SPX®

PRECISION LOCATORS

RD8000™

UNIVERSAL PRECISION CABLE, PIPE AND RF MARKER LOCATOR RANGE

Radiodetection®

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RD8000 – delivering fast, accurate, reliable and repeatable locate data

The RD8000 range of powerful multifunctional cable, pipe and RF marker locators are designed for use across the utility location industry. Designed with operator's needs in mind, the RD8000 delivers speed, accuracy and reliability, yet remains a cost-effective solution for any application.

RESPONSIVE

The RD8000's unique combination of digital and analog electronics delivers a sensitive and responsive locator/tool to enable operators to detect and react to extremely low signals associated with difficult to locate utilities.

ERGONOMICS

The RD8000 is ergonomically designed to deliver a superior performing locator that provides the user with a light weight, energy efficient, exceptionally well balanced tool which is comfortable for extended periods of use. Despite its weight and form, the RD8000 retains the environmental durability associated with an IP54 rating, meaning you can operate it in almost any environment.

The locator and transmitter both feature large, high contrast, backlit LCD screens that provide the user with clear information in any light conditions. The intuitive and responsive user interface has easily identifiable icons that are consistent across the locator and transmitter range, ensuring straightforward operation.

CENTROS™

RD8000 units are Centros enabled. Centros is a measurement engine based on more than 30 years of continuous development, combining new and innovative algorithms with established software on a high-performance processor core. Centros improves location accuracy and repeatability and delivers timely responsiveness in the field.

Centros™ Enabled

ERGONOMIC DESIGN

Light weight, with high contrast LCD display providing clear information in any light condition.

CURRENT DIRECTION

CD arrows allow identification of target utility, eliminating ghost trails on parallel conductors.

ILOC™

Save time by remotely controlling the transmitter using an advanced long range Bluetooth® link.

SURVEYCERT™

Share locate data with PC or PDA applications for reporting, audit and analysis.

TRUDEPTH™

Indicates depth when the locator is oriented correctly above the target pipe, cable or marker for the most accurate reading.

DYNAMIC OVERLOAD PROTECTION

Filters out interference, allowing use in electrically noisy environments such as substations.

REMOTE CALIBRATION

Confirm correct operation and calibration in the field.

3 YEAR EXTENDED WARRANTY

Warranty can be extended to a total of 3 years by registering the RD8000 products. Registration is free and provides access to software upgrades and other online features.

ILOC

iLOC is an advanced long range Bluetooth link between the RD8000 locator and transmitter (Tx-5B or Tx-10B) that helps save the operator time and effort. iLOC allows control of the transmitter remotely enabling the operator to spend less time walking and more time locating. iLOC operates at distances up to 300 meters (328 yards) line of sight providing a fast and unique means of conducting a survey.

iLOC remotely controls:

- **SideStep™** – move the transmitter frequency slightly above the selected frequency enabling locates in areas prone to interference or where multiple operators are locating.
- **Frequency Select** – choose a more effective frequency for your conditions on the RD8000 and transmitter.
- **Power Management** – an operator can adjust the output power of the transmitter to optimize output signal, leading to efficient use of transmitter batteries.
- **Transmitter remote sleep/wake** – enter standby mode to prolong battery life. Conveniently wake the transmitter with a simple key press on the locator.

SURVEY MEASUREMENTS AND SURVEYCERT

RD8000 locators can store up to 1000 locate records on demand, allowing operators to easily document and report surveys or points of interest. GPS data, from external or internal* GPS can also be stored to enable easy integration with GIS/Mapping systems. Measurements can be transferred to a PDA or PC using Bluetooth or USB* connections.

DATA LOGGING

On board memory* allows over a year's worth of locate history to be stored at one-second intervals. Data can be backed-up to a PC at any time, giving virtually unlimited record keeping for the life of the product. Retrieved data can be analyzed to aid in ensuring compliance and identifying training requirements.

GPS

All RD8000 models can connect to external GPS receivers, allowing positional data to be associated with locate histories. Optional internal GPS on the RD8000 marker locators provides 'street level' accuracy positional data for associating with usage history of points of interest without the need for an external device.

