RadEye B20 / B20-ER

Multi-Purpose Survey Meter

Thermo Scientific's newest RadEye instrument
for contamination and dose rate measurements

The perfect solution for

- **Civil Defence**
- **Fire Brigades**
- **Hospitals**
- **Nuclear Industry**
- **Pharmaceutical Industry**

Features of RadEye B20 and RadEye B20-ER

- Light Weight (300 g), excellent grip with and without gloves

- Rugged and compact design, thick rubber protective cover

- Low cost of ownership with > 500 h operation time with
  2 AAA batteries – rechargeable NiMH-cells can be used

- Menu-driven user interface results in low training cost
  and immediate familiarity

- Huge internal data memory for both scaler results and
  continuous data recording

- Bright backlit LCD display – plain text messages - different
  languages can be selected

- Easy adaptation to different tasks by supervisor
  configuration, calibration, selection of measuring units

- Versatile operation modes:

  - Scaler / Timer with preset count and preset time for
    sample measurements

  - Continuous ratemeter mode for frisker operation

  - Dose rate mode

- Audible indication: single pulse or chirper mode
  proportional to count rate

- Earphone output for operation in loud environment

Order number: 4250685

The RadEye B20 is a modern compact multi-purpose
contamination meter for alpha, beta, gamma and X-ray
radiation. By virtue of an optional gamma energy filter,
gamma dose rate measurements from 17 – 1300 keV can
be performed. For emergency response purposes
alpha and beta contamination can be discriminated using
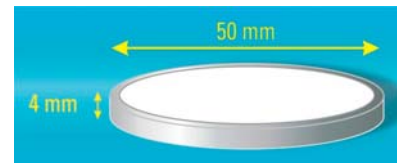another optional filter.

The instrument is part of the growing RadEye family of
high-end stand-alone meters, which are designed to
exceed the most demanding user expectations.

Part of Thermo Fisher Scientific
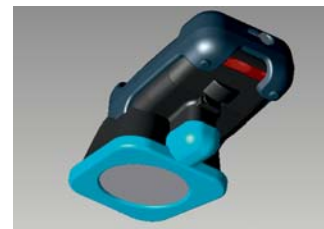
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Accessories

High precision, low energy test adapter for performance verification *Order number: 425068571*

- 9 g natural Lutetium-Oxide with 50 Bq/g (1.4 nCi/g):
  non radioactive in respect to StrSchV and NRC 49 CFR 173.403(y)
- Lu-176: half life 37,000 Million years
  - No error prone half life correction by the user
  - Check sources with short half-live are no longer required
- Extremely uniform activity content and surface emission rate
- Identical surface emission rate for each check source

Energy Filters

- Removable energy filter for X-ray & gamma dose rate measurements
  in Sv/h or Rem/h from 17 keV. *Order number: 425068582*
- Removable alpha-rejection filter for quick estimation of alpha contamination in emergency
  response situations. *Order number: 425068581*

Car Adapter Interface *Order number: 425067065*

- AAA NiMH cells can be charged in the instrument
- Continuous monitoring in the car / fire truck with illuminated display
- RS 232 / USB / Bluetooth communication options

First Responder Laboratory Kit
<u>Without</u> RadEye: *Order number: 425069011*

Pelican Case containing:
- Sample changer for use with the RadEye B20
- Sample planchets with different lip heights
- Disposable gloves, spatula
- 50 mm paper filters

Space for:
- Data cable
- User manual
- Lutetium-Oxide test adapter
- Additional RadEye (PRD or N)

Detector	1 pancake GM-tube, window dia. 44 mm (1.7"), 1.8 – 2.0 mg/cm²
Measuring Range (gamma dose rate) Uncompensated or with opt. energy filter	0 - 2 mSv/h [0 - 200 mR/h] RadEye B20 0 - 100 mSv/h [0 - 10 R/h] RadEye B20-ER
Measuring Range (contamination)	0 - 10 kcps RadEye B20 0 - 500 kcps RadEye B20-ER
2π Efficiency (ref. to 50 mm diameter without rubber sleeve)	Am-241: 28%; Co-60: 25%; Sr/Y-90: 36%; C-14: 19 %
Energy Range (with gamma energy filter)	17 keV – 1.3 MeV
Weight and maximum dimensions	300 g (0.7 lb); 13 cm x 7 cm x 6 cm (5.2" x 2.8" x 2.4")
Alarm indication	LED, sound, vibrator

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This product is available through:
JRT Associates   800-221-0111

