

## SPECIFICATIONS FOR DEEP SEARCH METAL DETECTOR (DSMD)

Sr. No.	Specification																			
1)	<b>Physical Characteristic</b>	<p>(a) The detector and its accessories should be comfortable for handling.</p> <p>(b) Light weight and made of non-corrosive (exceptionally corrosion protected) material, carbon fiber, glass fiber etc.</p> <p>(c) Material should have proven reliability and durability.</p> <p>(d) Complete equipment should be Water Proof (IP-67 Standard)</p> <p>(e) It should be a single composite unit including the control unit and extension shaft with all cable and connectors inside and no connector or cable should be visible outside except headphone connector to avoid any mishandling.</p> <p>(f) Easy to transport</p>																		
2)	<b>Weight &amp; Dimension</b>	<p>i) Complete operational unit with batteries &amp; Small Search head (maximum) <b>3 kgs</b> and Complete operational unit with batteries &amp; Large Search Head (maximum) <b>5 kgs</b></p> <p>ii) Bag pack weight of the equipment with small search head including accessories <b>5 kgs.</b></p> <p>iii) Bag pack weight of the equipment with large search head including accessories <b>7 kgs.</b></p> <p>v) Total weight of the equipment including carrying case with both search heads (Maximum)<b>14 kgs.</b></p>																		
3)	<b>Transport, Storage &amp; transits</b>	<p>i) The detector together with its accessories must come in a lightweight, durable compact backpack bag that is capable of surviving in all adverse environmental conditions.</p>																		
4)	<b>Search Head</b>	<p>There should be two different search head in any shape i.e. Circular, oval or rectangular.</p> <p>i) The diameter of small search head should be between 20 to 26 cm. (circular)</p> <p>ii) The dimension of large search head should be between 30 x 50 cm. (area in any shape)</p> <p>iii) The search coil should have facility to be disassembled and reassembled with the main control unit.</p> <p>iv) Automatic adaptation of different coil sizes to the control unit.</p> <p>v) Both types of search coils should have facility to cancel out interference of any type.</p> <p>vi) The Complete equipment should be IP 67 complied.</p> <p>vii) Extendable stem / rods to extend the length of detector.</p>																		
5)	<b>Detection Sensitivity</b>	<p>a) The size and shape of the objects with which the tests will be conducted are as under :-</p> <p>i) 0.15 gm metal - 1 inch x 1 inch tin foil</p> <p>ii) 50 mm nail - Thickness 03 mm and dia of head 06 mm.</p> <p>iii) Salty water - 03 gm iodized common salt in 1 ltrs of water.</p> <p>b) The sensitivity of the detector must meet the following specifications:</p> <p><b>i) In free Air :</b></p> <table style="margin-left: 40px;"> <tr> <td>(a) 0.15 gm metal</td> <td style="text-align: right;">25 cm;</td> </tr> <tr> <td>(b) 50 mm nail vertical</td> <td style="text-align: right;">35 cm;</td> </tr> <tr> <td>(c) 50 mm nail horizontal</td> <td style="text-align: right;">27 cm;</td> </tr> </table> <p><b>ii) Under Ground</b></p> <table style="margin-left: 40px;"> <tr> <td>(a) 0.15 gm metal</td> <td style="text-align: right;">17 cm;</td> </tr> <tr> <td>(b) 50 mm nail vertical</td> <td style="text-align: right;">30 cm;</td> </tr> <tr> <td>(c) 50 mm nail horizontal</td> <td style="text-align: right;">20 cm;</td> </tr> </table> <p><b>iii) In clear water</b></p> <table style="margin-left: 40px;"> <tr> <td>(a) 0.15 gm metal</td> <td style="text-align: right;">17 cm;</td> </tr> <tr> <td>(b) 50 mm nail vertical</td> <td style="text-align: right;">30 cm;</td> </tr> <tr> <td>(c) 50 mm nail horizontal</td> <td style="text-align: right;">21 cm;</td> </tr> </table>	(a) 0.15 gm metal	25 cm;	(b) 50 mm nail vertical	35 cm;	(c) 50 mm nail horizontal	27 cm;	(a) 0.15 gm metal	17 cm;	(b) 50 mm nail vertical	30 cm;	(c) 50 mm nail horizontal	20 cm;	(a) 0.15 gm metal	17 cm;	(b) 50 mm nail vertical	30 cm;	(c) 50 mm nail horizontal	21 cm;
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		<p><b>iv) In salty water</b></p> <p>(a) 0.15 gm metal 17 cm;  (b) 50 mm nail vertical 30 cm;  (c) 50 mm nail horizontal 21 cm;</p> <p>All these testing should be conducted on normal soil and mineralized soil.</p> <p>c) Detector must be capable of pinpointing detected metal to <math>\pm 5</math> cm range. The distance will be taken from the center of the search head to the center of the object.</p> <p>d) Detection tone should be distinct from the working tone. The instrument should be free from radio and static interference.</p> <p>e) Ground compensation feature should be in the equipment for manual ground compensation by the user if required for any particular soil and this feature should be independent of Sensitivity button.</p>
6)	<b>Detection Capabilities</b>	<p>1) Very easy and effective searching of large areas.</p> <p>2) Should detect all ferrous and non ferrous metals.</p> <p>3) Must be capable of detecting buried metals in all types of soil including laterite.</p> <p>4) It should work in all weather condition from arid to pouring rain.</p> <p>5) Usage time should be minimum 12 hours on rechargeable batteries.</p>
7)	<b>Control panel and display unit</b>	<p>1) The integrated unit should have LED display bright enough to be visible in sunlight.</p> <p>2) Display should show signal strength / intensity, ground balance setting, indication of detection of metal ferrous, battery condition and all other mode settings.</p> <p>3) It should have filter to reduce intermittent or pulsed false signals.</p> <p>4) It should have visual as well as audio signal for metal detection.</p> <p>5) Other basic functions – volume control, gain control, resetting button, arm support.</p> <p>6) It should have all type of required software accompanied if any.</p> <p>7) It should have speaker &amp; Headphone for audio signal.</p>
8)	<b>Electrical Parameter</b>	<p>1) The equipment should worked on rechargeable and also on alkaline batteries.</p> <p>2) Two sets of rechargeable batteries with battery charger to be provided with each equipment.</p> <p>3) The battery usage time should be minimum 12 hours on rechargeable batteries.</p> <p>4) The battery charger should protect battery from over charging.</p> <p>5) When equipment is switched on, battery level status with audio to be provided in the equipment</p>
9)	<b>Warranty</b>	<p>1) Warranty of the equipment should be 5 years.</p> <p>2) Warranty of the Battery and chargers should be 1 year</p> <p>3) Supplier and manufacturer should give undertaking for supplying spares parts and service for 10 years including warranty period. However, the manufacturer will be responsible, in case the supplier is changed by the manufacturer for service and supply of spare parts.</p>