BS EN 4681-003:2024

BSI Standards Publication

Aerospace series — Cables, electric, general purpose, with conductors in aluminium or copper-clad aluminium

Part 003: AD family, single, UV laser printable — Product standard

Documents
Document Sharing Hub

Full document details: BS EN 4681-003:2024

National foreword

This British Standard is the UK implementation of EN 4681-003:2024.

The UK participation in its preparation was entrusted to Technical Committee ACE/6, Aerospace avionic electrical and fibre optic technology.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2024
Published by BSI Standards Limited 2024

ISBN 978 0 539 25833 2

ICS 49.060

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 31 December 2024.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS EN 4681-003:2024

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 4681-003

December 2024

ICS 49.060

English Version

Aerospace series - Cables, electric, general purpose, with conductors in aluminium or copper-clad aluminium - Part 003: AD family, single, UV laser printable - Product standard

Série aérospatiale - Câbles électriques, d'usage général, avec conducteurs en aluminium ou en aluminium chemisé cuivre - Partie 003 : Famille AD, monoconducteurs, marquables par laser UV - Norme de produit

Luft- und Raumfahrt - Elektrische Leitungen, zur allgemeinen Verwendung, mit Leitern aus Aluminium oder kupferbeschichtetem Aluminium - Teil 003: AD-Familie, einadrig, mit UV-Laser bedruckbar, Produktnorm

This European Standard was approved by CEN on 2 September 2024.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

© 2024 CEN All rights of exploitation in any form and by any means reserved worldwide for CEN national Members.

Ref. No. EN 4681-003:2024 E

Documents
Document Sharing Hub

Full document details: BS EN 4681-003:2024

Contents

Page

European foreword 3
1 Scope 4
2 Normative references 4
3 Terms, definitions, symbols and abbreviations 7
4 Materials and construction 7
4.1 Materials 7
4.2 Construction 7
4.3 Number of cores 8
4.4 Colour coding of cores 8
5 Required characteristics 8
6 Quality assurance 14
7 Designation 14
7.1 Identification 14
7.2 Type code (for short designation) 14
8 Identification and marking 14
9 Packaging, labelling and delivery lengths 15
10 Technical specification 15

Documents
Document Sharing Hub
Full document details: BS EN 4681-003:2024

European foreword

This document (EN 4681-003:2024) 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

According to the CEN-CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this document: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

Documents
Document Sharing Hub

Full document details: BS EN 4681-003:2024

1 Scope

This document specifies the characteristics of UV laser printable electrical lightweight wires AD family for use in the on-board 115 V (phase to neutral) or 200 V (phase to phase) AC, 28 VDC electrical systems of aircraft at operating temperatures between −65 °C and 180 °C. These cables are demonstrated to be arc resistant in sizes AWG 24 to 14 (115 VAC/200 VAC).

In addition, these cables are suitable for use at 230 VAC/400 VAC in pressurized zones only when installed to take account of possible short circuit effects.

Other electrical system configurations are the responsibility of the users.

It is also possible to mark these cables by qualified compatible marking which satisfies the requirements of EN 3838:2022.

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 3475-100, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 100: General*

EN 3475-201, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 201: Visual examination*

EN 3475-202, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 202: Mass*

EN 3475-203, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 203: Dimensions*

EN 3475-301, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 301: Ohmic resistance per unit length*

EN 3475-302, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 302: Voltage proof test*

EN 3475-303, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 303: Insulation resistance*

EN 3475-304, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 304: Surface resistance*

EN 3475-305, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 305: Overload resistance*

EN 3475-306, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 306: Continuity of conductors*

EN 3475-401, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 401: Accelerated ageing*

EN 3475-402, *Aerospace series — Cables, electrical, aircraft use — Test methods — Part 402: Shrinkage and delamination*

Documents
Document Sharing Hub
Full document details: BS EN 4681-003:2024