



Certificate No.

03-002042/031740

## TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

### Control levers

L01 AZ-i, L01 PD-i, L01ASA, L01TDA, L04, LF40, LF50, LF70, LF80, LF90, LF120, LF150, LF60, LE90S, LE90D

MANUFACTURER:

**Lilaas AS**

**Kongeveien 75  
N-3196 Horten  
NORWAY**

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

**Croatian Register of Shipping: Rules for the classification of ships,  
Part 12. – Electrical Equipment  
Part 13. – Automation**

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: **2028-05-02**

Place and date: **Split, 2024-05-02**

Seal

**Marinko Popović, dipl.Ing.**

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

**DETAILED PRODUCT DESCRIPTION:**

**Lilaas range of control levers:**

	Type	Description	Compass safe distance	
			Standard	Steering
-	L01 AZ-i	Azimuth control lever w/ el-shaft system	80 cm	60 cm
-	L01 PD-i	Double/single thruster/propulsion control lever w/ el-shaft system	50 cm	35 cm
-	L01ASA	Azimuth control lever	55 cm	40 cm
-	L01TDA	Double/single thruster/propulsion control lever	55 cm	40 cm
-	L04	Joystick control lever – 1, 2 or 3 axes	45 cm	30 cm
-	LF40	Joystick control lever – 1, 2 or 3 axes	25 cm	10 cm
-	LF50	Joystick control lever – 1, 2 or 3 axes	25 cm	15 cm
-	LF60	Joystick control lever – 1, 2 or 3 axes	500 cm <sup>1)</sup>	500 cm <sup>1)</sup>
-	LF70	Azimuth control lever	25 cm	15 cm
-	LF80	Rudder control lever	25 cm	15 cm
-	LF90	Double/single thruster/propulsion control lever	25 cm	15 cm
-	LF120	Double/single thruster/propulsion control lever	25 cm	15 cm
-	LF150	Rudder control wheel	25 cm	15 cm
-	LE90S	Single RPM/pitch control lever	20 cm	10 cm
-	LE90D	Double RPM/pitch control lever	20 cm	10 cm

<sup>1)</sup>Compass safe distance has not been documented for LF60.

**APPLICATION / LIMITATIONS:**

Control levers listed under product description are approved for use on board CRS classed vessels.

**TYPE APPROVAL DOCUMENTATION:**

-	Test report	: 2012-3259 rev.1	-	Environmental and EMC testing of Lilaas joystick L04, DNV Technical report dated 22.06.2012.
-	Test report	: 2013-3018	-	EMC and environmental testing of Azimuth and double thruster Control manoeuvres, DNV Technical report dated 17.01.2013.
-	Drawing No.	: LF14306 rev.D1	-	Assembly drawing TD, L01
-	Drawing No.	: LF14611 rev.E	-	Assembly drawing AZ, L01
-	Drawing No.	: LF14841 rev.D	-	Assembly drawing L04 black
-	Document	: -	-	Datasheet Control lever – part no. L01TDA-AA-00001 (rev. B)
-	Document	: -	-	Datasheet Control lever – part no. L01ASA-AA-00001 (C)
-	Document	: -	-	Datasheet Joystick control – part no L04EAA-AB-00002 (rev. C)
-	Test report	: 97-1110	-	Type approval testing of Control Levers, type LF120, LF90, LF70 and LF60, DNV Technical report dated 30.01.1997.
-	Test report	: 97-1294 rev.1	-	Test of degrees of protection provided by enclosures of Control Lever, type LF60, DNV Technical report dated 31.05.1997.
-	Test report	: 2004-3315 rev.1	-	EMC and environmental testing of Control lever type LF90, DNV Technical report dated 07.07.2004.
-	Test report	: 2009-3014 rev.1	-	Environmental tests of 8 various marine joysticks, DNV Technical report dated 19.01.2009.
-	Drawing No.	: LF10871 rev.A	-	Assembly drawing Joystick LF60
-	Drawing No.	: LF10859 rev.B	-	Assembly drawing LF70AZ
-	Drawing No.	: LF10887 rev.A	-	Assembly drawing LF90S
-	Drawing No.	: LF10855 rev.A	-	Assembly drawing LF120S
-	Document	: -	-	Datasheet Joystick control – part no LF60-3-02 (rev. C)
-	Document	: -	-	Datasheet Azimuth control lever – part no LF70R-01-21 (rev. D)
-	Document	: -	-	Datasheet Double (FWD) thruster – part no. LF90D-01-127 (rev. C)
-	Document	: -	-	Datasheet Double (FWD) propulsion – part no. LF120D-01-39 (rev. B)

- Test report : 20187 rev.2
- Drawing No. : LF15082 rev.A
- Drawing No. : LF15137 rev.A
- Drawing No. : LF15210 rev.B1
- Drawing No. : LF15135 rev.A1
- Test report : 2006-3293 rev.1
- Test report : 2006-3475 rev.1
- Test report : 2010-3282 rev.1
- Drawing No. : LF11062 rev.C
- Drawing No. : LF12234 rev.D
- Drawing No. : LF13440 rev.B
- Drawing No. : LF15149 rev.A
- Document : -
- Document : -
- Document : -
- Document : -
- Test report : E20182.00
- Document : -
- Drawing No. : LF10858 rev.A
- Drawing No. : ASD15867 rev.B
- Test report : E21190.00
- EMC and environmental testing of L01 AZ-i and L01 PD-i Motorized Elshaft levers for Lilaas AS, Applica Test report dated 23.05.2014.
- Wiring diagram L01 Elshaft
- Wiring diagram L01 T/P El. shaft
- Wiring diagram L01 TD/PD El. shaft
- Assembly drawing L01PDM
- Environmental testing of joystick type KM-MOD, DNV Technical report dated 19.10.2006.
- IP66 test according to EN60529 of rudder handle type LF80, DNV Technical report dated 18.10.2006.
- IP66 test of console mounted joystick type LF40, DNV Technical report dated 07.05.2009.
- Assembly drawing LF80 w/shaft
- Assembly drawing LF50 3-axes
- Assembly drawing steering wheel. helm
- Assembly drawing LF40-3-02 KM
- Datasheet Joystick control – part no LF40-3-02 (rev. D)
- Datasheet Joystick control – part no LF50-3-03 (rev. E)
- Datasheet Rudder control control lever – part no LF80-01-01 (rev. D)
- Datasheet Rudder control – part no LF150-01-19 (rev. C)
- IEC/EN 60945:2002 + Cor1:2008, IACS E10 Rev.7:2018 RPM/Pitch control lever LE90D(S), Nemko Test report dated 30.11.2020.
- Datasheet Single/Double Lever – part no. LE90 (Rev. A)
- Assembly drawing LE90S
- Assembly drawing LE90D
- DNVGL-CG-0339:2019, IACS E10 Rev.8:2021 Motorized levers L01 AZ-i and L01 PD-i, Nemko Test report dated 06.10.2021.

**MARKING OF PRODUCT:**

In accordance with IEC60945 – Marking and identification (The Manufacturer and Type Designation of the product, serial number, date of manufacture, safe distance to magnetic compass, supply voltage, software version...).

**CONDITIONS FOR CERTIFICATION:**

In case of any product updates, CRS is to be notified.