REMOTE CALIBRATION

Using the Windows® compatible supporting software, locators can be checked for correct calibration and operation over the internet, without needing to return the RD8000 to a service center. Operators can then print, email or save a calibration certificate, or book a service should any issues be detected.

*Optional feature available on Marker locator variants only.

Cable, Pipe and RF Marker Locator Systems

Intuitive on-screen menus make the RD8000 easy to set up and provide easy access to advanced features

High contrast LCD with auto-backlight

Splash-proof keypad

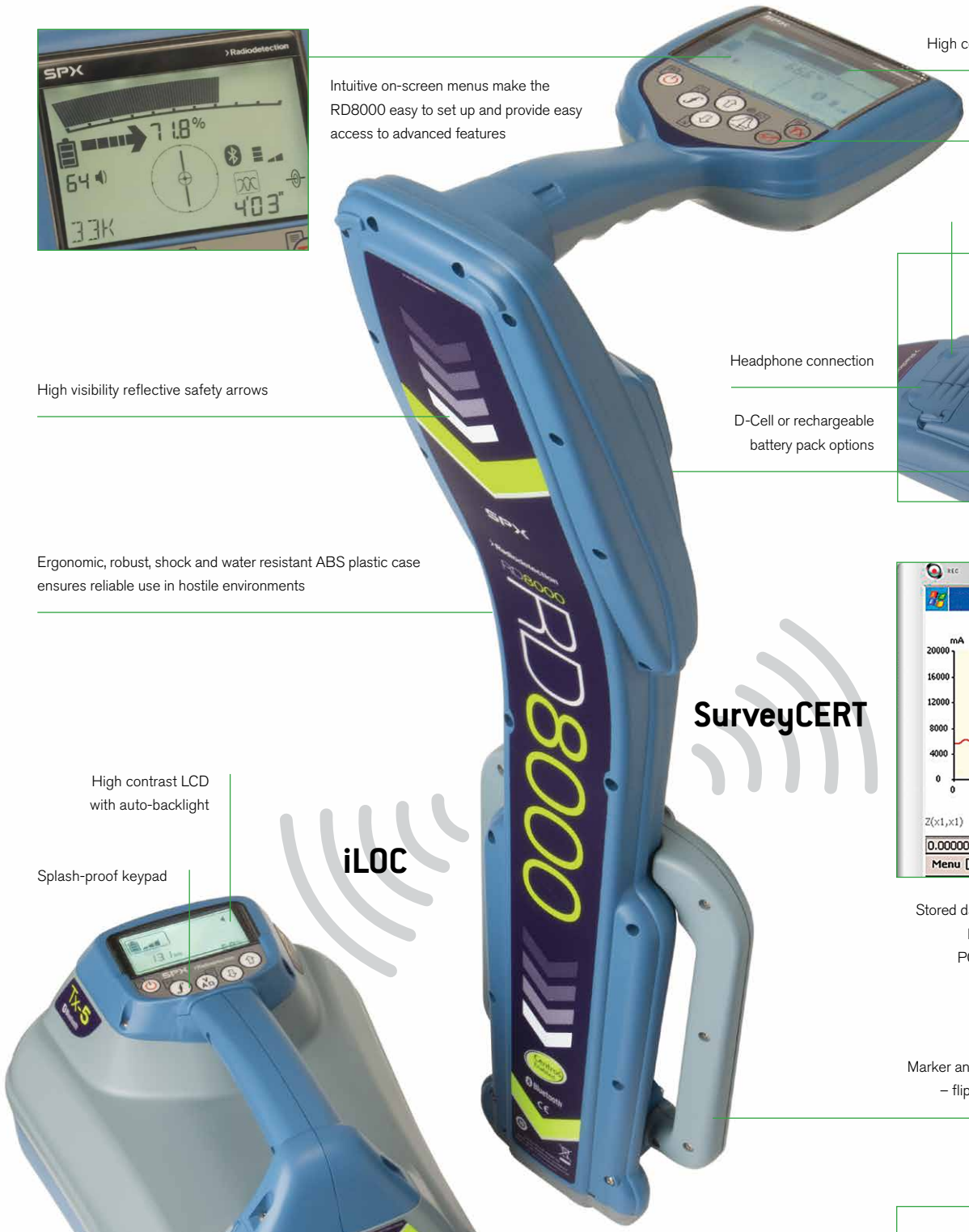
Accessory connection

Headphone connection

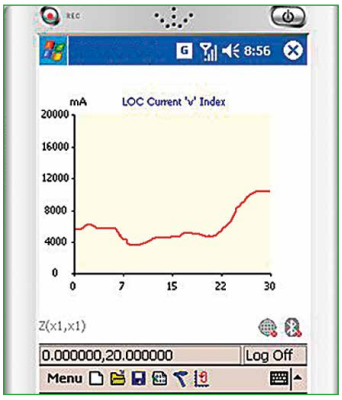
D-Cell or rechargeable battery pack options

High visibility reflective safety arrows

Ergonomic, robust, shock and water resistant ABS plastic case ensures reliable use in hostile environments



SurveyCERT



Stored data from RD8000 transferred by Bluetooth may be displayed on a PC or PDA using Radiodetection's SurveyCERT application

iLOC

High contrast LCD with auto-backlight

Splash-proof keypad

Marker antenna loop (marker models only) – flip down to enable marker locating

Powered by 8 x NiMH or alkaline LR20 (D-Cell) batteries, or optional Li-Ion rechargeable battery

Ergonomic robust ABS case

Base tray for accessories

MARKER LOCATOR

Marker models detect all commonly used markers with automatic depth estimation for faster and more accurate surveys.

COMPASS

Visually follow the target cable or pipe orientation with the dynamic line indicator.

PASSIVE AVOIDANCE

Rapidly survey an area using simultaneous detection of Power and Radio signals carried on underground cables or pipes.

STRIKEALERT™

Strike*Alert* reduces the risk of accidents by detecting shallow power cables and alerting the operator with an audio warning.

SIDESTEP

Lets the operator adjust the transmitter frequency to avoid unwanted interference.

TRUDEPTH

TruDepth gives the operator the confidence that the depth reading is accurate by only indicating a locate depth when the locator is correctly oriented directly above the pipe, cable or in close proximity to a marker.

