



BSI Standards Publication

Information technology – Data centre facilities and infrastructures

Part 4-7: Cooling Efficiency Ratio

National foreword

This British Standard is the UK implementation of EN 50600-4-7:2020.

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

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English Version

**Information technology - Data centre facilities and infrastructures
- Part 4-7: Cooling Efficiency Ratio**

Technologie de l'information - Installation et infrastructures
de centres de traitement de données - Partie 4-7: Taux
d'efficacité de refroidissement

Informationstechnik - Einrichtungen und Infrastrukturen von
Rechenzentren - Teil 4-7: Wirkungsgrad der Kühlung (CER)

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European foreword

This document (EN 50600-4-7:2020) has been prepared by CLC/TC 215 “Electrotechnical aspects of telecommunication equipment”.

The following dates are fixed:

- latest date by which this document has (dop) 2021-02-10
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publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2023-02-10
standards conflicting with this document
have to be withdrawn

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Introduction

The unrestricted access to internet-based information demanded by the information society has led to an exponential growth of both internet traffic and the volume of stored/retrieved data. Data centres are housing and supporting the information technology and network telecommunications equipment for data processing, data storage and data transport. They are required both by network operators (delivering those services to customer premises) and by enterprises within those customer premises.

Data centres need to provide modular, scalable and flexible facilities and infrastructures to easily accommodate the rapidly changing requirements of the market. In addition, energy consumption of data centres has become critical both from an environmental point of view (reduction of carbon footprint) and with respect to economic considerations (cost of energy) for the data centre operator.

The implementation of data centres varies in terms of:

- a) purpose (enterprise, co-location, co-hosting, or network operator facilities);
- b) security level;
- c) physical size;
- d) accommodation (mobile, temporary and permanent constructions).

The needs of data centres also vary in terms of availability of service, the provision of security and the objectives for energy efficiency. These needs and objectives influence the design of data centres in terms of building construction, power distribution, environmental control and physical security. Effective management and operational information is required to monitor achievement of the defined needs and objectives.

This series of European Standards specifies requirements and recommendations to support the various parties involved in the design, planning, procurement, integration, installation, operation and maintenance of facilities and infrastructures within data centres. These parties include:

- 1) owners, facility managers, ICT managers, project managers, main contractors;
- 2) architects, consultants, building designers and builders, system and installation designers;
- 3) facility and infrastructure integrators, suppliers of equipment;
- 4) installers, maintainers.

At the time of publication of this document, the EN 50600 series will comprise the following standards and documents:

- EN 50600-1, *Information technology — Data centre facilities and infrastructures — Part 1: General concepts*;
- EN 50600-2-1, *Information technology — Data centre facilities and infrastructures — Part 2-1: Building construction*;
- EN 50600-2-2, *Information technology — Data centre facilities and infrastructures — Part 2-2: Power supply and distribution*;
- EN 50600-2-3, *Information technology — Data centre facilities and infrastructures — Part 2-3: Environmental control*;
- EN 50600-2-4, *Information technology — Data centre facilities and infrastructures — Part 2-4: Telecommunications cabling infrastructure*;
- EN 50600-2-5, *Information technology — Data centre facilities and infrastructures — Part 2-5: Security systems*;

- EN 50600-3-1, *Information technology — Data centre facilities and infrastructures — Part 3-1: Management and operational information*;
- EN 50600-4-1, *Information technology — Data centre facilities and infrastructures — Part 4-1: Overview of and general requirements for key performance indicators*;
- EN 50600-4-2, *Information technology — Data centre facilities and infrastructures — Part 4-2: Power Usage Effectiveness*;
- EN 50600-4-3, *Information technology — Data centre facilities and infrastructures — Part 4-3: Renewable Energy Factor*;
- FprEN 50600-4-6, *Information technology — Data centre facilities and infrastructures — Part 4-6: Energy Reuse Factor*
- FprEN 50600-4-7, *Information technology — Data centre facilities and infrastructures — Part 4-7: Cooling Efficiency Ratio*;
- CLC/TR 50600-99-1, *Information technology — Data centre facilities and infrastructures — Part 99-1: Recommended practices for energy management*;
- CLC/TR 50600-99-2, *Information technology — Data centre facilities and infrastructures — Part 99-2: Recommended practices for environmental sustainability*;
- CLC/TR 50600-99-3, *Information technology — Data centre facilities and infrastructures — Part 99-3: Guidance to the application of EN 50600 series*

The inter-relationship of the standards within the EN 50600 series is shown in Figure 1.

