TYPE APPROVAL CERTIFICATE

for a 406 Megahertz Distress Beacon for use with the Cospas-Sarsat Satellite System

Certificate Number: 3001

Manufacturer:	McMurdo Limited, United Kingdom
Beacon Type:	PLB
Beacon Models:	FASTFIND RETURN LINK
Additional Model Names:	Z450
Test Laboratory:	TUV Product Service Ltd., Fareham, United Kingdom
Date of Test:	October – November 2019

Details of the beacon features and battery type are provided overleaf.

The Cospas-Sarsat Council hereby certifies that the 406 MHz Distress Beacon Model identified above is compatible with the Cospas-Sarsat System as defined in documents:

C/S T.001   Specification for Cospas-Sarsat 406 MHz Distress Beacon
Issue 4 – Rev. 4, February 2019

C/S T.007   Cospas-Sarsat 406 MHz Distress Beacon Type Approval Standard
Issue 5 – Rev. 3, February 2019

TAC 194 issued to Signature Industries Ltd.: **6-Feb-2009**
TAC 200 re-issued to McMurdo Ltd, UK: **9-Oct-2009**
TAC 217 re-issued to Orolia Limited, UK: **1-Apr-2012**
TAC 304 issued to Orolia Limited, UK: **23-Jul-2018**
TAC 2001, 3001 issued to Orolia Ltd., UK: **19 May 2020**
TAC 2001, 3001 re-issued to McMurdo Ltd.: **30 Jan 2023**

Steven W. Lett,
Head of Cospas-Sarsat Secretariat

NOTE, HOWEVER:

1. This certificate does not authorize the operation or sale of any 406 MHz distress beacon. Such authorization may require type acceptance by national administrations in countries where the beacon will be distributed, and may also be subject to national licensing requirements.

2. This certificate is intended only as a formal notification to the above identified manufacturer that the Cospas-Sarsat Council has determined, on the basis of test data of a beacon submitted by the manufacturer, that 406 MHz distress beacons of the type identified herein meet the standards for use with the Cospas-Sarsat System.

3. Although the manufacturer has formally stated that all beacons identified with the above model name(s) will meet the Cospas-Sarsat specification referenced above, this certificate is not a warranty and Cospas-Sarsat hereby expressly disclaims any and all liability arising out of or in connection with the issuance, use or misuse of the certificate.

4. This certificate is subject to revocation by the Cospas-Sarsat Council should the beacon type for which it is issued cease to meet the Cospas-Sarsat specification. A new certificate may be issued after satisfactory corrective action has been taken and correct performance demonstrated in accordance with the Cospas-Sarsat Type Approval Standard.

5. Cospas-Sarsat type approval testing requirements only address the electrical performance of the beacon at 406 MHz. Conformance of the beacon to operational and environmental requirements is the responsibility of national administrations.

6. This certificate authorizes the use of the registered name mark "Cospas-Sarsat" and of registered trademarks for the Programme's logos, for labelling, instruction materials, and marketing of the 406-MHz beacon model identified, but not for other marketing or sales purposes (i.e., not for general uses beyond this specific beacon model).

Beacon Models: FASTFIND RETURN LINK (Z450)

Operating temperature range: -20°C to +55°C (Class 2)

Operating Lifetime: 24 hours

Transmit Frequency: 406.031 MHz

Battery Details: Lithium Manganese Dioxide (Li-MnO$_2$), GP, GPCR123A   4 x "CR 2/3 A" cells

Beacon Model Features:

- Personal Locator Beacon style device
- Internal Navigation device (GPS / Galileo) produced by u-Blox, model "NEO-M8N";
- 121.5 MHz auxiliary radio locating device (power 19 dBm, duty cycle – 95%);
- Messages of long format;
- Integrated antenna;
- Self-test mode with one burst of 520 ms;
- GNSS Self-test; and
- Beacons were tested only in PLB configurations, corresponding to beacon operation while on ground and above ground.

Approved Beacon Message Protocols: Beacon is approved for encoding with the message protocols indicated with "Yes" and black text below:

USER PROTOCOLS		USER-LOCATION PROTOCOLS		LOCATION PROTOCOLS	
No	Maritime with MMSI	No	Maritime with MMSI	No	Standard Location: EPIRB with MMSI
No	Maritime with Radio Call Sign	No	Maritime with Radio Call Sign	No	Standard Location: EPIRB with Serial Number
No	EPIRB Float Free with Serial Number	No	EPIRB Float Free with Serial Number	No	Standard Location: ELT with 24-bit Address
No	EPIRB Non Float Free with Serial Number	No	EPIRB Non Float Free with Serial Number	No	Standard Location: ELT with Aircraft Operator Designator
No	Radio Call Sign	No	Radio Call Sign	No	Standard Location: ELT with Serial Number
No	Aviation	No	Aviation	No	Standard Location: PLB with Serial Number
No	ELT with Serial Number	No	ELT with Serial Number	No	National Location: EPIRB
No	ELT with Aircraft Operator and Serial Number	No	ELT with Aircraft Operator and Serial Number	No	National Location: ELT
No	ELT with Aircraft 24-bit Address	No	ELT with Aircraft 24-bit Address	No	National Location: PLB
No	PLB with Serial Number	No	PLB with Serial Number	No	RLS Location: EPIRB
No	National (Short Format Message)			No	RLS Location: ELT
No	National (Long Format Message)			**Yes**	**RLS Location: PLB**
				No	ELT(DT) Location: ELT with Serial Number
				No	ELT(DT) Location: ELT with Aircraft Operator and Serial Number
				No	ELT(DT) Location: ELT with Aircraft 24-bit Address