

GRAETZ „CE“-Telescope

for dose rate measuring system GRAETZ „X 5 C plus“



- for measurements at „hard-to-get-to“ places
- telescope made of stainless steel, smoothly extendable up to 4 m
- for measuring high dose rates from a safe distance
- simple and safe adaption to the PTB-approved basic unit GRAETZ „X 5 C plus“ without needing a plug or cable, only via the contacts by “snap-in” technique
- according to the required measuring task the user may operate with various probes of the GRAETZ programme
- indication of the dose rate at the user's location selectable upon keystroke
- untwistable connection between the probe plug connector and the electronics
- power supply from the basic unit GRAETZ „X 5 C plus“

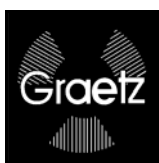


„CE“-Telescope, dose rate meter
GRAETZ „X 5 C plus“,
optionally available probes

Type	Radiation	Energy Range	Measuring Range	Measuring Size	PTB Approval No.
18509 CE	γ	55 keV – 1,3 MeV	50 μSv/h – 1 Sv/h	H* (10)	23.71 / 05.01
18529 CE	γ	70 keV – 3 MeV	0,5 mSv/h – 10 Sv/h	H* (10)	23.71 / 05.02
18545 CE	γ	40 keV – 1,3 MeV	150 nSv/h – 200 μSv/h	H* (10)	23.71 / 05.03
18550 CE	γ	40 keV – 1,3 MeV	0 μSv/h – 20 mSv/h	H* (10)	23.71 / 05.04
18 526 D	α, β, γ		0 – 20 Kcps background: 25 counts/min		
X 5 C plus	γ	40 keV – 1,3 MeV	1,0 μSv/h – 20 mSv/h	H* (10)	23.51 / 04.01



Aluminium transport case for the
„CE“-Telescope and accessories



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Electronic Personal Alarm Dosimeter GRAETZ ED150

with dose rate indication and alarm functions

- dosimeter for measuring gamma radiation and X-rays for the dose equivalent Hp (10)
- detector: energy compensated GM tube
- optimal reading of measured values by digital indication on an especially shaped LC-display
- dose rate indication upon keystroke
- reliable and safe measurement of radiation in front of the user's body (detection of a solid angle of 180 °)
- switchable acoustic single-pulse indication
- menu-driven user navigation
- storage of the dose and of set parameters even during battery change
- 4 preset alarm thresholds for
dose: 200 µSv, 500 µSv, 1000 µSv, 2000 µSv
dose rate: 7.5 µSv/h, 25 µSv/h, 40 µSv/h, 300 µSv/h

Remark:

Upon request adjustment of customised alarm thresholds by GRAETZ.

- high reliability by continuous self control and test function
- small and handy metallised housing made of high impact-proof plastic, easy to decontaminate, protection class IP67
- operating life approx. 1 year with one battery set at ambient background radiation

Technical Data

Dose indication range:	0.1 µSv – 10 Sv
Dose measuring range:	10 µSv – 1 Sv
Dose rate indication range:	0.1 µSv/h – 1.5 Sv/h
Dose rate measuring range:	1 µSv/h – 1.5 Sv/h
Energy range:	55 keV – 3 MeV
Dose alarm thresholds:	4 preset values in the range of 1 µSv – 10 Sv
Dose rate alarm thresholds:	4 preset values in the range of 1 µSv/h – 1.5 Sv/h
Temperature range:	-20°C up to +60°C
Power supply:	3 batteries 1.5 V (type LR1)
Acoustic alarm:	80 dB(A) measured in 30 cm distance
Dimensions:	(136 × 40 × 17) mm
Weight:	approx. 140 g (with batteries)
German Fire Brigades Approval No.:	DW/FW/IdF 040411

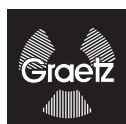
ר.ב.מ. בע"מ
בקרר ומיכון

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Subject to
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Dose Rate Meter

