

The MS6020 is one of the multipurpose monitors for detecting and measuring radioactivity more complete and versatile on the market due to its features, its wide range of detectors and accessories, as well as it is easy-to-use.

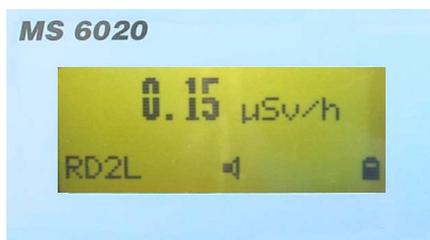
- Interchangeable external contamination and radiation probes.
- Identification of the probes and automatic configuration with its parameters (thresholds, factors, etc).
- Ratemeter mode and Counter-Timer mode with adjustable counting time.
- Hold and Search functions.
- Compact, portable and lightweight.

In order to adapt to any application, there is a complete set of contamination probes (Alpha, Beta, Gamma) and radiation probes (Gamma, X-Rays, Beta) with different kind of detectors (Geiger-Müller, proportional, scintillation), different measuring ranges and different energy ranges.

The way to change the probes is very easy. In the starting up, the MS6020 recognizes the probe and applies automatically its parameters (calibration factors, alarm thresholds, etc.). Any change of the parameters is stored into the probe, so **the probes can be connected to any other MS6020 unit**. The contamination probes have a totally free library of 7 isotopes in which the user can set all the parameters.

Its calculus system does all the necessary mathematical operations for the conversion of the events detected to the scientific unit (cps, cpm, Bq, Bq/cm², or µSv/h, µSv) selected by the user. In addition, it applies the **correction of dead time typical of some detectors**, as well as the subtraction of background for the units of activity (Bq and Bq/cm²).

The MS6020 checks constantly the levels of alarm, the level of the battery, the state of the probe, etc., warning immediately about any incident or anomaly.



The MS6020 allows to get different types of measures depending on the application. The ratemeter mode has a **dynamic constant of time**, that is to say, the counting time is fixed as long as the deviation does not overcome the 3-sigma value, in which case, an automatic update of the measure will take place. **This does that the measure is stable but at the same time, the response of the equipment is very fast.**

For measures which need long counting time or bigger accuracy (measures of smear, calibrations, etc.), the equipment has a **Counter-Timer in which the user can set the counting time.**



Hold function captures the maximum of the measure. This function is very useful in applications in which the duration of the field of radiation can be very short (milliseconds), such as, for example in X-Rays shots, or in the detection of sources in movement.

Another interesting function is the **Search function**, which shows an analogical bar that is updated very frequently, making easier to see on the display the existence of radioactivity, for example when a sweep of a surface is done.

The model with internal data memory allows to store the measures, including the date, hour, and location or comment. The storing can be done manual or automatic, with adjustable times of sampling. An easy-to-use software allows the data download and to store them in a PC.

A wide variety of optional accessories is available, that allow that the MS6020 adapts to different applications. For example, the equipment and probe can be easily coupled on a telescopic and lightweight pole, which has an articulated probe holder to achieve measures in places of difficult access. Besides, they can be easily removed from the pole.

For the check-up of hands, clothes, etc, the equipment and the probes of great surface can be easily coupled on wall holders, turning them into a fixed system. However, they keep the advantages of portable equipment, since they can be easily removed to be able to do measures in any other location. Other interesting accessories are the transport suitcases of different sizes.

| Available models and options | Basic functions | Internal detector | With internal data memory | Rechargeable 4xAA batteries |
|------------------------------|-----------------|-------------------|---------------------------|-----------------------------|
| MS6020 (ref. LAM003V05) | ✓ | | | ✓ |
| MS6020-M (ref. LAM003V06) | ✓ | | ✓ | ✓ |
| MS6020-R (ref. LAM003V07) | ✓ | ✓ | | ✓ |
| MS6020-RM (ref. LAM003V08) | ✓ | ✓ | ✓ | ✓ |



Technical specifications:

| | |
|-------------------------|---|
| Display: | LCD 16x4, Illumination controlled by keyboard. |
| LED: | Red, rate indicator |
| Buzzer: | Piezoelectric, internal |
| Keyboard: | 17 push-buttons, shortcut function keys |
| Power: | 4 x AA rechargeable 1,2V batteries |
| Dimensions: | 211x100x26 mm. |
| Weight: | 450 g |
| Measuring range: | See specification of internal detector or external probes |

Technical specifications of model with internal detector:

| | |
|---|----------------------------------|
| Type of detector: | Energy compensated Geiger-Müller |
| Type of measure: | Gamma+XRays |
| Measuring range: | 0.5 µSv/h - 10 mSv/h |
| Indication range: | 0.05 µSv/h - 10 mSv/h |
| Sensibility (¹³⁷Cs): | 750 cps/mSv/h |
| Energy range (¹³⁷Cs): | 40 KeV - 1.3 MeV |

Contamination probes:

CT115BG
(ref. LAM010V01)