Line	Part Number	Description
1.		**RadEye Pocket–sized Personal Radiation Detectors for Many Different Applications. For order quantities of 10+, a 5 % quantity discount is granted for all RadEye instruments (excluding accessories).**
2.	4250671	RadEye PRD, Pocket–sized personal radiation detector: NaI(Tl)-det. with PMT, gamma detection from 30 keV; energy compensated dose rate calculation (60 keV – 1.3 MeV); measuring range 1 µR/h – 25 mR/h; 1.5 cps per µR/h (Cs-137); 30 cps per µR/h for Am-241
3.	425067102	RadEye PRD-ER, Pocket-sized personal radiation detector with extended measuring range: NaI(Tl)-det. With PMT, gamma detection from 30 keV; ; measuring range 1µRem/h - 10 Rem/h (60 keV - 1.3 MeV); linearity +/- 20% for Cs-137, yellow
4.	425067104	RadEye PRD-ER, Pocket-sized personal radiation detector with extended measuring range: NaI(Tl)-det. With PMT, gamma detection from 30 keV; ; measuring range 1µRem/h - 10 Rem/h (60 keV - 1.3 MeV); linearity +/- 20% for Cs-137, black
5.	425067120	RadEye PRD, Pocket–sized personal radiation detector: NaI(Tl)-det. with PMT, gamma detection from 30 keV; H*(10) energy comp. dose rate calc. (60 keV – 1.3 MeV); meas. range 0,01 µSv/h – 250 µSv/h; 150 cps per µSv/h (Cs-137); 2000 cps per µSv/h (Am-241)
6.	425067122	RadEye PRD-ER, Pocket–sized personal radiation detector with extended measuring range: NaI(Tl)-det. with PMT, gamma detection from 30 keV; H*(10) energy comp. dose rate calc. (60 keV – 1.3 MeV); meas. range 0,01 µSv/h – 100 mSv/h; linearity +/- 20 % for
7.	4250674	RadEye G, Pocket–sized wide range survey meter: energy compensated GM-tube, 45 keV – 1.3 MeV; measuring range 5 µR/h – 10 R/h; high sensitivity: 17 cps per mR/h, 2 dose and dose rate alarm levels; black label
8.	425067401	RadEye G, Pocket–sized wide range survey meter: energy compensated GM-tube, 45 keV – 1.3 MeV; measuring range 5 µR/h – 10 R/h; high sensitivity: 17 cps per mR/h, 2 dose and dose rate alarm levels; yellow label
9.	4250676	RadEye G-10, Pocket–sized wide range survey meter: energy compensated GM-tube according H*(10): 45 keV – 1.3 MeV; measuring range 0,05 µSv/h – 100 mSv/h; high sensitivity: 1.7 cps per µSv/h; 2 dose and dose rate alarm levels; red label
10.	425067602	RadEye G-10, Pocket–sized wide range survey meter: energy compensated GM-tube according H*(10): 45 keV – 1.3 MeV; measuring range 0,05 µSv/h – 100 mSv/h; high sensitivity: 1.7 cps per µSv/h; 2 dose and dose rate alarm levels, white label
11.	4250677	RadEye N, Neutron pocket meter with excellent gamma rejection, He-3 tube with 10 bar, must not be taken on board of an airplane
12.	4250678	RadEye NL, Neutron pocket meter with excellent gamma rejection, He-3 tube with 2.5 bar, can be taken on board of an airplane
13.	4250683	RadEye AB100, 100 cm² alpha/beta discriminating scintillation detector, including hard shell transport case
14.	4250685	RadEye B20, Alpha, Beta, Gamma Surveymeter, measuring range up to 10 kcps, Beta and Gamma dose rate up to 2 mSv/h; 200 mRem/h; linearity +/- 10 %, including hard shell transport case

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Line	Part Number	Description
15.	425068510	RadEye B20-ER, Alpha, Beta, Gamma Surveymeter, extended measuring range up to 500 kcps, Beta and Gamma dose rate up to 100 mSv/h; 10 Rem/h, linearity +/- 10 %, including hard shell transport case
16.	4250686	RadEye G20 gamma survey meter with energy compensation according to exposure rate (R/h), measuring range up to 200 mR/h, including hard shell transport case
17.	4250687	RadEye G20-10, Gamma Survey Meter, from 17 keV, measuring range up to 2 mSv/h; 200 mRem/h, including hard shell transport case
18.	425068610	RadEye G20-ER gamma survey meter with energy compensation according to exposure rate (R/h), extended measuring range up to 10 R/h, including hard shell transport case
19.	425068710	RadEye G20-ER10, Gamma Survey Meter, from 17 keV, extended measuring range up to 100 mSv/h; 10 Rem/h, including hard shell transport case
20.	4250680	RadEye Area Monitor:(RadEye sold separately): Enclosure w/ transparent door; Car Adapter; AC/DC Adapter w/ 2 m cable & Bulgin connector; Red Light on enclosure top; RS 232 interface 9 pin D-SUB connector (watertight); Bulgin connector for ext. Alarm unit
21.	4250692	RadEye GX multi purpose survey meter for connection of external GM-detectors via MHV high voltage connector
22.	4250693	RadEye SX multi purpose survey meter for connection of external scintillation-detectors via MHV high voltage connector
23.	4250695	RadEye PX/NRD complete set (consisting of RadEyePX, NRD-H2 detector, Holding bracket and high voltage cable)
24.	4250694	RadEye PX survey meter for conection of external proposal counters via MHV high voltage connector
25.	4250697	RadEye HEC portable alpha/beta sampler changer