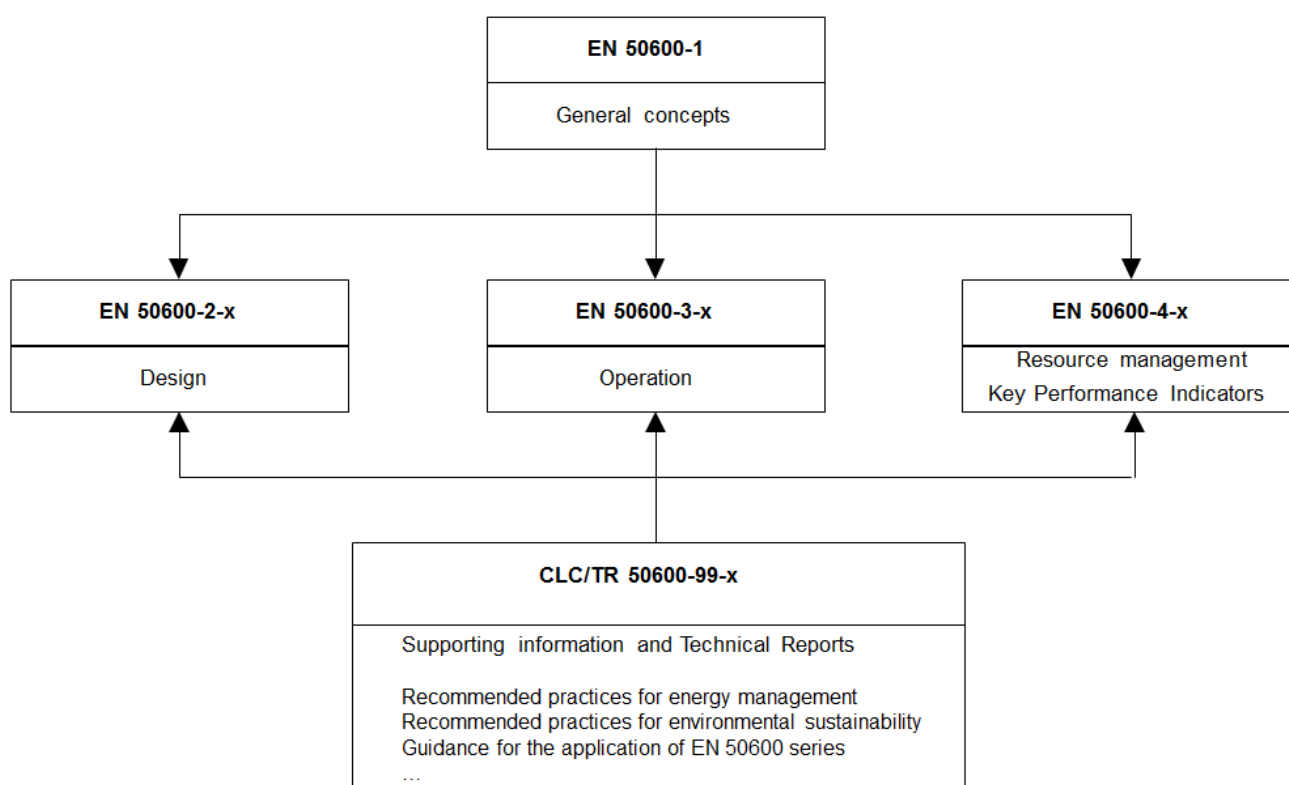


Figure 1 — Schematic relationship between the EN 50600 series of documents

EN 50600-2-X standards specify requirements and recommendations for particular facilities and infrastructures to support the relevant classification for “availability”, “physical security” and “energy efficiency enablement” selected from EN 50600-1.