Radiodetection's unique automatic marker depth estimation provides measurements without requiring a manual two-step 'lift up' process, delivering faster and more accurate surveys.

DYNAMIC OVERLOAD PROTECTION

Dynamic Overload Protection extends the RD8000 operation into areas where other products fail. In electrically noisy environments, particularly in areas where very large signals are present, it automatically filters out unwanted signals allowing the operator to work effectively in areas such as power substations and overhead railway HV cables.

COMBINED PEAK/NULL MODE

Peak/Null Mode is a tool to identify the effects of field distortion due to ground conditions or nearby utilities. Simultaneous display of Peak bargraph response and proportional Null arrows allow a quick assessment of locate conditions.

SIMULTANEOUS MARKER AND LINE LOCATING

For rapid utility detection RD8000 marker locators enable operators to scan for pipes, cables and RF markers at the same time, speeding up locate tasks and minimizing missed locates.

GUIDANCE MODE

Designed for quickly tracking the path of a buried utility, Guidance Mode provides three different indicators to guide the user towards the target line. The target position indicator, proportional arrows and audio signals guide the user towards the target pipe or cable. Compass indicates the orientation of the target and the Signal Strength received from the target is also displayed.

COMPASS

Allows the operator to quickly and easily follow the target line by visually indicating the relative orientation of the target cable or pipe to the locator. By indicating the alignment of the target line to the locator, Compass helps to improve accuracy when measuring depth.

FAULT FIND

Fault Find is a technique that enables an operator to locate a cable fault using an A-frame attached to the locator. On-screen arrows help show the fault's direction and help the operator locate the fault accurately to within 4" (10cm).

CD (CURRENT DIRECTION)

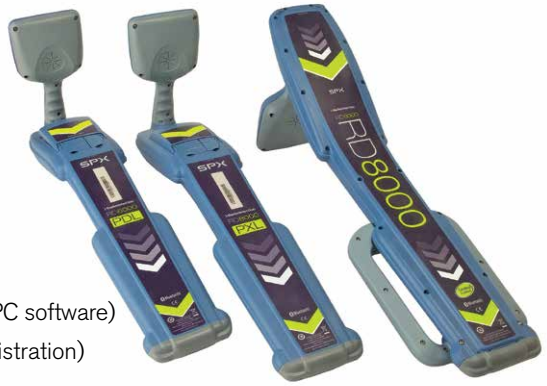
A method of identifying a target cable amongst a number of parallel cables using CD direction arrows. With CD the operator can locate a target quickly and eliminate wasted time following ghost trails.

