

Personal RF Exposure Monitors and Accessories



1. Scope

This standard covers the requirements for personal RF (radio frequency) exposure monitors and accessories.

This standard applies to the following Seattle City Light (SCL) stock numbers:

Stock No.	Description
014611	NARDA RadMan 2XT Personal Radiation Monitor (batteries not included)
014612	NiMH, size AA rechargeable batteries (pair)

2. Application

This instrument is for field personnel who work in the vicinity of wireless communications antennas. See SCL 0095.04.

This instrument has many features and capabilities; see the manufacturer's operating manual for more information.

The calibration date on a personal RF exposure monitor is the date that it was last calibrated. Calibration is recommended every three years.

Standards Coordinator
John Shipek

Standards Supervisor
John Shipek

Unit Director
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3. Requirements

3.1 Personal RF Exposure Monitor

Sensors	Isotropic E-field and H-field sensors, diode-based system
Directionality	Isotropic (3-axis)
Integration time of input signal	Switchable between 1 s and 30 ms (Pulse)
Type of frequency response	Shaped response (weighted)
Frequency range:	
E-field	3 MHz to 60 GHz
H-field	3 MHz to 1 GHz
Sensitivity:	
E-field	±3 dB (3 MHz to 10 GHz) +6/-3 dB (> 10 to 20 GHz) +10/-3 dB (> 20 to 60 GHz)
H-field	±3 dB (3 MHz to 1 GHz)
Isotropic response	
E-field	±1dB (< 2.7GHz)
H-field	±1 dB (< 500 MHz)
Display:	
Level	6 LEDs
Power	1 LED
Pulse	1 LED
Battery	1 LED
RF exposure display	5/10/25/50/100/200% of standard (with respect to the power density)
ELF immunity at 50/60 Hz	10 kV/m
Data interface	USB type C
Other features	Visual alarm, audible alarm, vibration alarm, data logger
Power supply	2 replaceable NiMH rechargeable batteries, type AA (not included), chargeable via USB connection
Operating time/charge duration	800 h operation (without alarm)/charge duration < 8 h
Temperature range, operating	-10 °C to +55°C (14°F to 131°F)
Air humidity	5% to 95%, non-condensing
Ingress protection	Protection class IP65 (dust-tight and protected against water jets)
Dimensions (H x W x D)	6.5 in x 1.85 in x 1.22 in
Weight	0.4 lb without mounting adapter
Each monitor set shall include:	<ul style="list-style-type: none"> ▪ RadMan 2 basic unit ▪ USB 2.0 cable ▪ Mounting adapter ▪ Carrying case ▪ Lanyard with carabiner ▪ Allen wrench 1.5 mm ▪ Fastening strap ▪ Operating manual, English

3.2 Batteries

Size	AA
Classification	Rechargeable
Chemical system	Nickel metal hydride (NiMH)
Designation	ANSI 1.2H2 (IEC HR6)
Voltage, nominal	1.2 V
Rated Capacity, minimum	2300 mAH
Shelf Life, nominal	5 years
Other	Batteries shall be shipped pre-charged. Batteries shall meet Environmental Protection Agency (EPA) requirements for landfill disposal. No mercury added formulation shall be used. Batteries shall not contain cadmium.

4. Packaging

Each monitor set shall be packaged with its included accessories and marked with the following information:

- Manufacturer identification
- Product description
- SCL stock number

Each shipping container shall be legibly marked with the following information:

- Manufacturer identification
- Product description
- SCL purchase order number

5. Issuance

Stock Unit: EA (014611), PR (014612)

6. Approved Manufacturers

Stock No.	Description	Mfr.	Model No.
014611	RadMan 2XT, FCC 96-326/ Occupational, Personal Monitor Set, 60 GHz	Narda	2281/102
014612	AA rechargeable batteries	Energizer	NH15-2300 (hr6) Recharge Power Plus, 2300 mAH NiMH (pair)
"	"	Duracell	DX1500H, Rechargeable, 2500 mAH
"	"	Rayovac	PL715-4 GENE, Rechargeable Plus, 2400 mAH

7. References

SCL Work Practice 0095.04; "Working in the Vicinity of Wireless Communications Antennas"

8. Sources

Energizer Product Datasheet Form No. NH15-2300GL1118

Melland, Brandon; SCL Lineworker and subject matter expert for 7659.42
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Mott, Kenneth; SCL Communications Electrician and subject matter expert for 7659.42
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Narda RadMan 2LT/2XT Personal Radiation Monitor Operating Manual, Published
05/2019

Narda Safety Test Solutions technical bulletin NSTS 0719-E0347E

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www.energizer.com

www.duracell.com/en-us/

www.rayovac.com