RaySafe X2 Solo

Specifications

RaySafe™

All you need for your modalities

RaySafe X2 Solo is a new product line from RaySafe that covers the measurement needs of your specific X-ray modalities. It's based on the same technology as RaySafe X2, highly esteemed for its user-friendliness and performance, but instead of multi-modality capability, each model meets specific needs. Within your X-ray modalities the X2 Solo will meet all your QA or service measurement needs.

RaySafe X2 Solo comes in two different models; RaySafe X2 Solo R/F and RaySafe X2 Solo DENT, both with or without mAs. The DENT version also includes the X2 Panoramic Holder for easy positioning of the sensor on panoramic X-ray machines.

X2 GENERAL

EMC	According to IEC 61326-1
SAFETY	According to IEC 61010-1
X-RAY METERS STANDARD	Complies with IEC 61674
EXPOSURES NEEDED	One
USB CABLES	2 m (6.6 ft), 5 m (16.4 ft) and 5 m active extender
SIZE BASE UNIT	34 x 85 x 154 mm (1.3 x 3.3 x 6.1 in)
WEIGHT BASE UNIT	521 g (18.4 oz)
OPERATING TEMPERATURE	15 – 35 °C (59 – 95 °F)
STORAGE TEMPERATURE	-25 – 70 °C (-13 – 158 °F)
POWER SOURCE	Rechargeable Li ion battery
BATTERY TIME	~ 10 hours intensive usage
BATTERY TESTED	According to UN 38.3
DISPLAY	4.3" LCD with capacitive touch
MEMORY	~ 10000 latest exposures
SOFTWARE	X2 View for data handling and analysis. Also exports data to Microsoft Excel.

X2 mAs

mAs	
RANGE	0.001 – 9999 mAs
RESOLUTION	0.001 mAs
UNCERTAINTY	1 %
mA	
RANGE (PEAK)	0.1 – 1500 mA
RESOLUTION	0.01 mA
UNCERTAINTY	1 %
TIME	
RANGE	1 ms – 999 s
RESOLUTION	0.1 ms
BANDWIDTH	1 kHz
UNCERTAINTY	0.5 %
PULSES	
RANGE	1 – 9999 pulses
RESOLUTION	1 pulse
PULSE RATE	
RANGE	0.1 – 200 pulses/s
RESOLUTION	0.1 pulse/s
mAs/PULSE	
RANGE	0.001 – 9999 mAs
RESOLUTION	0.001 mAs
UNCERTAINTY	1 %
WAVEFORM	
RESOLUTION	125 µs*
BANDWIDTH	1 kHz

* automatically reduced for exposures longer than 3 s

UNFORS RAYSAFE UNCERTAINTY DEFINITION

The expanded uncertainty is stated as the combined uncertainty of measurement multiplied by the coverage factor k=2, which assuming a normal distribution has a coverage probability of 95 % (complies with GUM by ISO (1995, ISBN 92-67-10188-9)).

Instrument specifications are subject to purchased configuration. All specifications may change without notice.

X2 R/F SENSOR

WEIGHT	42 g (1.5 oz)
SIZE	14 x 22 x 79 mm (0.5 x 0.9 x 3.1 in)

ACTIVE COMPENSATION

Beam quality independent for the following ranges:

DOSE/DOSE RATE	40 – 150 kVp, 1 – 14 mm Al HVL
kVp	40 – 150 kVp, up to 1 mm Cu
TF	60 – 120 kVp, up to 1 mm Cu

DOSE

RANGE	1 nGy – 9999 Gy (0.1 µR – 9999 R)
UNCERTAINTY	5 % or 5 nGy (0.5 µR)

DOSE RATE

RANGE	1 nGy/s – 500 mGy/s (5 µR/min – 3400 R/min)
RESOLUTION	1 nGy/s (5 µR/min)
TRIG LEVEL	50 nGy/s (340 µR/min)
UNCERTAINTY	5 % or 10 nGy/s (70 µR/min) x duty cycle

kVp

RANGE	40 – 150 kVp
MINIMUM DOSE	50 µGy (6 mR)
MINIMUM DOSE RATE (PEAK)	10 µGy/s (70 mR/min)
UNCERTAINTY	2 %

HVL (OPTIONAL)

