

Aerospace series - Electrical system - Load analysis

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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English Version

Aerospace series - Electrical system - Load analysis

Série aérospatiale - Réseau électrique - Bilan électrique

Luft- und Raumfahrt - Elektrisches Bordnetz -
Energiebilanz

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European foreword

This document (EN 3830:2022) has been prepared by the Aerospace and Defence Industries Association of Europe — Standardization (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of an identical text or by endorsement, at the latest by August 2022, and conflicting national standards shall be withdrawn at the latest by August 2022.

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Introduction

This document is applicable to a.c. and d.c. aircraft electrical power systems in accordance with EN 2282 and has been prepared under consideration of MIL-E-7016F. It describes the methods and procedures necessary for the preparation of an electrical load analysis.

1 Scope

This document defines the method to establish an electrical load analysis which is used to compare the supply capacity of an electrical power generation system with the power demand of the connected electrical utilisation equipment.

It shall prove that the power sources are capable of supplying these loads under all electrical power system states and aircraft operating conditions and that specified growth capacity for future requirements is ensured.

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 2282, *Aerospace series — Characteristics of aircraft electrical supplies*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1 Electrical load and power analysis

3.1.1

electrical load and power analysis

an electrical load and power source analysis comprises two parts:

- an analysis of the capacity of an electrical power supply system (power source analysis) ;
- an analysis of the power requirements of the utilisation equipment connected to it (load analysis)

3.1.2

power source analysis

a power source analysis determines the capacity of a power supply system to satisfy the connected utilisation equipment under all specified aircraft conditions and provides a calculation of the percentage load growth capacity

3.1.3

load analysis

a load analysis is essentially a compilation of the electrical loads, grouped in accordance with the busbar arrangement of the supplying power sources, and a summation of the equipment load values required from these during the same aircraft operating conditions as specified for the power source analysis