ICS 49.090 SLOVENSKÁ TECHNICKÁ NORMA Február 2025

STN	**Letectvo a kozmonautika Konektor s rozšíreným lúčovým ukončením, optické vlákno bez fyzického kontaktu v dutinách podľa EN 3645 Časť 001: Technická špecifikácia**	**STN EN 4869-001** 31 1921

Aerospace series - Expanded beam termini, fibre optic non-physical contact in EN 3645 standard cavities - Part 001: Technical specification

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

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EUROPEAN STANDARD

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EN 4869-001

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English Version

Aerospace series - Expanded beam termini, fibre optic non-physical contact in EN 3645 standard cavities - Part 001: Technical specification

Série aérospatiale - Terminaisons à faisceau élargi, contact à fibre optique non physique dans des cavités EN 3645 standard - Partie 001 : Spécification technique

Luft- und Raumfahrt - Strahlaufweitender Anschluss, berührungsloser Lichtwellenleiterkontakt in EN 3645-Standardkontaktkammern - Teil 001: Technische Lieferbedingungen

This European Standard was approved by CEN on 19 August 2024.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 4869-001:2024) has been prepared by ASD-STAN.

After enquiries and votes carried out in accordance with the rules of this Association, this document has received the approval of the National Associations and the Official Services of the member countries of ASD-STAN, prior to its presentation to CEN.

This document shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by June 2025, and conflicting national standards shall be withdrawn at the latest by June 2025.

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Introduction

The family of connectors used in this document is in accordance with EN 3645-001. The optical termini, which are using the expanded beam technology, are specially adapted to the cavities of this kind of connectors. It is particularly suitable for use in zones of severe environmental conditions on board aircraft, applying EN 2282.

1 Scope

This document specifies the general characteristics, the conditions for qualification, acceptance and quality assurance, as well as the test programs and groups for threaded ring coupling circular connectors with expanded beam termini, intended for use in a temperature range from −55 °C to 125 °C continuous.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 2591-100,[1] *Aerospace series — Elements of electrical and optical connection — Test methods — Part 100: General*

EN 2591-101, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 101: Visual examination*

EN 2591-102, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 102: Examination of dimensions and mass*

EN 2591-302, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 302: Climatic sequence*

EN 2591-304, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 304: Damp heat steady state*

EN 2591-308, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 308: Sand and dust*

EN 2591-311, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 311: Low air pressure*

EN 2591-312, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 312: Air leakage*

EN 2591-315, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 315: Fluid resistance*

EN 2591-403:2018, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 403: Sinusoidal and random vibration*

EN 2591-407, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 407: Durability of contact retention system and seals*

EN 2591-408, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 408: Mating and unmating forces*

[1] Published as ASD-STAN prEN at the date of publication of this document, available at: https://www.asd-stan.org/.

EN 2591-409, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 409: Contact retention in insert*

EN 2591-410, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 410: Insert retention in housing (axial)*

EN 2591-412, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 412: Contact insertion and extraction forces*

EN 2591-413, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 413: Holding force of grounding spring system*

EN 2591-426, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 426: Contact retention system effectiveness*

EN 2591-506, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 506: Use of tools*

EN 2591-601, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 601: Optical elements — Insertion loss*

EN 2591-602, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 602: Optical elements — Variation of attenuation and optical discontinuity*

EN 2591-604, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 604: Optical elements — Cleaning capability of optical face*

EN 2591-605, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 605: Optical elements — Return loss*

EN 2591-607, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 607: Optical elements — Immunity to ambient light coupling*

EN 2591-609, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 609: Optical elements — Effectiveness of cable attachment — Cable cyclic flexing*

EN 2591-610, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 610: Optical elements — Effectiveness of cable attachment — Cable pulling*

EN 2591-611, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 611: Optical elements — Effectiveness of cable attachment — Cable torsion*

EN 2591-612, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 612: Optical elements — Effectiveness of cable attachment — Cable axial compression*

EN 2591-613, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 613: Optical elements — Impact test*

EN 2591-615, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 615: Optical elements — Connection integrity at temperature*

EN 2591-617, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 617: Optical elements — Temperature cycling*

EN 2591-6101, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6101: Optical elements — Visual examination*

EN 2591-6301, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6301: Optical elements — Endurance at temperature*

EN 2591-6303, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6303: Optical elements — Cold/low pressure and damp heat*

EN 2591-6305, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6305: Optical elements — Rapid change of temperature*

EN 2591-6307, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6307: Optical elements — Salt mist*

EN 2591-6314, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6314: Optical elements — Immersion at low air pressure*

EN 2591-6316, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6316: Optical elements — Ozone resistance*

EN 2591-6317, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6317: Optical elements — Flammability*

EN 2591-6321, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6321: Optical elements — Damp heat, cyclic test*

EN 2591-6402, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6402: Optical elements — Shock*

EN 2591-6403, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6403: Optical elements — Vibrations*

EN 2591-6404, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6404: Optical elements — Transverse load*

EN 2591-6405, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6405: Optical elements — Axial load*

EN 2591-6406, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6406: Optical elements — Mechanical endurance*

EN 2591-6414, *Aerospace series — Elements of electrical and optical connection — Test methods — Part 6414: Optical elements — Unmating of lanyard release optical connection elements*

EN 3155-008,[1] *Aerospace series — Electrical contacts used in elements of connection — Part 008: Contacts, electrical, male, type A, crimp, class S — Product standard*

EN 3155-009,[1] *Aerospace series — Electrical contacts used in elements of connection — Part 009: Contacts, electrical, female, type A, crimp, class S — Product standard*

EN 3197,[1] *Aerospace series — Design and installation of aircraft electrical and optical interconnection systems*

EN 3645-001, *Aerospace series — Connectors, electrical, circular, scoop-proof, triple start threaded coupling, operating temperature 175 °C or 200 °C continuous — Part 001: Technical specification*

EN 3645-002, *Aerospace series — Connectors, electrical, circular, scoop-proof, triple start threaded coupling, operating temperature 175 °C or 200 °C continuous — Part 002: Specification of performance and contact arrangements*

EN 3909, *Aerospace series — Test fluids and test methods for electrical and optical components and sub-assemblies*

EN 4869-101, *Aerospace series — Expanded beam termini, fibre optic non-physical contact in EN 3645 standard cavities — Part 101: Multimode male termini size 16 — Technical specification*

EN 4869-102, *Aerospace series — Expanded beam termini, fibre optic non-physical contact in EN 3645 standard cavities — Part 102: Multimode female termini size 16 — Technical specification*

EN 4869-103, *Aerospace series — Expanded beam termini, fibre optic non-physical contact in EN 3645 standard cavities — Part 103: Multimode male termini size 12 — Technical specification*

EN 4869-104, *Aerospace series — Expanded beam termini, fibre optic non-physical contact in EN 3645 standard cavities — Part 104: Multimode female termini size 12 — Technical specification*

EN 9133, *Aerospace series — Quality management systems — Qualification procedure for aerospace standard products*

ISO 27874, *Metallic and other inorganic coatings — Electrodeposited gold and gold alloy coatings for electrical, electronic and engineering purposes — Specification and test methods*