RANGE	1 – 14 mm Al
MINIMUM DOSE	1 µGy (120 µR)
MINIMUM DOSE RATE (PEAK)	0.5 µGy/s (3.5 mR/min) at > 70 kV 2.5 µGy/s (17 mR/min) at 50 kV
UNCERTAINTY	10 %

TOTAL FILTRATION (OPTIONAL)

RANGE	1.5 – 35 mm Al
MINIMUM DOSE	50 µGy (6 mR)
MINIMUM DOSE RATE (PEAK)	10 µGy/s (70 mR/min)
UNCERTAINTY	10 % or 0.3 mm Al

TIME

RANGE	1 ms – 999 s
RESOLUTION	0.1 ms
BANDWIDTH	4 Hz – 4 kHz*
UNCERTAINTY	0.5 %

* automatically adjusted depending on signal level

PULSES

RANGE	1 – 9999 pulses
MINIMUM DOSE RATE (PEAK)	0.5 µGy/s (3.5 mR/min)

PULSE RATE

RANGE	0.1 – 200 pulses/s
MINIMUM DOSE RATE (PEAK)	0.5 µGy/s (3.5 mR/min)

DOSE/PULSE

RANGE	1 nGy/pulse – 999 Gy/pulse (0.1 µR/pulse – 999 R/pulse)
MINIMUM DOSE RATE (PEAK)	0.5 µGy/s (3.5 mR/min)

WAVEFORMS

RESOLUTION	62.5 µs*
BANDWIDTH kV	0.1 – 0.4 kHz**
BANDWIDTH DOSE RATE	4 Hz – 4 kHz**

* automatically reduced for exposures longer than 1.5 s
** automatically adjusted depending on signal level

X2 DENT SENSOR

WEIGHT	42 g (1.5 oz)
SIZE	14 x 22 x 79 mm (0.5 x 0.9 x 3.1 in)

ACTIVE COMPENSATION

Beam quality independent for the following ranges:

DOSE/DOSE RATE	40 – 130 kVp, 1 – 14 mm Al HVL
kVp	40 – 130 kVp, up to 1 mm Cu
TF	60 – 120 kVp, up to 1 mm Cu

DOSE

RANGE	1 nGy – 9999 Gy (0.1 µR – 9999 R)
UNCERTAINTY	5 % or 5 nGy (0.5 µR)

DOSE RATE

RANGE	1 µGy/s – 500 mGy/s (5 mR/min – 3400 R/min)
RESOLUTION	1 nGy/s (5 µR/min)
TRIG LEVEL	1 µGy/s (7 mR/min)
UNCERTAINTY	5 %

kVp

RANGE	40 – 130 kVp
MINIMUM DOSE	50 µGy (6 mR)
MINIMUM DOSE RATE (PEAK)	10 µGy/s (70 mR/min)
UNCERTAINTY	2 %

HVL (OPTIONAL)

RANGE	1 – 14 mm Al
MINIMUM DOSE	1 µGy (120 µR)
MINIMUM DOSE RATE (PEAK)	1 µGy/s (7 mR/min) at > 70 kV 2.5 µGy/s (17 mR/min) at 50 kV
UNCERTAINTY	10 %

TOTAL FILTRATION (OPTIONAL)

RANGE	1.5 – 35 mm Al
MINIMUM DOSE	50 µGy (6 mR)
MINIMUM DOSE RATE (PEAK)	10 µGy/s (70 mR/min)
UNCERTAINTY	10 % or 0.3 mm Al

TIME

RANGE	1 ms – 999 s
RESOLUTION	0.1 ms
BANDWIDTH	4 Hz – 4 kHz*
UNCERTAINTY	0.5 %

* automatically adjusted depending on signal level

PULSES

RANGE	1 – 9999 pulses

PULSE RATE

RANGE	0.1 – 200 pulses/s

DOSE/PULSE

RANGE	1 nGy/pulse – 999 Gy/pulse (0.1 µR/pulse – 999 R/pulse)

WAVEFORMS

RESOLUTION	62.5 µs*
BANDWIDTH kV	0.1 – 0.4 kHz**
BANDWIDTH DOSE RATE	4 Hz – 4 kHz**

* automatically reduced for exposures longer than 1.5 s
** automatically adjusted depending on signal level

Unfors RaySafe offers comprehensive solutions for the X-ray room to measure the performance of X-ray equipment and to monitor medical staff dose in real-time.

RaySafe helps you avoid unnecessary radiation.

www.raysafe.com

RaySafe™