

**LITHIUM CELLS OR BATTERIES TEST SUMMARY  
IN ACCORDANCE WITH SUB-SECTION 38.3  
OF MANUAL OF TEST AND CRITERIA**

**BATTERY TRANSPORTATION INFORMATION**

<i>Name of battery :</i>  Item Number : 390997 Item Name : Battery K235-4.5k Complete Item Description : 450bar pressure rated battery module.		<i>Battery manufacturer's contact information :</i>  Kongsberg Maritime Strandpromenaden 50 3183 Horten Norway +47 815 73 700 kongsberg.com	
<i>Name of the test laboratory :</i>  Norwegian Defence Research Establishment (FFI)  Instituttveien 20 NO-2007 Kjeller Norway (+47) 63807000 <a href="mailto:ffi@ffi.no">ffi@ffi.no</a>		<i>Test report id. number:</i>  11/00882	<i>Date of the test report:</i>  15.12.2010
<i>Description of battery:</i>  This is a battery module used in the HUGIN AUV. One HUGIN AUV system may have any number from 2 to 15 of these modules.  Battery type : Lithium Ion Battery energy : 8524.8 Wh Battery dimensions : 1468 x 248 x 145mm Battery weight : 92 kg		<i>List of tests conducted and results (i.e. pass/fail) :</i>  Test T.1 : Altitude Simulation : Pass Test T.2 : Thermal test : Pass Test T.3 : Vibration : Pass Test T.4 : Shock : Pass Test T.5 : External short circuit : Pass Test T.6 : Impact/Crush : Not applicable Test T.7 : Overcharge : Not applicable * Test T.8 : Forced discharge : Not applicable  Additional testing comments : *This battery block is not a stand alone battery, and includes no overcharge protection. This is taken care of by a separate BMS inside a complete battery module.  The test above is applicable for the battery blocks inside this battery module. This complete battery module is covered by UN38.3.3(g).	
<i>Reference to assembled battery testing requirements, (i.e. 38.3.3 (f) and 38.3.3 (g)) :</i>  Covered by 38.3.3(g)	<i>Reference to revised edition of the Manual of Tests and Criteria :</i>  Revision 5	<i>Does the battery comply with the 30% state of charge (SOC) :</i>  Yes	
<b>PRODUCT CLASSIFICATION FOR TRANSPORT (According to UN - DGP)</b>			
<i>UN Classification :</i>  <b>UN 3480</b>		<i>Shipping name :</i>  <b>Lithium Ion batteries</b>	
<i>Signature (name and title) :</i>  Kevin Eriksen Battery responsible		This document remains valid as long as no changes, modifications, or additions are made to the battery described in this document, after being transported from Kongsberg Maritime's facilities. This battery has been classified according to the applicable transport regulations and the UN Manual of Tests and Criteria as of the date of certification. The battery must be packed, labeled and documented according to country and other international regulations for transportation.	
<i>Date :</i>  13.01.2019			