

INTERNATIONAL STANDARD

IEC
1314-1-1

QC 880001

First edition
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Fibre optic fan-outs –

Part 1-1: Blank detail specification – Environmental categories 1, 2, 3, 5 and 99

*Système d'éclatement pour fibres
et câbles optiques –*

*Partie 1-1:
Spécification particulière-cadre –
Catégories d'environnement
1, 2, 3, 5 et 99*



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et pour les appareils électromédicaux,

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- IEC 617: *Graphical symbols for diagrams*;

and for medical electrical equipment,

- IEC 878: *Graphical symbols for electromedical equipment in medical practice*.

The symbols and signs contained in the present publication have either been taken from IEC 27, IEC 417, IEC 617 and/or IEC 878, or have been specifically approved for the purpose of this publication.

IEC publications prepared by the same technical committee

The attention of readers is drawn to the end pages of this publication which list the IEC publications issued by the technical committee which has prepared the present publication.

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Withdrawn

INTERNATIONAL ELECTROTECHNICAL COMMISSION

FIBRE OPTIC FAN-OUTS –

**Part 1-1: Blank detail specification –
Environmental categories 1, 2, 3, 5 and 99**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
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International Standard IEC 1314-1-1 has been prepared by subcommittee 86B: Fibre optic interconnecting devices and passive components, of IEC technical committee 86: Fibre optics.

The text of this standard is based on the following documents:

FDIS	Report on voting
86B/838/FDIS	86B/867/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

The QC number that appears on the front cover of this publication is the specification number in the IEC Quality Assessment System for Electronic Components (IECQ).

Withdrawn

FIBRE OPTIC FAN-OUTS –

Part 1-1: Blank detail specification – Environmental categories 1, 2, 3, 5 and 99

1 General

1.1 Scope

This blank detail specification is not, by itself, a specification. It is part of the generic specification IEC 1314-1 (QC 880000), and applies to each of the environmental categories 1, 2, 3, 5 and 99 (see IEC 874-1-1).

It includes:

- the mandatory quality assurance test and examination schedules and performance requirements to be performed for each of Environmental categories 1, 2, 3, 5 and 99;
- a blank worksheet with instructions for preparing detail specifications.

Environmental category 1 suggests a protected environment consisting of controlled temperature and humidity conditions with complete protection from the elements. Examples of such environments are offices and buildings with climatically controlled conditions.

Environmental category 2 suggests an environment without climate control but with protection from the elements. Examples of such environments are outdoor enclosures, cabinets and storage facilities.

Environmental category 3 suggests a severe environment without climate control or protection from the elements. Examples of such environments are those found in land vehicles, ships and aircraft.

Environmental category 5 suggests a protected environment with climate control and protection from the elements but with a severe usage of the fan-out. Examples of such environments are office buildings with climatically controlled conditions where the connectors/splices of the fan-out will experience repeated engagement and disengagement.

Environmental category 99 should be used where the standard Environmental categories are not suitable for the application.

Detail specification writers may add tests and/or groups of tests to a particular environmental category. However, the detail specification writer shall not remove tests nor alter the sequence of an environmental category. When a detail specification writer adds tests to a specified category, the environmental category shall be given a plus (+) designation. The same applies for adding and removing of examinations and measurements.

Example: environmental category 2 (+).

1.2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 1314. At the time of publication, the editions indicated were valid. All normative documents are subject to revision, and parties to agreements based on this part of IEC 1314 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

References to a specific clause or subclause of a standard include all subclauses to the reference, unless otherwise specified.

IEC 874, *Connectors for optical fibres and cables*

IEC 1073, *Splices for optical fibres and cables*

IEC 1300, *Fibre optic interconnecting devices and passive components – Basic test and measurement procedures*

IEC 1314-1:1995, *Fibre optic fan-outs – Part 1: Generic specification*

2 Qualification inspection

2.1 Procedure

The detail specification shall state the qualification approval procedure to be used (see 3.3 of IEC 1314-1).

2.2 Inspection schedule and performance requirements

The mandatory inspection schedules for qualification by the fixed-sample procedure are defined in tables 1-1, 1-2, 1-3, 1-5 and 1-99, respectively, for Environmental categories 1, 2, 3, 5 and 99 of the detail specification worksheet (see clause 4).

3 Quality conformance inspection

3.1 Lot-by-lot inspection

The mandatory inspection schedules for lot-by-lot inspection (groups A and B) are defined in tables 2-1, 2-2, 2-3, 2-5 and 2-99, respectively for Environmental categories 1, 2, 3, 5 and 99 of the detail specification worksheet (see clause 4).

3.2 Periodic inspection

The mandatory inspection schedules for periodic inspection (groups C and D) are defined in tables 3-1, 3-2, 3-3, 3-5 and 3-99, respectively, for environmental categories 1, 2, 3, 5 and 99 of the detail specification worksheet (see clause 4).

4 Detail specification worksheet

The following worksheet is provided to aid in the preparation of detail specifications. Spaces are provided for entering information. When the spaces are completed, the detail specification can be drafted in its final form.

The spaces are identified by numbers between square brackets. Instructions for completing these numbered spaces are given below. When drafting the final detail specification, eliminate the square-bracketed instruction numbers.

