1. General

This STC allows the installation of a not ETSO approved "LX IRIS All-In-One" Instrument to substitute Airspeed Indicator and/or Altimeter mandated by the Flight- and/or Maintenance manual of the Airplane **(Action A).**

2. Description of the System

The LX IRIS is an Instrument capable of measuring the Pitot- and Attic pressure digitally using calibrated sensors. (Airspeed sensor: 12 bit, 0 to 50 hPa, 325 km/h with resolution less than 0.1 km/h (optional) - Barometric sensor: 24 bit, 10 hPA - 1200 hPa, 10 cm resolution.
The values are displayed on a sunlight readable display, the Display can be configured using a WIFI dongle and a specific software. It shall be configured with the Airspeed displayed as a moving Pointer on a dial showing the applicable coloured ARCs as per AFM and the Altitude as an (emulated) odometer type display. Additional numerical values can be configured as per convenience.

3. Limitations

- All airplane limitations apply
- Aircraft operation is limited to VFR / Day operation
- The Operation of the Aircraft is not permitted, if either the LX IRIS or the Backup instrument is not Operative

4. Installation

4.1. Parts effected

4.1.1. Parts removed

Part describtion	Technical Standard Order	Remark
Airspeed indicator	ETSO-C46a or equivalent	Removal as per operators discression
Altimeter	ETSO-C10b or equivalent	

4.1.2. Parts installed

Part describtion	Software release	Remark
IRIS All-in-One	FW 1.2.1934	Software not field loadable (non FLS)
Installation material	---	Tube, cables and connectors as required
circuit breaker rated 1A	---	Texas Instruments / Klixon 7277 Series Circuit Breaker or similar

4.2. Prerequisites:

- IRIS needs to be ordered or configured to show any airspeed limitation required by the Airplane flight manual (AFM, usually section 2) and the Altimeter as an (emulated) odometer type. Additionally, the Layout needs to display the altimeter setting (QHN, QFE) always.
  Note: Airspeed indicator layout for Arcs and Markings according to CS 22 can be found in AMC 22.1545 or in the appendix of this instruction.
- An additional electronic Flight display (e.g. electronic variometer, navigation computer or final glide calculator) needs to be installed and configured to be able to show indicated Airspeed (IAS) and barometric Altitude simultaneously on one page. To reduce the probability of failure of both systems at the same time, this additional System shall not be an IRIS All-in-One, as well.
  Note: To our knowledge, this is possible on the following systems: LXNavigation: LX 10K, LX, Zeus, EOS, Salus, ERA, Helios LXNav: S100, S10, S80, S8, V80, V8, XCVario: XCVario 57 + 80mm
  Note: This list is not complete, Installer needs to check each system installed on the aircraft for the suitability
- The instructions in the Maintenance Manual concerning the electrical system must be regarded. The electrical system must be able to cope with the additional load. This regards the capacity of the batteries, the cross sections of the wires and the fuses. In powered sailplanes with battery ignition system, the capacity of the batteries and generators must be large enough to meet the simultaneous demands of the engine ignition system and the greatest demands of any other electrical system components that draw from the same source.
- Maintenance Manual instructions concerning the pneumatic lines and ports must be regarded. After work on the pneumatic installation, the system must be checked for tightness.

- The equipment must securely be attached in the sailplane, must neither endanger the pilot, nor hinder bailing out, nor weaken the structure.

