



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

IMANNA Laboratory, Inc.
515 Gus Hipp Blvd.
Rockledge, FL Zip 32955

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

TESTING

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

A handwritten signature in black ink, appearing to read 'R. Douglas Leonard Jr.', is positioned above a horizontal line.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 05 December 2021

Certificate Number: AT-2826



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

IMANNA Laboratory, Inc.

515 Gus Hipp Blvd.
Rockledge, FL Zip 32955
Robert White info@imanna.com
321 632 2008

TESTING

Valid to: **December 05, 2021**

Certificate Number: **AT-2826**

Dimensional Inspection and Measurement

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Dimensional Inspection / Measurement <ul style="list-style-type: none"> • Construction • Use • Dimensional Characteristics • Mechanical Characteristics • Physical Properties • Markings • Documentation • Performance • Supplemental 	UL 1123 Marine Buoyant Devices (Inherently Buoyant Flotation), 46 CFR 160.xxx, ASTM D1682 G-E or G-T, ASTM D1683, ASTM D412, MIL-L-17653A, MIL-L-2411(SH) 3.2.6	Wearable and Throwable Personal Flotation Devices (Lifejackets) SOLAS UL 1123 Except Buoyant Suits, Sailboard Harness Lifejackets, Hiking Harness Lifejackets, Rescuer's Harness Lifejackets	Measuring Tapes(s), Stop Watch, Scale(s), Inclinator, Force gauge, Temperature Chambers for Heat and Freezing, Hoists, Water Tanks, Thermometer, Barometer, Thickness Gauge, CRE Tensile Tester, Humidity Chamber, Front Loading Washing Machine, Clothes Dryer, Weights, Air Pressure Gauges, Buoyancy Baskets, Cylinders for Tensile Tests, Test Point for Puncture Resistance, Rotating Shock Bin, Spray Heads, Optical Comparator, measuring tape, construction level, (Note: ABYC S30 is a reference document only) Rockwell Hardness tester, steel/lead weights, open water tanks, volume displacement box with pipette, Vibration and shock machine, salt spray chamber
	UL 1175 Buoyant Cushions (Inherently Buoyant and Inflatable), 46 CFR 160.xxx, MIL-B-2766	UL 1191 Components Except Thread, Fabric, Webbing, Lacing, Zippers, Hardware, Lacing Closures and Adjusters, Sailboard Harness Hooks, Polymeric Enclosures for Kapok, RF Welded, Urethane Coated Nylon Compartment	
	UL 1177 Buoyant Vests (Inherently Buoyant)	Materials for Hybrid and Inflatable Recreational PFDs, All of Section 31 and 32 for Inflatables except for Window Material, Knitted	
	UL 1517 Hybrid Personal Flotation Devices (Inherently Buoyant and Gas), UL 1439		
	UL 1180 Fully Inflatable Recreational Personal Flotation Devices (Gas Filled), ASTM B117-94, ASTM D1434-82, ASTM D1683-90a, ASTM D471-79, ASTM D751-89, MIL-STD-202 (F,G,H) Test Method 101		



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	UL 1191 Components for Personal Flotation Devices, UL 1197		
	ISO 12402 – Parts 1-10		
	ANSI/CAN/UL 12402 – Parts 1-10 Personal Flotation Devices (Recognized by Canada, Europe, and other Countries) (When approved)		
	33 CFR 183.114 – Test of Flotation Materials		
	ABYC H-26 - Powering of Boats, July 2016		
	ABYC H-5 – Boat Load Capacity, July 2016		
	ABYC H-8 – Buoyancy in the event of Swamping, July 2017		
	ABYC S-30, Outboard Engine and Related Equipment Weights, July 2017		
	ASTM D2842 - Test Method for Water Absorption of Rigid Cellular Plastics		
TP 1332 Section 4.4.4 - Flotation Requirements for Monohull Vessels			
ISO 18813:2006, Sections 4.32.2.1 and 4.32.2.3 - Ships and marine technology — Survival Equipment for Survival Craft and Rescue Boats			



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	SOLAS and USCG Requirements as stated in the LSA Code (2017) under Resolution MSC.81(70) and 46 CFR 160.050 - Specification for a Buoy, Life Ring, Unicellular Plastic		