Additional features

- Power, Radio, CATV and CPS passive modes
- 50Hz to 200kHz active frequency bandwidth
- Single antenna mode
- Peak Mode
- Null Mode
- Current Measurement
- Real sound

Support features

- Bluetooth and USB connectivity
- Remote software upgrades (requires PC software)
- 3 Years extended warranty (upon registration)



LOCATOR TYPE:	CABLE AND PIPE LOCATOR		CABLE, PIPE AND MARKER LOCATOR		
RD8000 MODEL:	PXL	PDL	PXLM	PDLM	PTLM
Rechargeable batteries	OPT	OPT	✔	✔	✔
Data Logging			OPT	OPT	OPT
CALSafe™			OPT	OPT	OPT
Built-in GPS			OPT	OPT	OPT
Bluetooth and USB	✔	✔	✔	✔	✔
SurveyCERT 1000 Locate Records	✔	✔	✔	✔	✔
iLOC Remote TX control	PXLB	PDLB	✔	✔	✔
Fault Find		✔		✔	✔
CD		✔		✔	✔
Power / Radio	2	4	2	4	4
CATV / CPS		✔		✔	✔
Active Frequencies	11	16	11	16	33
TruDepth	✔	✔	✔	✔	✔
Remote Calibration	✔	✔	✔	✔	✔
Depth in power mode		✔		✔	✔
Peak mode	✔	✔	✔	✔	✔
Null mode	✔	✔	✔	✔	✔
Peak / Null mode	✔	✔	✔	✔	✔
Single antenna mode	✔	✔	✔	✔	✔
Marker mode			✔	✔	✔
Combined mode			✔	✔	✔
Guidance mode			✔	✔	✔
Passive Avoidance mode		✔		✔	✔

RF Markers

UTILITY TYPE	COLOR	FREQUENCY
French Power	Natural	40.0kHz
General Non-drinkable water	Purple	66.35kHz
Cable TV	Black / Orange	77.0kHz
Gas	Yellow	83.0kHz
Telephone / Telecoms	Orange	101.4kHz
Sanitary	Green	121.6kHz
German Power	Blue / Red	134.0kHz
Water	Blue	145.7kHz
Electrical Power	Red	169.8kHz

RD8000 MODEL:	PXL(M)	PDL(M)	PTLM
Active Frequencies:			
ELF (98/128Hz)		✔	■
163Hz			■
208Hz			■
273Hz			■
340Hz			■
400Hz			■
439.8Hz			✔
459.9Hz			✔
480Hz			✔
484Hz			■
491Hz			✔
512Hz	✔	✔	✔
560Hz			■
570Hz		✔	✔
577Hz	✔	✔	✔
584Hz			■
624Hz			■
640Hz	✔	✔	✔
760Hz		✔	✔
815Hz			■
870Hz	✔	✔	✔
920Hz		✔	
940Hz	✔	✔	✔
982Hz			✔
1090Hz			✔
1450Hz			✔
4096Hz			✔
8kHz	✔	✔	✔
8440Hz			✔
9.8kHz			✔
33kHz	✔	✔	✔
65kHz	✔	✔	✔
82kHz			✔
83kHz	✔	✔	✔
131kHz	✔	✔	✔
200kHz	✔	✔	✔
CD Pairs:			
220Hz			■
256Hz		✔	✔
280Hz			■
285Hz		✔	✔
320Hz		✔	✔
380Hz		✔	✔
460Hz		✔	
680Hz			■
800Hz			■
920Hz			✔
968Hz			■
1168Hz			■
1248Hz			■
Sonde Frequencies:			
512Hz	✔	✔	✔
640Hz	✔	✔	✔
8kHz	✔	✔	✔
33kHz	✔	✔	✔

■ Available at extra cost

RANGE OF TRANSMITTERS

Three models, capable of delivering 1, 5 or 10 Watts (true output) with multiple features for a broad range of applications.

