

Product Datasheet

6150AD-15 and -18

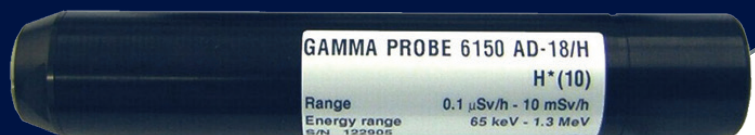
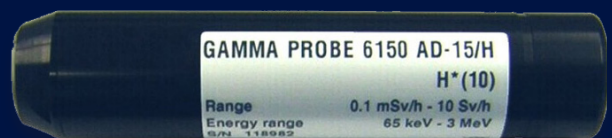
External Probes for the Dose Rate Meter
6150AD® for measuring Photon Radiation
(gamma and X-ray)

The Gamma Probes 6150AD-15 and 6150AD-18 are probes to be used with the Dose Rate Meter 6150AD to measure photon radiation (gamma and X-ray). Both models use a GM counting tube as the detector.

Both probe models differ by the type of the built-in counting tube and therefore by dose rate range. If dose rates above 10 mSv/h are unlikely to occur, the 6150AD-18 is preferred, otherwise the 6150AD-15 with its high range up to 10 Sv/h.

Just like the Dose Rate Meter 6150AD itself, the probes are only suited for measuring photon radiation (not alpha or beta radiation). There are two reasons to use an external gamma probe rather than the internal counting tube of the 6150AD:

- Place of measurement and place of reading are different, for example when measuring at places difficult to reach.
- Extending dose rate range up to 10 Sv/h with the high range probe 6150AD-15, or down to approximately 0.1 μ Sv/h with the low range probe 6150AD-18. Using the 6150AD-18 with a 6150AD2 or 6105AD6 will not extend dose rate range because all these units use the same type of counting tube. Only the first reason make such a combination meaningful.



Features

- Built-in GM counter.
6150AD-15 – useful range 1 mSv/h to 10 Sv/h
6150AD-18 – useful range 2 μ Sv/h to 10 mSv/h
- Automatic range selection.
- Smart time constant.
- Digital calibration providing high accuracy.
- Simultaneously measures current value, average value, and maximum value of dose rate, as well as dose.
- Alarm thresholds for both dose and dose rate including one freely programmable threshold each.
- May use probe cables up to 100 metres in length.
- Power supply through probe cable, does not require a battery of its own, very low current consumption.
- Robust waterproof aluminium housing.

Accessories

Probe Cable (Required)

A probe cable (not included) is required to operate a probe. The following standard lengths are available: 1.25 m, 3 m, 5 m, 10 m, 20 m, 75 m, 100 m.

Source Holder 761.2 (Optional)

The source holder 761.2 serves to mount the check source 6706 (333 kBq ¹³⁷Cs) or equivalent onto either probe type in a well-defined position. This allows reproducible radiological checks.



Specifications

6150AD-15 (/H, /E)	
Detector (Energy compensated)	GM tube ZP1300, effective length 8 mm, sensitivity approx. 100 pulses per μSv
Measuring Quantity	/H, /E models: Ambient dose equivalent $H^*(10)$ Others: Exposure dose J_s
Energy Range and Angular Range (Preferential direction is perpendicular to probe axis)	65 keV - 3 MeV $\pm 45^\circ$
Analog (A) and Digital (D) Dose Rate Range	A: 0.1 mSv/h to 10 Sv/h D: 0.00 mSv/h to 9.99 Sv/h
Useful Dose Rate Range (Low fluctuations)	1 mSv/h to 9.99 Sv/h
Linearity of Dose Rate Measurement	Deviation max. $\pm 10\%$ calibration with ^{137}Cs
Instrumental Background	Approx. 30 nSv/h
Overload Resistance	Up to 50 times the amount of the full range dose rate, but not exceeding 100 Sv/h
Digital Dose Range	6150AD1 or 6150AD2: 0 μSv - 9.99 Sv 6150AD5 or 6150AD6: 0.00 μSv - 99.9 mSv
Dose Rate Alarm Thresholds	250 $\mu\text{Sv/h}$, 1 mSv/h, 2.5 mSv/h 10 mSv/h, 25 mSv/h (disabled)
Dose Alarm Thresholds (with smart models AD6 and AD6 only)	15 mSv, 100 mSv, 250 mSv (disabled)
User Programmable Alarm Thresholds	One freely programmable threshold for each dose and dose rate (with smart models 6150AD5 and AD6 only)
Temperature Range	-30°C to + 50°C, deviation max. $\pm 10\%$ referred to indication at $\pm 20^\circ\text{C}$
Humidity	Nominal range 0 to 95% within specified temperature range
Atmospheric Pressure	Nominal range 60 to 130 kPa (600 to 1300 mbar)
Geotropism	None (no change of response as a result of gravitational effects)
Power Supply	4.75 V out of Date Rate Meter 6150AD
Battery Life	Approx. 120 hours with the 6150AD's illumination off
Housing	Black anodised aluminium, waterproof, protection class IP67 according to DIN 40050
Dimensions	Diameter 26 mm Length 118 mm
Weight	Approx. 75 g

6150AD-18 (/H, /E)	
Detector (Energy compensated)	GM tube ZP1200, effective length 40 mm, sensitivity approx. 5800 pulses per μSv
Measuring Quantity	/H, /E models: Ambient dose equivalent $H^*(10)$ Others: Exposure dose J_s
Energy Range and Angular Range (Preferential direction is perpendicular to probe axis)	65 keV - 1.5 MeV $\pm 60^\circ$
Analog (A) and Digital (D) Dose Rate Range	A: 0.1 $\mu\text{Sv/h}$ to 10 mSv/h D: 0.00 $\mu\text{Sv/h}$ to 9.99 mSv/h
Useful Dose Rate Range (Low fluctuations)	2 $\mu\text{Sv/h}$ to 9.99 mSv/h
Linearity of Dose Rate Measurement	Deviation max. $\pm 10\%$ calibration with ^{137}Cs
Instrumental Background	Approx. 10 nSv/h
Overload Resistance	Up to 50 times the amount of the full range dose rate, but not exceeding 100 Sv/h
Digital Dose Range	6150AD1 or 6150AD2: 0 μSv - 99.9 mSv 6150AD5 or 6150AD6: 0.00 μSv - 99.9 mSv
Dose Rate Alarm Thresholds	7.5 $\mu\text{Sv/h}$, 25 $\mu\text{Sv/h}$, 100 $\mu\text{Sv/h}$ 2 mSv/h, 3 mSv/h (disabled)
Dose Alarm Thresholds (with smart models AD6 and AD6 only)	1 mSv, 2 mSv (disabled)
User Programmable Alarm Thresholds	One freely programmable threshold for each dose and dose rate (with smart models 6150AD5 and AD6 only)
Temperature Range	-30°C to + 50°C, deviation max. $\pm 10\%$ referred to indication at $\pm 20^\circ\text{C}$
Humidity	Nominal range 0 to 95% within specified temperature range
Atmospheric Pressure	Nominal range 60 to 130 kPa (600 to 1300 mbar)
Geotropism	None (no change of response as a result of gravitational effects)
Power Supply	4.75 V out of Date Rate Meter 6150AD
Battery Life	Approx. 120 hours with the 6150AD's illumination off
Housing	Black anodised aluminium, waterproof, protection class IP67 according to DIN 40050
Dimensions	Diameter 26 mm Length 149 mm
Weight	Approx. 110 g

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