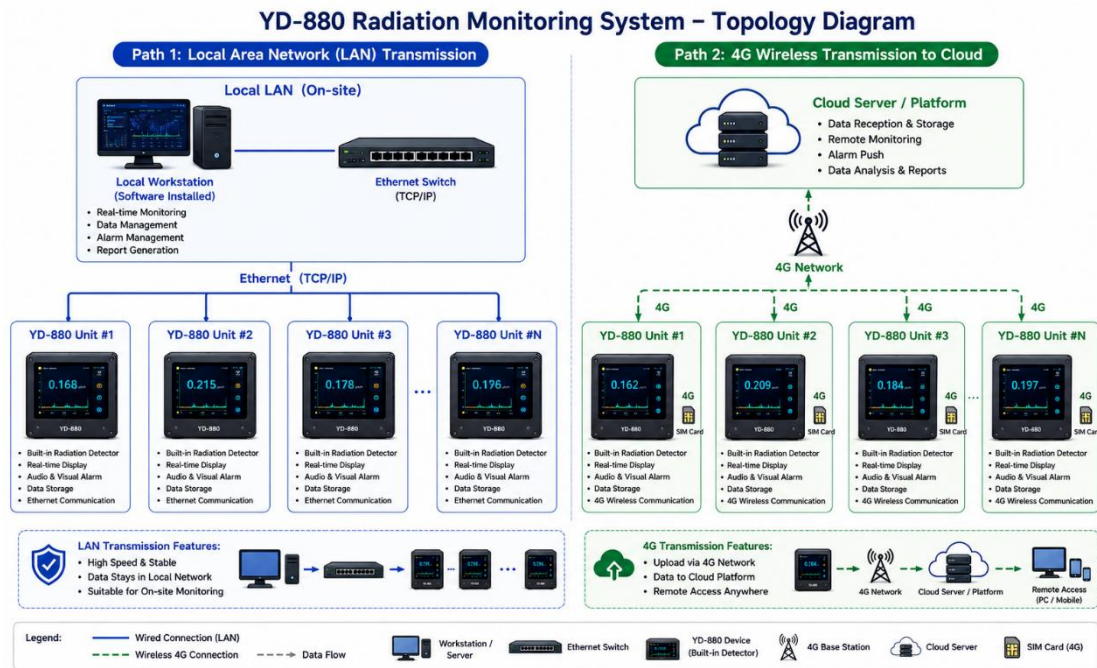
Both architectures share a common software platform, allowing seamless integration of locally and wirelessly connected units into a unified monitoring network when required.

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## GM Radiation Detector Specifications

Parameter	Specification
<b>Detector</b>	Metal GM counter tube
<b>Energy response</b>	50 keV – 5 MeV
<b>Detectable radiation types</b>	X, γ, and hard β
<b>Measurement range</b>	Ambient dose equivalent rate: 0.05 μSv/h – 1 mSv/h (optional: 0.1 μSv/h – 50 mSv/h); Cumulative dose: 0 – 9999 mSv
<b>Display</b>	3.5-inch colour touchscreen LCD; wall-mountable
<b>Sensitivity</b>	>5 cps at 1 μSv/h
<b>Relative intrinsic error</b>	≤±10 % ( <sup>137</sup> Cs, 200 μSv/h)
<b>Response time</b>	≤2 s
<b>Operating environment</b>	Temperature: –10 °C to +50 °C; relative humidity: ≤95 % (at 40 °C)

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## YD-880 X- $\gamma$ Area Radiation Monitor

Parameter	Specification
Power supply	Mains power, 220 V AC
Enclosure	Fully aluminium alloy
Weight and dimensions	Approx. 500 g; 153 × 86 × 63 mm (excluding mounting holes)

## Scintillation Detector Specifications

Parameter	Specification
Detector	Scintillator with SiPM (Silicon Photomultiplier)
Energy response	38 keV – 7 MeV
Detectable radiation types	X, $\gamma$
Measurement range	Ambient dose equivalent rate: 0.01 $\mu$ Sv/h – 10 mSv/h; Cumulative dose: 0 – 9999 mSv
Display	3.5-inch colour touchscreen LCD; wall-mountable
Sensitivity	>50 cps at 1 $\mu$ Sv/h (referenced to $^{137}\text{Cs}$ )
Relative intrinsic error	$\leq \pm 10\%$ ( $^{137}\text{Cs}$ , 100 $\mu$ Sv/h)
Response time	1 s
Update rate	1 s <sup>-1</sup> (1 update per second)
Operating environment	Temperature: –10 °C to +50 °C; relative humidity: $\leq 95\%$ (at 40 °C)
Power supply	Mains power, 220 V AC
Weight and dimensions	Approx. 500 g; 153 × 86 × 63 mm (excluding mounting holes)

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