4.3. Installation Process:

- The LX IRIS All-in-One must be installed according to LX iris series user's manual, Version 1 or later applicable issue.
- Installation shall be in instrument panel, consisting with existing cockpit layout. Any limitation from Maintenance instructions applies (e.g. Panel weight). As this instrument is the most important instrument for a (powered) glider, it should be placed in a very visible place, e.g. in the top of the panel.
- LX IRIS All-in-One needs to be wired directly to the Aircraft master switch ("always on") with a resettable circuit breaker rated 1A (e.g. Texas Instruments / Klixon 7277 Series Circuit Breaker or similar). This circuit breaker must not be connected to any other system required for safe flight, explicitly not connected to the electronic device used as backup system
- No alteration to pitot or static ports of the aircraft shall be made
- For general purpose and structural considerations, use FAA Advisory Circular AC 43.13-1B + 2B
- "INSTALLATION OF BASIC FLIGHT INSTRUMENTS" Standard Change CS-SC401d can be used as approved data, if Maintenance Manual or similar approved data (Technical Notes TN) do not contain sufficient information

5. Post Installation Configuration, Checkout, and Documentation

- Check the Configuration of the LX IRIS (Airspeed displayed as a moving Pointer on a dial showing the applicable coloured ARCs as per AFM and the Altitude as an (emulated) odometer type display and Display Markings / ARC are in line with basic AFM and TCDS.
- Altimeter setting needs to be always visible on IRIS All-in-One display
- Check Backup instrument is in working condition and configured to be able to display IAS and Altitude simultaneously
- Perform a Pitot-/Static test in accordance with AC43.13 App for LX IRIS and backup instrument
- Perform aircraft weighing according to Flight or Maintenance manual. Update the AFM and placards accordingly
- Add Flight manual supplement "Electronic Airspeed indicator + Altimeter LXIRIS" to AFM
- Update Aircraft documentation (e.g. STC/Alteration list, equipment list, weighing report)
- Release aircraft to service according to applicable requirements. Note: This Minor Change is not suitable for the release to service of the aircraft by the pilot-owner
- Note to certifying staff: According to Regulation (EU) 2021/699 and 21.A.307 (c)

(c) Parts and appliances listed in point (b) are eligible for installation in a type-certified product ***without being accompanied by an EASA Form 1****, provided that the installer holds a document issued by the person or organisation that manufactured the part or appliance, which declares the name of the part or appliance, the part number, and the conformity of the part or appliance with its design data, and which contains the issuance date.*

Therefor IRIS All in one can be installed and release without beeing accompanied by an EASA Form 1

6. Instructions for continued Airworthiness (ICA):

On every Airworthiness review:

- Check the Configuration of the LX IRIS (Airspeed displayed as a moving Pointer on a dial showing the applicable coloured ARCs as per AFM and the Altitude as an ((emulated) odometer type display) and Display Markings / ARC are in line with basic AFM and TCDS.
- Check that Altimeter setting is permanently shown on the Display
- Check Backup instrument is in working condition and configured to be able to display IAS and Altitude simultaneously.

It is recommended to perform a Pitot-/Static test in accordance with FAR 43 App E every 12 month for LX IRIS and backup instrument. Airspeed indicator readings during this test shall be within the limits of ETSO-C46a Date, 24.10.03, as shown in the table below.

Speed (IAS)			Impact/Pitot pressure		Tolerance		
Knots	mph	Km/h	InchHG	hpa	Knots	mph	Km/h
50	58	93	0,1198	4,06	4	4,6	7,4
60	69	111	0,1727	5,85	2	2,3	3,7
80	92	148	0,3075	10,41	2	2,3	3,7
100	115	185	0,4814	16,30	2	2,3	3,7
120	138	222	0,695	23,54	2	2,3	3,7
150	173	278	1,091	36,95	2,5	2,9	4,6

It is recommended to periodically send the unit to the Manufacturer or authorized representative for an inspection every 5 years to perform pressure calibration if needed Installation: Please refer to the Minor Change Installation instruction, latest revision

- Check AFM is updated containing the Airplane flight manual supplement (AFMS) “Airplane Flight Manual supplement: **Electronic Airspeed indicator + Altimeter LXIRIS All-In-One”**

Occurrence reporting: In case of issue with the LX IRIS All in one Device, please contact:

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Appendix: Example of the presentation of an air-speed indicator complying with this requirement (AMC 22.1545)