GRAETZ GammaTwin S

- small and handy dose rate meter for the measurement of gamma radiation and X-rays for ambient dose rate equivalent $\dot{H}^*(10)$ and ambient dose equivalent $H^*(10)$ (local dose) ¹⁾
- built-in detector: energy compensated Geiger-Müller-tube
- large, digital indication of measured values on LC-display (backlit)
- selectable simultaneous or separate indication of dose and dose rate, additionally analog indication of dose rate (logarithmic bargraph)
- display of the dose rate history graph as a search function for the detection of radioactive sources
- 4 preset dose and dose rate alarm thresholds; upon request GRAETZ changes the standard alarm thresholds according to customer requirements
- additionally switchable acoustic single-pulse indication
- automatic and continuous storage of the dose into a non-volatile memory
- storage of the dose and of set parameters even during battery change
- permanent self test
- designed for rough use, housing made of aluminium, protection class IP54 (splash proof)
- menu-driven user navigation
- supplied with robust nylon bag
- **connection facility for an external probe:**
 - 18526 D or ABG170 for contamination measurement (α , β , γ)
 - immersion counter tube ZP1083 D (β , γ)
 - NaI-scintillation probe 2002 for high-sensitive measurements (β , γ)
- **with connected probe:**
 - display of measured values in cps
 - display of the pulse rate history graph as a search function for the detection of radioactive sources or contaminations
 - pre-selectable alarm thresholds: 2x background or 3x background

¹⁾ For detecting the personal dose a measuring instrument with the measurand $H_p(10)$ is required.



GammaTwin S with
pulse probe 18526 D



GammaTwin S with
contamination probe
ABG170

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Technical Data

Indication ranges:	
- dose rate	0 nSv/h – 50 mSv/h
- dose	0 nSv – 1 Sv
Measuring ranges:	
- dose rate	0.5 μ Sv/h – 50 mSv/h
- dose	0.5 μ Sv – 1.0 Sv
- cps	acc. technical data of the connected probe
Energy range:	40 keV – 1.3 MeV
Dose rate alarm thresholds:	7.5 μ Sv/h, 25 μ Sv/h, 40 μ Sv/h, 300 μ Sv/h
Dose alarm thresholds:	200 μ Sv, 500 μ Sv, 1000 μ Sv, 2000 μ Sv
Temperature range:	-20 °C up to +60 °C
Power supply:	2 batteries 1.5V (type AAA)
Acoustic alarm:	approx. 80 dB(A) measured in 30 cm distance
Dimensions:	(26 x 66 x 103) mm
Weight:	190 g (with batteries)



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Dose Rate Meter

GRAETZ GammaTwin

- small and handy, PTB-approved ¹⁾ dose rate meter for the measurement of gamma radiation and X-rays for ambient dose rate equivalent $\dot{H}^*(10)$ and ambient dose equivalent $H^*(10)$ (local dose) ²⁾
- detector: energy compensated Geiger-Müller-tube
- large, digital indication of measured values on LC-display (backlit)
- selectable simultaneous or separate indication of dose and dose rate, additionally analog indication of dose rate (logarithmic bargraph)
- 4 preset dose and dose rate alarm thresholds; upon request GRAETZ changes the standard alarm thresholds according to customer requirements
- switchable acoustic single-pulse indication
- automatic and continuous storage of the dose into a non-volatile memory
- storage of the dose and of set parameters even at battery change
- permanent self test
- designed for rough use, housing made of aluminium, protection class IP54 (splash proof)
- menu-driven user navigation
- supplied with a robust nylon bag

¹⁾ Physikalisch-Technische Bundesanstalt, Braunschweig

²⁾ For detecting the personal dose a measuring instrument with the measurand $H_p(10)$ is required.



Technical Data	
Dose rate indication range:	0 nSv/h – 70 mSv/h
Dose rate measuring range:	0.5 μ Sv/h – 70 mSv/h
Dose indication range:	0 nSv – 1.0 Sv
Dose measuring range:	0.5 μ Sv – 1.0 Sv
Energy range:	45 keV – 1.3 MeV
Dose rate alarm thresholds:	7.5 μ Sv/h, 25 μ Sv/h, 40 μ Sv/h, 300 μ Sv/h
Dose alarm thresholds:	200 μ Sv, 500 μ Sv, 1000 μ Sv, 2000 μ Sv
Temperature range:	-20 °C up to +60 °C
Power supply:	2 batteries 1.5 V (type AAA)
Acoustic alarm:	80 dB(A) measured in 30 cm distance
PTB-Approval No.:	23.51 / 10.02
Dimensions:	(26 x 66 x 103) mm
Weight:	190 g (with batteries)

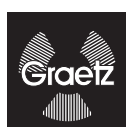
Available special models:

- **GammaTwin S** with connection facility for external probes (such as the NaI-scintillation probe 2002 for high-sensitive β - and γ -measurement or the large-area ABG170 probe for the detection of contaminations)
- **GammaTwin A** with **AlarmTwin** to be used in noisy working environments



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Electronic Personal Dosemeter GRAETZ ED150

with dose rate indication and alarm functions

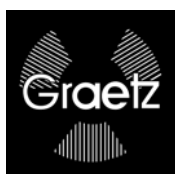
- PTB-approved¹⁾ dosimeter for measuring gamma radiation and X-rays for the dose equivalent H_p (10)
- detector: energy compensated GM-tube
- optimal reading of measured values by digital indication on an especially shaped LC-display
- dose rate indication upon keystroke
- reliable and safe measurement of radiation in front of the user's body (detection of a solid angle of 180°)
- switchable acoustic single-pulse indication
- menu-driven user navigation
- storage of dose value and set parameters also during battery change
- 4 preset alarm thresholds for dose:
200 μ Sv, 500 μ Sv, 1000 μ Sv, 2000 μ Sv
- dose rate: 7.5 μ Sv/h, 25 μ Sv/h, 40 μ Sv/h, 300 μ Sv/h
- Remark:
upon request adjustment of customer required alarm thresholds by GRAETZ
- high reliability by continuous self control and test function
- small and handy metallized housing made of high impact-proof plastic, easy to decontaminate, protection class IP67
- power supply by 3 pcs. Lady cells LR1 1.5V
- operating life approx. 1 year with one battery set at ambient background radiation



Technical Data

Measuring ranges:	
– dose	0.1 μ Sv – 10 Sv
– dose rate	1 μ Sv/h – 1.5 Sv/h
– PTB-approved dose ¹⁾	10 μ Sv – 1 Sv
Energy range:	55 keV – 3 MeV
Dose alarm thresholds:	4 preset values in the range of 1 μ Sv – 10 Sv
Dose rate alarm thresholds:	4 preset values in the range of 1 μ Sv/h – 1.5 Sv/h
Temperature range:	-20 °C up to + 60 °C
Dimensions / Weight:	(136 x 40 x 17) mm approx. 140 g
PTB – Approval No.:	23.52 / 04.01
German Fire Brigades Approval No.:	DW/FW/IdF 040411

¹⁾ PTB-approved measuring range for measurements specifically demanded by German regulations



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GRAETZ Probes

for the dose rate measuring system X5C plus

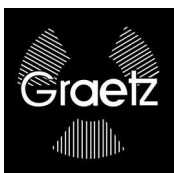
- PTB-approved gamma probes for the measurand \dot{H}^* (10) (ambient dose equivalent rate) and pulse probes (see back page) for extending the measuring range of the basic unit
- for measurements at „hard-to-get-to“ places
- Telescope Probe DE for measurements from a safe distance at high dose rates (see separate documentation)

PTB-approved gamma probes

- automatic probe identification by the basic unit
- connectable to the basic unit either directly or by using a probe cable up to a max. length of 100 m (standard length: 1,25 m)
- the basic unit automatically takes over the probe specific calibration factor
- the basic unit either displays the measurand \dot{H}^* (10) or H_x for all dose rate probes; in case of connected PTB-approved \dot{H}^* (10) dose rate probes the PTB-symbol additionally appears on the display
- the basic unit automatically displays the detected type of radiation
- underwater measurements up to a depth of 30 m by using the pressurized water protective housing

Type	Energy range	Measuring range ¹⁾	Measuring size	PTB-Approval	Dimensions Weight
18509 CE	55 keV-1,3 MeV	50µSv/h-1Sv/h	H*(10)	23.71 / 05.01	length 110 mm Ø 40 mm 150 g
18529 CE	70 keV-3 MeV	0,5mSv/h-10Sv/h	H*(10)	23.71 / 05.02	length 110 mm Ø 40 mm 150 g
18545 CE	40 keV-1,3 MeV	150 nSv/h-200µSv/h	H*(10)	23.71 / 05.03	length 345 mm Ø 25/ 40 mm 380 g
18550 CE	40 keV-1,3 MeV	10 µSv/h-20 mSv/h	H*(10)	23.71 / 05.04	length 110 mm Ø 40 mm 150 g

¹⁾ PTB-approved measuring range for measurements specifically demanded by German regulations



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