



Number: CTSO-C141

Date of approval: Jun 21, 2019

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China Civil Aviation Technical Standard Order

This China Civil Aviation Technical Standard Order (CTSO) is issued according to Part 37 of the China Civil Aviation Regulations (CCAR-37). Each CTSO is a criterion which the concerned aeronautical materials, parts or appliances used on civil aircraft must comply with when it is presented for airworthiness certification.

Aircraft Fluorescent Lighting Ballast/fixture Equipment

1. Purpose.

This China Civil Aviation Technical Standard Order (CTSO) is for manufacturers applying for fluorescent lighting ballast/fixture equipment CTSO authorization (CTSOA). This CTSO prescribes the minimum performance standards(MPS) that fluorescent lighting ballast/fixture equipment must first meet for approval and identification with the applicable CTSO marking.

2. Applicability.

This CTSO affects new application submitted after its effective date. Major design changes to article approved under this CTSO will require a new authorization in accordance with section 21.353 of CCAR-21R4.

3. Requirements

- a. Equipment that is to be so identified with the applicable CTSO

marking must meet the standards set forth in the Society of Automotive Engineers, Inc. (SAE), Aerospace Standard (AS) 4914, Revision A “Aircraft Fluorescent Lighting Ballast/Fixture Safety Design Standard,” dated May 1999.

b. Demonstrate the required performance under the test conditions specified in RTCA/DO-160E or above version, using standard environmental conditions and test procedures appropriate for airborne equipment.

Note: The use of RTCA/DO-160D (with Changes 1 and 2 only, incorporated) or earlier versions is generally not considered appropriate and will require substantiation via the deviation process as discussed in paragraph 3.c of this CTSO.

c. Deviation. For using alternative or equivalent means of compliance to the criteria in this CTSO, the applicant must show that the equipment maintains an equivalent level of safety. Apply for a deviation under the provision of 21.368(a) in CCAR-21R4.

4. Marking.

a. Mark at least one major component permanently and legibly with all the information in 21.423(b) of CCAR-21R4. The marking must include the serial number.

b. Also, mark the following permanently and legibly, with at least

the manufacturer's name, subassembly part number, and the CTSO number:

(1) Each component that is easily removable (without hand tools);
and,

(2) Each subassembly of the article that manufacturer determined may be interchangeable.

5. Application Data Requirements.

The applicant must furnish the responsible certification personnel with the related data to support design and production approval. The application data include a statement of conformance as specified in section 21.353(a)(1) in CCAR-21R4 and one copy each of the following technical data:

a. Operating instructions and equipment limitations. The limitations shall be sufficient to describe the operational capability of the equipment.

b. Installation procedures and limitations. The limitations shall be sufficient to ensure that the appliance, when installed in accordance with the installation procedures, continues to meet the requirements of this CTSO. The limitations shall include at least the following:

(1) A note with the following statement:

“This article meets the minimum performance and quality control standards required by a CTSO. Installation of this article requires separate

approval.”

(2) When applicable, identification that the appliance is an incomplete or multi-use system describes the functions that are intended to be provided by the appliance.

c. Schematic drawings as applicable to the installation procedures.

d. Wiring diagrams as applicable to the installation procedures.

e. Specifications.

f. List of components by part number.

g. Instructions for periodic maintenance and calibration which are necessary for continued airworthiness once the equipment is installed.

h. An environmental qualification form as described in RTCA/DO-160E, for each system component.

i. Manufacturer’s CTSO qualification test report.

j. Nameplate drawing.

6. Manufacturer Data Requirements.

Besides the data given directly to the authorities, have the following technical data available for review by the authorities:

a. A drawing list, enumerating all of the drawings and processes that are necessary to define the article’s design.

b. Functional qualification specifications for qualifying each production article to ensure compliance with this CTSO.

- c. Equipment calibration procedures.
- d. Corrective maintenance procedures within 12 months after CTSO authorization.
- e. Schematic drawings.
- f. Wiring diagrams.
- g. The results of the environmental qualification tests conducted according to this CTSO.

7. Furnished Data Requirements.

- a. Provide one copy or technical data and information specified in paragraphs 5.a and 5.h of this CTSO.

8. Availability of Referenced Documents.

- a. Order RTCA documents from:

Radio Technical Commission for Aeronautics, Inc.

1150 18th Street NW, Suite 910, Washington D.C. 20036

You may also order them online from the RTCA Internet website at:

www.rtca.org

- b. Order SAE documents from:

SAE International

400 Commonwealth Drive, Warrendale, PA 15096-0001

You may also order them online from the SAE Internet website at:

www.sae.org.