Probe with a great surface proportional detector. Suitable for measuring beta and gamma contamination, especially low energy gamma, such as Iodine-125.

| | |
|--|---|
| Type of detector: | Proportional (Xenon) |
| Type of measure: | -Only Alpha (New function) -Alpha+Beta+Gamma |
| Detector window: | Aluminium, 3 mg/cm ² |
| Total area: | 170 cm ² |
| Measuring range: | 50000 cps |
| Sensibility (¹³⁷Cs): | 60 cps/µSv/h |
| Dimensions: | 212 x 119 x 85 mm |
| Weight: | 800 g |
| Case: | Aluminium |

CT115AB
(ref. LAM006V01)

Probe with a great surface proportional detector. Suitable for measuring Alpha+Beta+Gamma. Besides, it allows to measure only Alpha contamination.

| | |
|--|----------------------------------|
| Type of detector: | Proportional (Argon) |
| Type of measure: | -Only Alpha -Alpha+Beta+Gamma |
| Detector window: | Aluminium, 2 mg/cm ² |
| Total area: | 170 cm ² |
| Measuring range: | 50000 cps |
| Sensibility (¹³⁷Cs): | 30 cps/µSv/h |
| Dimensions: | 212 x 119 x 85 mm |
| Weight: | 800 g |
| Case: | Aluminium |

CT15
(ref. LAM005V01)

Probe with Geiger detector, with window of 15 cm², for measuring Alpha+Beta+Gamma contamination.

| | |
|--|--------------------------------|
| Type of detector: | Geiger-Müller |
| Type of measure: | Alpha+Beta+Gamma |
| Detector window: | Mica, 1,5-2 mg/cm ² |
| Total area: | 15 cm ² |
| Measuring range: | 10000 cps |
| Sensibility (¹³⁷Cs): | 60 cps/µSv/h |
| Dimensions: | 140 x Ø65 mm |
| Weight: | 250 g |
| Case: | Aluminium |

CT1C
(ref. LAM015V01)

Probe with scintillation detector. Suitable for measuring low energy radiactivity (Beta+Gamma+XRays)

| | |
|--------------------------|--|
| Type of detector: | Scintillation |
| Type of measure: | NaI(Tl) 25x2.5 mm. Beta+Gamma+XRays |
| Energy range: | 10 KeV – 200 KeV |
| Detector window: | Aluminium, 0.025 mm. |
| Total area: | 5 cm ² |
| Measuring range: | 10000 cps |
| Dimensions: | 200 mm. x Ø 35 mm |
| Weight: | 190 g |
| Case: | Aluminium |

Radiation probes:

RD1L
(ref. LAM009V01)

Probe with Geiger detector. Suitable for measuring Gamma+XRays radiation up to 10 mSv/h.

| | |
|---|----------------------------------|
| Type of detector: | Energy compensated Geiger-Müller |
| Type of measure: | Gamma+XRays |
| Measuring range: | 0.1 µSv/h - 10 mSv/h |
| Indication range: | 0.01 µSv/h - 10 mSv/h |
| Sensibility (¹³⁷Cs): | 1800 cps/mSv/h |
| Energy range (¹³⁷Cs): | 35 KeV - 1.3 MeV |
| Dimensions: | 135 mm. x Ø 35 mm |
| Weight: | 150 g |
| Case: | Aluminium |

RD1W
(ref. LAM031V01)

Probe similar to RD1L model but with waterproof case. Suitable for measuring in outdoor location or submerged in water.

| | |
|---|----------------------------------|
| Type of detector: | Energy compensated Geiger-Müller |
| Type of measure: | Gamma+XRays |
| Measuring range: | 0.1 µSv/h - 10 mSv/h |
| Indication range: | 0.01 µSv/h - 10 mSv/h |
| Sensibility (¹³⁷Cs): | 1800 cps/mSv/h |
| Energy range (¹³⁷Cs): | 35 KeV - 1.3 MeV |
| Dimensions: | 148 mm. x Ø 35 mm |
| Weight: | 165 g |
| Case: | Alum., waterproof IP68 |

RD2H
(ref. LAM020V01)

Probe with Geiger detector. Suitable for measuring Gamma radiation up to 200 mSv/h.

| | |
|---|----------------------------------|
| Type of detector: | Energy compensated Geiger-Müller |
| Type of measure: | Gamma+XRays |
| Measuring range: | 1 µSv/h - 200 mSv/h |
| Indication range: | 0.1 µSv/h - 200 mSv/h |
| Sensibility (¹³⁷Cs): | 180 cps/mSv/h |
| Energy range (¹³⁷Cs): | 50 KeV - 1.3 MeV |
| Dimensions: | 135 mm. x Ø 35 mm |
| Weight: | 150 g |
| Case: | Aluminium |

RD2W
(ref. LAM032V01)

Probe similar to RD2H model but with waterproof case. Suitable for measuring in outdoor location or submerged in water.

