



VIVAX
METROTECH

vLoc3-ML

Technical Specifications V1.3



Worldwide Locations

World Headquarters, United States of America

Vivax-Metrotech Corporation

3251 Olcott Street, Santa Clara, CA 95054, USA

T/Free : 1-800-446-3392

Tel : +1-408-734-1400

Fax : +1-408-734-1415

Website: www.vivax-metrotech.com

Email : SalesUSA@vxmt.com

Central/South America and the Caribbean

Ventas para América Latina

3251 Olcott Street, Santa Clara, CA 95054, USA

T/Free : 1-800-446-3392

Tel : +1-408-734-1400

Fax : +1-408-743-5597

Website: www.vivax-metrotech.com

Email : LatinSales@vxmt.com

Canada

Vivax Canada, Inc.

41 Courtland Ave Unit 8, Vaughan, ON L4K 3T3, Canada

Tel : +1-289-846-3010

Fax : +1-905-752-0214

Website: www.vivax-metrotech.ca

Email : SalesCA@vxmt.com

United Kingdom

Vivax-Metrotech Ltd.

Unit 1, B/C Polden Business Centre, Bristol Road, Bridgwater, Somerset, TA6 4AW, UK

Tel : +44(0)1793 822679

Website: www.vivax-metrotech.co.uk

Email : SalesUK@vxmt.com

France

Vivax-Metrotech SAS

Technoparc - 1 allée du Moulin Berger, 69130 Ecully, France

Tel : +33(0)4 72 53 03 03

Fax : +33(0)4 72 53 03 13

Website: www.vivax-metrotech.fr

Email : SalesFR@vxmt.com

Germany

Metrotech Vertriebs GmbH

Am steinernen Kreuz 10a
D-96110 Schesslitz

Tel : +49 954 277 227 43

Website: www.vivax-metrotech.de

Email : SalesEU@vxmt.com

China

Vivax-Metrotech (Shanghai) Ltd.

3/F No.90, Lane 1122 Qinzhou Rd.(N),
Shanghai, China 200233

Tel : +86-21-5109-9980

Fax : +86-21-2281-9562

Website: www.vivax-metrotech.com

Email : SalesCN@vxmt.com.cn

A. Description and Typical Applications

Item	Parameter
Model Name	vLoc3-ML
Model Number	VX220-01
Description	- Multi-purpose precision locator receiver - Electronic marker-ball detection
Intended Use	- Locating & pinpointing the position of buried pipes and cables - Detection of any one of nine marker balls types buried to a depth of 2m (6ft)

B. Characteristics

Item	Parameter
Construction	High impact thermoplastic (ABS) injection molded housing
Weight	5.7lbs (2.6kg)
Dimensions	12.2in(L) x 6.3in(W) x 28.4in(H) (310mm x 159mm x 721mm)
Display Type	High-Visibility Color Display 4.3"/10cm with 480 x 272 resolution
Receiver Antennas	Two sets of Omnidirectional Antennas, each comprising: - Two Compass antennas - Two Horizontal antennas - Two Vertical antennas One set of EMS transmit/receive antennas
Batteries	- Six x AA Alkaline batteries - Rechargeable custom Lithium-ion batteries with 100-240V AC mains charger
Battery Life	- Alkaline – typically 12 hours intermittent use at 70°F (21°C) - Lithium-ion – typically 27 hours intermittent use at 70°F (21°C) * With backlight activated, battery life varies with temperature, re-charging cycles are approximately 500 times the life cycle
Environmental	IP65 and NEMA 4
External Connectors	- Accessory Socket – to charge the internal batteries and attach accessories - Mini-USB socket for data transfer and programming
Temperature Range	- Operating: -4°F to 122°F (-20°C to 50°C) - Storage: -40°F to 140°F (-40°C to 60°C)

Compliance and Approvals	- Complies with European standard CE (Directive 99/5/EC) - EN 55011 - EN 61000-4-2: A1 & A2 - EN 61000-4-3 - EN 61000-4-8: A1 - ETSI EN 300 330-2	- ETSI EN 301 489-1 - ETSI EN 301 489-3 - Complies with FCC Rules Part 15 - CFR 47 part 2 - CFR 47 Part 15
Manufacturing	Designed and manufactured per ISO 9001:2015	
What's In the Box	- vLoc3-ML Receiver - Custom Li-ion receiver battery 100-240V AC mains charger - Six x AA Alkaline battery holder - Mini-USB data cable - Soft carry bag - User handbook	
Compatible Accessories	- A-frame fault locator - Remote Antenna (Stethoscope) - Bluetooth Module - Vehicle Charging DC Lead - TX-Link – Factory installed, for remote operation of the Loc3 series transmitter - Range of Sondes (waterproof, self-contained transmitters for use in nonmetallic pipes & ducts)	

C. Marker Frequencies

Item	Parameter		
Marker Frequencies	Ref #	Utility	Frequency (Hz)
	1	Power (Red)	169,800
	2	Water (Blue)	145,700
	3	Sanitary (Green)	121,600
	4	Telephone (Orange)	101,400
	5	Gas (Yellow)	83,000
	6	CATV (Orange/Black)	77,000
	7	Non-potable Water (Purple)	66,350
	8	EDF (French Power) (natural)	40,000
	9*	Power Europe (Blue/Red)	134,000
* Not available in all markets			