POWER MANAGEMENT

The operator can control transmitter output power remotely using iLOC.

DIGITAL DESIGN

Fully digital platform provides the transmitters with unparalleled flexibility of power, frequency and control.

Radiodetection Transmitters

Based on a fully digital platform, the family of Radiodetection transmitters has been designed to support the range of Radiodetection RD7000™+ and RD8000 cable, pipe and RF marker locators.

The Tx-1 is a low power transmitter. The Tx-5 has a higher power and induction capability as well as Fault Find. The Tx-10 has the highest power capability with both Fault Find and CD modes as standard.

All models feature constant current across their entire bandwidth in either direct connect, clamp or inductive mode. The transmitters are light-weight (6lb / 2.9kg), well-balanced and IP54 rated to cope with demanding environmental conditions. Each model has a removable accessory tray and a weatherproof battery compartment. A large, high contrast, backlit LCD screen provides the user with clear information.

90V output capability: All transmitters offer both 30V and 90V output options, resulting in higher signal current delivered on high impedance target lines than typical transmitters that only offer a 50V output. Higher signal levels are more locatable, and travel over longer distances.

SideStep*auto*™: allows the transmitter to calculate the optimum frequency based on ground impedance. The transmitter uses this information to optimize the active frequency. SideStep*auto* helps to improve locate accuracy and extends battery life.

To support the extended RD8000 iLOC feature set, the Tx-5B and Tx-10B can be ordered with integrated iLOC remote transmitter control.

The transmitter range features Direct Connect and induction frequencies compatible with locators across the RD8000 range, and can be easily customized to match your locator using the 'model' feature. The Tx-10B transmitter includes the additional 'PTL' model featuring the additional frequencies of the RD8000 PTLM locator.

A multimeter function enables quick measurements of output voltage, line voltage, current, impedance and power.

The transmitters are powered either by 8 standard D-cell batteries (alkaline or rechargeable NiMH) or by the Lithium-Ion rechargeable battery pack (available separately). Alternatively, the Tx range can be powered from a 12V vehicle source using a Radiodetection approved isolation transformer.

Alkaline battery life can be extended by enabling **ECO mode** which warns the operator and gradually reduces the power output in low battery conditions (Tx-5 and Tx-10 models only).

Transmitter features

- Three power versions: 1 Watt, 5 Watt and 10 Watt
- 8kHz Fault Find – locates faults from short circuit up to 2MΩ
- Current Direction Fault Find – for long distance fault finding
- 5 or 13 CD paired frequencies (model dependent)
- Current delivered at 30V or high voltage mode (90V for high impedance operation)
- 256Hz to 200kHz active frequency range
- Selectable modes support RD7000+ and RD8000 specific model locator frequency ranges (Tx-10B required for PTLM models)
- 8 induction frequencies
- iLOC (on Tx-5B and Tx-10B only)
- SideStep*auto*
- 250V Transient overvoltage protection
- Multimeter function
- 8 D-cell battery cassette/rechargeable Lithium-ion battery pack option
- Accessory tray (for ground stake, direct connect leads and earth reel)
- Plug and play accessories
- External 12V DC operation (using Radiodetection isolation transformer)
- Click-touch splash-proof sealed keypad
- High contrast LCD

MODEL NO.	TX-1	TX-5	TX-5B	TX-10	TX-10B
Power (Watt)	1	5	5	10	10
ECO mode		✔	✔	✔	✔
iLOC			✔		✔
Active frequencies	15	15	15	15	15
Induction frequencies	8	8	8	8	8
Induction field strength	0.7	0.85	0.85	1	1
8KFF		✔	✔	✔	✔
CD				5	13
Frequency mode	Manual	Manual	iLOC	Manual	iLOC
Standby power mode			✔		✔

8K FAULT FINDING

Locate cable sheath faults to within 4" (10cm) using Radiodetection's A-Frame.

REPEATABLE PERFORMANCE

All models deliver a constant current from 256Hz to 200kHz, meeting the highest demands of reliability and performance.

OPTIONAL TRANSMITTER RECHARGEABLE BATTERY PACK KIT

A convenient and cost effective alternative to alkaline batteries.

An RD8000 to address any utility...