- [1] The national IEC number assigned to the detail specification is added by the National Committee.
- [2] The date of the detail specification is added by the National Committee.
- [3] Enter the name and address of the National Committee.
- [4] Enter the applicable classification categories (see 2.1 of IEC 1314-1).
- [5] Enter the connector/splice type name.
- [6] Enter the sectional specifications of the connector and/or splice, if any.

If the connectors of the fan-out do not meet standard interfaces, or, either the connectors or the splices of the fan-out are not classified by a climatic category, add the words "not applicable".

- [7] Add the qualification procedure required for the detail specification (fixed-sample procedure or lot-by-lot procedure (see 3.3 of IEC 1314-1).
- [8] Specify the component(s) control dimensions in the format shown (see 2.2.3 of IEC 1314-7). Include:
 - outline drawings and dimensions of the entire fan-out and of the component parts (with the exception of the connectors and/or splices). When a connector standard type interface is referenced, these dimensions shall fall within the mating face dimensions defined for the type in the relevant sectional specification (see 2.2.3.3 of IEC 874-1);
 - control dimensions for all variants;
 - outline drawing and dimension of any special mounting device required for storage and protection of the fan-out, where applicable;
 - measurement method(s) to be used when the requirements of 2.2.4.1 of IEC 1314-7 apply.

Add figures showing the dimensions for standard reference components and gauges, if required (see 2.2.4 of IEC 1314-7). Display the drawings in the format shown.

- [9] Tabulate the identification number for each variant of each component (see 2.6.1 of IEC 1314-7). Assign a column in the table for each variant feature. For example, number of fibres or channels, fibre or cable sizes, etc.
- [10] Specify the test fibre/cable for kit arrangement samples. If the detail specification does not cover a kit arrangement, eliminate the table.
- [11] Enter supplementary information with respect to marking, requirements for certified records of released lots, and other appropriate information (see 2.6.2, 2.6.3 and 3.5 of IEC 1314-7).
- [12] Tables 1-1, 1-2, 1-3, 1-5 and 1-99 define the measurements and tests for qualification by fixed sample size respectively required for environmental categories 1, 2, 3, 5 and 99. If qualification by lot-by-lot and periodic procedure is specified, eliminate the tables and renumber subsequent tables in the detail specification accordingly.

Specify the sample size for each group in column n.

- [13] Tables 2-1, 2-2, 2-3, 2-5 and 2-99 define the minimum measurements and tests, respectively required for environmental categories 1, 2, 3, 5 and 99, for groups A and B.

Detail specification writers may add measurements or tests to the tables. However, specified measurements or tests may not be removed.

Add the assessment level designation along with the inspection level and AQL in the appropriate place in the tables (see 2.1.7 of IEC 1314-7).

- [14] Tables 3-1, 3-2, 3-3, 3-5 and 3-99 define the measurements and tests required for environmental categories 1, 2, 3, 5 and 99, for groups C and D periodic tests.

Add the assessment level designation together with the sample size, n , and the inspection period, p , in the appropriate place in the tables (see 2.1.7 of IEC 1314-7).

After completing the group C0 or D0 measurements and tests, the sample is divided to form the other sample groups (see 3.3.3 of IEC 1314-7). When needed, instructions for dividing the sample are given as a note to the tables.

- [15] When completed, tables 4-1, 4-2, 4-3, 4-5 and 4-99 will contain the details, measurements and the performance requirements for all tests and measurements which appear in the corresponding tables 1-1, 1-2, 1-3, 1-5 and 1-99.

The format for measurements appears on lines [16], [17], and [18]. Enter the measurement procedure title and reference location on line [16] and the measurement details on lines [17].

The requirements for independent measurements (measurements which are not part of an environmental test) shall either be specified as a note to the tables where it was added (tables 1-1, 2-1 or 3-1, 5-1, 1-1, 1-2, 1-3, 1-5 and 1-99), or included in table 4-1 under the appropriate measurement on lines [18]. The requirements for dependent measurements (measurements which are part of an environmental test) shall be specified under the environmental test in table 4-1.

The format for environmental tests appears on lines [19], [20], [21], [22], and [23]. Enter the test procedure title and reference location on line [19]. Enter the test details on lines [20]. Enter the initial measurements to be made along with the performance requirements on line [21]. Enter the measurements to be made during the test together with the performance requirements on line [22]. Enter the final measurements to be made together with the performance requirements on line [23].

NATIONAL STANDARDS ORGANIZATION: [3]	 [1] Date..... [2]
DETAIL SPECIFICATION FIBRE OPTIC COMPONENT OF ASSESSED QUALITY IN ACCORDANCE WITH - Generic specification: IEC 1314-1, QC 880000 - Blank detail specification: IEC 1314-1-1, QC 880001 FAN-OUT	
CLASSIFICATION: Type: Name..... [5] Sectional specifications for connectors, see IEC 874 Sectional specifications for splices, see IEC 1073 [6] Configuration:..... (see figure.....) Arrangement:..... Style: packaging technology:..... Variants: see pages..... Climatic category:..... [4] Environmental category:..... Assessment level:.....	
QUALIFICATION PROCEDURE: [7]	
SAFETY WARNING: Take care when handling small diameter optical fibre to prevent puncturing the skin, especially in the eye area. Direct viewing of the end of an optical fibre when it is propagating energy is not recommended unless prior assurance is obtained as to the safe energy output level.	