D. Operational

Item	Parameter
Information Displayed	Dedicated Marker Screen: • Marker type icon • Marker signal strength bar graph (marker color coded) with numeric value and peak level indicator • Circular bar graph to indicating marker signal strength Dual - Marker and Locate Screen: (In addition to the Classic Locate screen) • Marker type icon • Marker signal strength bar graph (marker color-coded) with numeric value and peak level indicator • Circular bar graph to indicating marker signal strength Status Bar Information: • Line locate icon • Marker detection icon • Antenna configuration: Peak, Peak with arrows, Broad Peak, Null, Delta Null, Omni Directional Peak, Omni Directional Broad, Marker mode • Line location - depth & current measurement • Battery condition • Speaker volume • Bluetooth and GNSS status (If installed) • Radio link to transmitter status (if installed) Locate screen (Classic display): • Signal strength - moving bar graph & numeric value • Bar graph color-coded indicating distortion level • Peak level indicator • Proportional left/right indication • Compass: full 360°-line direction indicator • Gain level (in dB) • Frequency selected • Configuration menus including GNSS status and data logging transfer status • Depth and current • Warnings (if activated) • Plug and play automatic recognition of accessories • Accessory specific custom screens Information screen: • GPS coordinates

	• Signal current and depth value of line or sonde • Log number • Logging options • Depth to marker Customer definable start-up screen
Locate Perspectives	- Classic Locate – moving bar graph with a value showing signal strength - Vector Locate Screen – fully automatic locate including offset, depth and locate uncertainty - Transverse Graph Screen - visual assessment of locate quality and distortion - Plan View Screen – fully automatic graphical representation of the cable position independent of cable direction, including depth/current and locate uncertainty. - Sonde Locate Screen – directing arrow to move to the Sonde position along the polar axis
Configuration	The Intuitive setup menu enables the user to configure: - Set up frequency selection to toggle by "f" pushbutton - Setup location mode selection to toggle by "m" pushbutton - Setup screen views selection to toggle by long press "m" pushbutton - Units of measure (feet/meters) - Sound (Pitch) – normal or modulated - Language - Continuous depth and current options - Loudspeaker level - Backlight - Bluetooth pairing if installed - Transmitter Radio Link if installed - Warnings (Excessive Tilt, Overhead Signal, Shallow Cable, Signal Overload) - Auto shut down – configurable to power down at five minutes, ten minutes, or never
Data Logging	- 50 million record internal storage - Data can also be transferred for storage, via cellular connectivity, into the cloud using the Vivax-Metrotech application, VMMap - All parameters stored at each location including depth, current, date, time, mode, gain setting, frequency, locate uncertainty, longitude, latitude, and height above sea-level
Data Transfer	- Via the Vivax-Metrotech "MyLocator3" software application available free of charge from www.vivax-metrotech.com. Data can be saved in csv, klm, shp, txt, xls and xlsx formats. The transfer is via a USB cable connection from the locator to the host computer. Or - Cellular transfer to the VMMap Cloud (Vivax-Metrotech Cloud) via the VMMap mobile app

Operating Frequencies	- Configurable frequencies from 98Hz to 200 kHz - Power 50Hz and 60Hz - Radio 10.0kHz - 22.7kHz bandwidth - Signal Direction (SD) - enhanced frequency identifies which direction the signal is flowing. SD-USA: 256Hz/512Hz, SD-Europe: 320Hz/640Hz	
Operating Modes	- Peak, Peak with arrows, Broad Peak - Null, Delta Null - Omni Directional Peak, Omni Directional Broad - Marker locate - Marker and line locate	
Gain Control	- Manual gain using "+" or "-" keys - One-touch of "+" or "-" keys rescales to 60% of the bar graph scale - In Vector Screen, "+" and "-" keys act as zoom feature to keep target utility in view - In the Transverse Graph screen, "+" key saves the screen graph, "-" key clears the screen	
Accuracy	Locate pinpointing accuracy:	- Over 9ft (3m) – 5% of the depth - Up to 9ft (3m) – 3% of the depth
	Depth measurement accuracy:	+/- 5% of depth
	Current measurement accuracy:	- 5% of actual current – over 9ft (3m) - 3% of actual current – up to 9ft (3m)
	Depth range:	Dependent on the strength of the signal radiating to the locator
	Marker Depth Accuracy:	- 4% of depth – up to 4ft (1.2m) - 10% of depth – up to 5ft (1.5m) Typical accuracy with ball markers
	* Performance rated using a single undistorted signal source	
Compatible Transmitters	Loc series, Loc3 series, VM-550FF, VM-560FF, FLS series	

E. Shipping and Packaging

Item	Parameter
Shipping Weight	14.9lbs (6.76kg)
Shipping Dimension	16.5in(L) x 11in(W) x 27.6in(H) (420mm x 280mm x 700mm)

F. Warranty

Item	Parameter
Warranty	- Two years - Optional extended warranty available

G. Software Updates

Item	Parameter
Software	The software can be upgraded using a PC with a USB port. Program updates & locator software updates are available via the free MyLocator3 app.

Disclaimer: Product and accessory specification and availability information are subject to change without prior notice.