Oil

Gas

Water

Rail

Power

Telecom/CATV

Accessories

Radiodetection's comprehensive range of accessories adds extra functionality and extends the scope of the precision locate cable and pipe locator systems.

Most accessories are also compatible with older locator and transmitter models such as the RD7000 range of locators or the RD4000 'T' range of transmitters.

LOCATOR ACCESSORIES

The precision locator accessory range offers a wide choice of add-ons including fault find 'A-frames,' current measurement clamps and submersible antennas, as well as offering the convenience of alternative power source options and on-line calibration validation.

TRANSMITTER ACCESSORIES

The range of Tx transmitter accessories is designed to improve the coupling of transmitter signals onto utilities as well as adding extra functionalities, for example the ability to locate 3 phase LV cable core-to-core short-circuits.
A wide choice of alternative power supply options are also available.

ACCESSORIES FOR TRACING NON-CONDUCTIVE UTILITIES

Radiodetection offers a range of sondes and flexible rods designed to enable operators to trace non-conductive (e.g. plastic or ceramic) utilities, for example the flexitrace connected to a Tx allows users to easily trace a pipe or pinpoint a specific location.

STORAGE AND TRANSPORT ACCESSORIES

Radiodetection offers a range of soft and hard cases designed to offer a practical and durable transport solution for locators, transmitter and accessories.

TECHNICAL SPECIFICATIONS FOR LOCATOR AND TRANSMITTER	
Features are model dependant	
Sensitivity	5µA at 1 meter (33kHz)
Dynamic range	140dB rms/√Hz
Selectivity	120dB/Hz
Maximum depth[1]	Line: 20' / 6m Sonde: 50' / 15m RF Markers: Near Surface: 2' / 60cm Ball Marker: 4.9' / 1.5m Mid-Range: 5.9' / 1.8m Full Range: 7.9' / 2.4m
Depth accuracy[2]	Line: ± 5% tolerance 4" / 0.1m to 10' / 3m Sonde: ± 5% tolerance 4" / 0.1m to 23' / 7m RF Markers: ± 15% ± 2" / 5cm up to the maximum depth
Locate accuracy	± 5% of depth
Horizontal GPS Position Accuracy	10' / 3m CEP (Circular Error Probable)
CD Fault-Finding (CDFF)	Up to 13 CD pairs, 220Hz to 1248Hz
Fault-Finding (FF)	Diagnose cable sheath faults from short circuit to 2MΩ using the A-frame
Max Transmitter Power output	1W (Tx-1), 5W (Tx-5 and Tx-5B), 10W (Tx-10 and Tx-10B)
Dynamic overload protection	30dB (automatic)
Batteries	Cable and Pipe Locator: 2 x D-cells (LR20) or optional Li-Ion battery pack Marker locator: Li-Ion battery pack or 3 x D-cells (LR20) Transmitter: 8 x D-cells (LR20) or optional Li-Ion battery pack
Battery Life (continuous usage)[3]	Cable and Pipe Locator: Alkaline up to 13 hours Marker Locator: Li-Ion or Alkaline up to 25 hours Transmitter: Alkaline up to 23 hours
Warranty	12 Month standard, 36 Months upon registration
Compliance	FCC, RSS 310 RoHS, WEEE, CE, Bluetooth
Weight	Cable and Pipe Locator: 4.2lbs / 1.9kg (including alkaline batteries) Marker Locator: 4.6lbs / 2.1kg (including Li-Ion battery pack) Transmitter: 6.2lbs / 2.8kg (including alkaline batteries) 9.3lbs / 4.2kg (including accessories)
Dimension (H x D x W)	Cable and Pipe Locator: 25.5" x 11.3" x 4.9" / 648 x 286 x 125mm Marker Locator: 25.5" x 11.3" x 7" / 648 x 286 x 177mm Transmitter: 14" x 8.9" x 8.1" / 356 x 227 x 207mm
Construction	Injection Molded ABS Plastic
Ingress Protection	IP54
Operating Temperature	14 to 122°F / -10 to 50°C

[1] In Good Conditions.
[2] RD8000 will locate to greater depths but accuracy may be reduced.
[3] At 70°F / 21°C with good quality batteries, transmitter output set to 1W.