Electrical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Ignition Protection Tests	SAE J 1171 External Ignition Protection of Marine Electrical Devices	AC and DC Electrical Components	Hydrocarbon Analyzer, Calibrated Gas Mixture, Temperature Indicator/Controller, Laser IR Temperature Indicator, Digital Multi-Meter True RMS, AC/DC Clamp Meter, Stop Watch, Environmental Conditions Data Logger
	ABYC C 1500 Ignition Protection Test for Marine Products		
	ABYC E-11 AC and DC Electrical Systems on Boats		
	UL 1236 Battery Chargers for Charging Engine-Starter Batteries - SB16 Ignition Protection		
	ISO 8846 and EN 28846 Small Craft – Electrical Devices – Protection Against Ignition of Surrounding Flammable Gases		
	33 CFR 183.410 – Ignition Protection		
Low Voltage Testing	EN 50395:2005 - Electrical Test Methods for Low Voltage Energy Cables	Electrical insulating Materials, wire insulation	AC/DC power supply, Multimeter, hi-pot power supply
	MIL-STD-202 (F,G,H)-Method 301 – Dielectric Withstanding Voltage		



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	MIL-STD-202 (F,G,H)- Method 302 – Insulation Resistance		
	MIL-STD-202 (F,G,H)- Method 303 – DC Resistance		
	MIL-STD-202 (F,G,H)- Method 304 – Resistance – Temperature Characteristic		
Navigation Lights Tests (Inland and Open Waters)	EN 60945 - Maritime Navigation and Radiocommunication Equipment and Systems - General Requirements - Methods of Testing and Required Test Result	Navigation Lights	Radiometer / Photometer, Spectrometer, Rotary Positioner (Goniometer), Measuring Tape(s), Stop Watch, Pressure Gauge, Water Spray Nozzle, Lab Environment Data Logger, Vibration and shock machine, accelerometers
	ISO 19009:2015 - Small Craft - Electric Navigation Lights - Performance of LED Lights ABYC A16 Electric Navigation Lights		
	EN 14744:2005 - Inland Navigation Vessels and Seagoing Vessels - Navigation Light		
	ABYC A16 Electric Navigation Lights		
	UL 1104 Marine Navigation Lights		

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Fuel Systems Component Tests	ABYC H-24 Gasoline Fuel Systems	Fuel System Components	Pressure Gauge, Pressure Cycling Switch, Temperature Measurement, Weighing Scale, Stop Watch, Inclinator, Measuring Tape(s),
	ISO 10088 Small Craft – Permanently Installed Fuel Systems		
	USCG 33 CFR 183.5XX – SubPart J – Fuel Systems		



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Mechanical

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	EN ISO 21487 – Small Craft – Permanently Installed Petrol and Diesel Fuel Tanks SAE J1527:2011 – Marine Fuel Hoses CARB-SORE TP-901 2017, EPA 40 CFR 1060.520 JIS D1617 - Automobile Parts - Fuel Filters for Diesel Engines SAE J905 - Fuel Filter Test Methods EN ISO 7840 – Small Craft Fire Resistant Fuel Hoses EN ISO 8469 – Small Craft Non-Fire Resistant Fuel Hoses		Vacuum Gauge, Reference Fuels, Graduated Cylinder for Fuel Measurement, Temperature Data Logger Fire Extinguisher Reference Fuels Fire Chamber Slosh Table Scales UV Weathering
Permeation	CARB-SORE TP-901 2017 EPA 40 CFR 1060.520	Portable Fuel Containers (PFCs)	Pressure gauges, compressed air, weight scales, Test fixtures, cert/ref. fuels, Xenon light for ageing, slosh table
Steering Wheel Tests	ABYC P-22 - Steering Wheels, ISO 8848:1990 - Small Craft – Remote Steering System	Steering Wheels	Pressure gauges, weights, measuring tape, load cell (3000#), tape measure
General Mechanical Tests	ABYC A-33 - Emergency Engine/Propulsion Cut-Off Devices	Switches	Load cell, recorder, measuring tape, multimeter

Environmental

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Ingress Protection	ISO/IEC 60529 - Degrees of Protection provided by Enclosures MIL-STD-810H 512 - Immersion – Includes (F, G, H)	Switches, connectors, misc electrical components, LRUs (line replaceable units)	Multimeters, stopwatch, thermometer measuring tape digital scale, MIL-STD-“DUST”, compressed gas (GN2), ISO water intrusion test fixture with nozzles

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Salt Spray Testing	ASTM B117 - Standard Practice for Operating Salt Spray (Fog) Apparatus MIL-STD-810H 509 - Salt Fog - Includes (F, G, H) RTCA/DO-160G – Section 14- Salt Fog	Metallic components	Salt spray chamber, certified salt, optical camera

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. AT-2826.



R. Douglas Leonard Jr., VP, PILR SBU