RadEye Accessories

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Line	Part Number	Description
1.		**RadEye Accessories**
2.		Testadapters
3.	425067071	Test-Adapter RadEye PRD, 36 g Lu2O3
4.	425067072	Test-Adapter RadEye G, G-10, 200 kBq Ba-133
5.	425067075CS137	Test-Adapter RadEye G, G-10, 5 µCi Cs-137
6.	425068371	Test-Adapter RadEye AB100, 82g, Lu2O3
7.	425068571	Test-Adapter RadEye B20, 9 g Lu2O3
8.	4254948	Test-Adapter RadEye G20 and portable NBR-Detectors, 50 g Lu2O3
9.		Holsters and bags
10.	425067044	Safety lanyard and transparent plastic bag for RadEye PRD, N, NL, G and G-10 versions
11.	425067046	Holster for RadEye PRD, N, NL, G and G-10 versions. Sized to insert instrument with rubber shock protection.
12.	425067710	RadEye N/NL Rem-holster with Boron-inlet for dose rate measurement
13.	425068519	Holster for RadEye G-20 and B-20 versions. Sized to insert instrument with rubber shock protection.
14.	SM149142238	Holster for up to 2 RadEye B-20 energy filters
15.	SM149142246	Outdoor underwater pag WP-550
16.		Extension poles
17.	425067075	Short handle
18.	425067076	Aluminium extension, length 1.2 m
19.	425067077	Telescopic extension up to 4 m
20.	425067078	RadEye Adapter with connector to 425067075, 425067076, 425067077
21.	425067177	Telescopic extension up to 1.5 m (including holder for RadEye)
22.		Energy filter for RadEye
23.	425068581	Alpha Rejection filter for RadEye B20
24.	425068582	Gamma Filter for RadEye B20, H*(10) (deep dose equivalent) compensation
25.	425068583	Gamma Filter for RadEye B20, H'07 (shallow dose equivalent) compensation
26.		Data communication
27.	425067087	RadEye Btcomm battery cover
28.	425069951	User Software "RadEye.Exe"
29.	425069952	Calibration Software "Cal-RadEye.Exe"
30.	4254026	Data cable USB for FH 40 G or RadEye desktop holder 425067060

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RadEye Accessories

Line	Part Number	Description
31.	4254029	Data cable RS 232 for FH 40 G and RadEye desktop holder
32.	SM168535225	RS 232 Adapter cable, 9 pin, 5 m, fits to docking station 425067065 and area monitor 425067080
33.	SM168535251	RS 232 to USB adapter for data cable 4254029, docking station 425067065 and area monitor 425067080
34.		Wall, vehicle, bike, instrument adapters
35.	425067059	Flat mounting kit, including plates for screw- and adhesive mounting; fits to docking station 425067065 or desktop holder 425067060
36.	425067060	Desktop holder for RadEye (data cable not included)
37.	425067061	Goose neck screw-mounting kit, fits to docking station 425067065 or desktop holder 425067060
38.	425067062	Pivot arm screw-mounting kit, fits to docking station 425067065 or desktop holder 425067060
39.	425067063	Knuckle joint screw-mounting kit, fits to docking station 425067065 or desktop holder 425067060
40.	425067064	Goose neck mounting kit with suction cup for instanteneous attachment to the windshield, fits to docking station 425067065 or desktop holder 425067060
41.	425067079	RadEye bike holder
42.	425069501	Adapter for RadEye PX/NRD combination
43.	425522005	Holder with vacuum cap and goose neck
44.		Other
45.	425067073	RadEye holder for second RadEye mounted to moderator (425067110)
46.	425067110	RadEye N/NL Moderator
47.	425067193	RADEYE SAFETY KIT FOR PRD / PRD-ER
48.	425068010	Additional External Alarm Unit consisting of: 5 m cable with Bulgin connector fitting to connector at 4250680; Small box with latching relay and acknowledge button; 5 m cable between box and horn+strobe; Red strobe + horn with wall mount holder
49.	42506901001	Sample changer for RadEye B20
50.	42506901002	Brass sample holder for RadEye PRD (material analysis of steel samples)
51.	425069011	First Responder laboratory Kit for RadEye B20 and B20-ER, including sample changer 42506901001, various dishes, gloves, spatula and filters
52.	KT162245107	MHV right angle plug for GX/SX/PX
53.		Earphone/Headphone
54.	425067034	Battery compartment lid with inductive charging circuitry
55.	425067037	Earphone for RadEye series
56.	425067042	Headset for RadEye

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Line	Part Number	Description
57.		Chargers
58.	425067065	Docking station ("car adaptor") with charging circuitry (8-30 V DC, cigarette lighter plug), alarm relay and RS 232 interface. 2 ea. AAA NiMH rechargeable batteries included
59.	425067066	AC/DC converter for AC-supply of docking station 425067065 (100 – 240 V AC; 15 V DC, 600 mA), US, UK, EU connector
60.	425067080	Inductive charger (11.5 - 15 V DC) with coiled cable and cigarette lighter plug; requires scecial battery compartement lid 425067034
61.	425067083	Inductive charger AC-table version