e-Front runners

NMA

Whole Body Surface Contamination Monitor

This monitoring device can be installed in nuclear plants and other facilities, where radioactive materials are handled. This device detects beta contamination on the surface of personnel. It occurs alarm and displays the affected locations on the LCD screen when the count exceeds user-programmable alarm level.

FEATURES

- Plastic scintillation detectors – No gas supply device and routine maintenance required
- Color LCD screen – easy to read and operate
- Contaminated areas will appear on the display, when contamination is detected.
- An alarm sounds when the user-programmable threshold is exceeded.
- Monitors top of heads – the height of overhead detector can be adjusted. (automatic adjuster is option.)
- Stores measurement data and communicates data with the computer by Ethernet.
- Communicates with dosemeter reader NRM and performs exit process from a radiation controlled area (option)

Fuji Electric Systems Co., Ltd.

ECNO:2305

SPECIFICATIONS

Radiation Detected	: Beta rays
Detector	: Plastic scintillator
Area Measured	: Top of a head, Face, chest, stomach, front and back of legs, back of a head, back, sides of upper and lower body, soles, palms and back of hands
Display	: Color LCD (touch screen)
Power Supply	: 120V AC ±10% 60Hz
Operating Temperature	: 0°C to 40°C / 32°F to 104°F
Operating Humidity	: ≤95% (non-condensing)
Size	: 1100mm(W) × 2210mm(H) × 860mm(D) / 43.3(W) × 87.0(H) ×33.9(D) in. approx.
Mass	: 400 kg / 881 lb approx.
Option	: (1) Software (receives and displays date via Ethernet) (2) Dosemeter reader (3) Entry gate (4) Exit gate (5) Partition (6) Automatic height adjuster of head detector
Compliance Code	: IEC61098 (2003), JIS Z4338 (2006)

Minimum Detectable Emission Rate

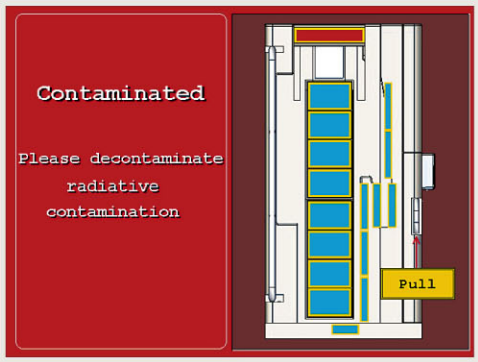
Measurement Part	Minimum Detectable Emission Rate(s^{-1})
Head	16.8
Body	26.3
Hand	12.2
Foot	22.0

[Procedure (complies with IEC61098(2003))]
Measure the natural counting rate over 10 minutes under the maximum reference background (0.25μGy/h, irradiating ^{60}Co source from the side of the monitor) and calculate the minimum detectable surface emission rate.
[Source Condition for Efficiency]
Hand : 100mm × 150mm ^{36}Cl surface source, closely-attaced
Foot : 100mm × 300mm ^{36}Cl surface source, closely-attaced
Head : 100mm × 100mm ^{36}Cl surface source, 5cm distance
Body : 4π body average efficiency (complies with IEC61098(2003))
[Formula]

$$M_1 = \left(0.05B_2 + 3\sqrt{\frac{B_2}{t} + \frac{B_2}{T}}\right) / E_{ff}$$

M_1 : Minimum detectable surface emission rate (s^{-1})
B_2 : Count rate to the maximum reference background (s^{-1})
t : BG measurement time (600sec)
T : Measurement time (10sec)
E_{ff} : Efficiency

Screen example



⚠CAUTION
*Read the instruction manual provided before using this product, to make sure you operate it safely.

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