| | |
|---|----------------------------------|
| Type of detector: | Energy compensated Geiger-Müller |
| Type of measure: | Gamma+XRays |
| Measuring range: | 1 µSv/h - 200 mSv/h |
| Indication range: | 0.1 µSv/h - 200 mSv/h |
| Sensibility (¹³⁷Cs): | 180 cps/mSv/h |
| Energy range (¹³⁷Cs): | 50 KeV - 1.3 MeV |
| Dimensions: | 148 mm. x Ø 35 mm |
| Weight: | 165 g |
| Case: | Alum., waterproof IP68 |

RD2L
(ref. LAM012V01)

Probe similar to RD1L model but with an opened window detector for measuring beta radiation.

| | |
|---|----------------------------------|
| Type of detector: | Energy compensated Geiger-Müller |
| Type of measure: | Gamma+XRays+Beta |
| Measuring range: | 0.1 µSv/h - 10 mSv/h |
| Indication range: | 0.01 µSv/h - 10 mSv/h |
| Sensibility (¹³⁷Cs): | 1800 cps/mSv/h |
| Energy range (¹³⁷Cs): | 40 KeV - 1.3 MeV |
| Dimensions: | 135 mm. x Ø 35 mm |
| Weight: | 150 g |
| Detector window: | Mica, Ø9 mm |

RD4L
(ref. LAM014V01)

Probe with a great sensibility scintillation detector. Suitable for measuring low rate Gamma+XRays up to 100 µSv/h.

| | |
|---|----------------------------------|
| Type of detector: | Scintillation |
| Type of measure: | NaI(Tl) 25x25 mm. Gamma+XRays |
| Measuring range: | 5 nSv/h - 100 µSv/h |
| Indication range: | 1 nSv/h - 100 µSv/h |
| Sensibility (¹³⁷Cs): | 290 cps/µSv/h |
| Energy range (¹³⁷Cs): | 20 KeV - 2 MeV |
| Dimensions: | 217 mm. x Ø 35 mm |
| Weight: | 270 g |
| Case: | Aluminium |

There is a wide variety of accessories that allow MS6020 to adapt to different applications.



Probes connection cable (ref. LAM017V01)

Cable for connecting the MS6020 to an external probe. It is a spiral cable of a minimum 50 cm long and a maximum 2 m long.



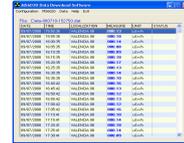
Waterproof probes connection cable (ref. LAM039V03)

Special cable for connecting the MS6020 monitor with the waterproof probes. Some different lengths are available.



USB communication cable (ref. LAM018V06)

Communication cable for downloading data from models with internal memory (M and RM)



Software for downloading data (ref. LAM022V02)

Software for downloading and storing data from R and RM models. It allows to export data to text compatible file.



Batteries charger (ref. LAM040V02)

Batteries charger for MS6020 monitor.



Batteries charger in vehicles (ref. LAM040V03)

Batteries charger for MS6020 monitor with a 12V lighter connector to charge in a vehicle.



MS6020 desktop holder + Batteries charger (ref. LAM042V05)

Desktop holder for MS6020. It allows to charge the batteries. It has also a communication port for models with internal memory.



MS6020 wall holder + Batteries charger (ref. LAM042V06)

Wall holder for MS6020. It allows to charge the batteries. It has also a communication port for models with internal memory.



MS6020 holster case (ref. LAM024V01)

Holster case for MS6020 monitor for protecting and transporting.



Plastic cases (ref. LAM043Vxx)

Different models of plastic cases for MS6020 and probes, depending on the size and number of probes to contain.



Transport cases (ref. LAM011Vxx)

Different models of aluminium cases for MS6020 and probes, depending on the size and number of probes to contain. There is also a model for containing the telescopic pole.



Waterproof transport cases (ref. LAM044Vxx)

Special waterproof and anti-shock cases. Different models depending on the size and number of probes to contain.



Telescopic pole (ref. LAM025V01)

Telescopic pole of a maximum length of 2 meter. The MS6020 can be connected and removed very easily from it.



Wall holder for CT115 probes (ref. LAM019V01)

Wall holder for CT115 probe that allows to check hands without touching the probe. The probe can be easily removed from it.



Floor holder for probes (ref. LAM019V02)

Floor holder for cylindrical probes to make easy to measure any type of surface.



Wall holder for probes (ref. LAM019V04)

Wall holder for radiation probes

| Available models and elements included | Probes connection cable | 4x AA rechargeable batteries | Batteries charger | User manual | Calibration certificate |
|--|-------------------------|------------------------------|-------------------|-------------|-------------------------|
| MS6020 (ref. LAM003V05) | ✓ | ✓ | ✓ | ✓ | - |
| MS6020-M (ref. LAM003V06) | ✓ | ✓ | ✓ | ✓ | - |
| MS6020-R (ref. LAM003V07) | | ✓ | ✓ | ✓ | ✓ |
| MS6020-RM (ref. LAM003V08) | | ✓ | ✓ | ✓ | ✓ |
| Probes | - | - | - | - | ✓ |

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