

Contents

| | |
|-----------|--|
| | Foreword |
| | Introduction |
| 1 | Scope |
| 2 | Normative references |
| 3 | Terms and definitions |
| 4 | Symbols and abbreviations |
| 4.1 | Symbols |
| 4.2 | Subscripts |
| 5 | Description of the methods |
| 5.1 | General |
| 5.2 | Output of the method 1— Comprehensive method |
| 5.3 | Optional methods |
| 5.3.1 | Method 2 — Quick calculation method |
| 5.3.2 | Method 3 — Direct metering method |
| 6 | Method 1 — Calculation of the energy required for lighting |
| 6.1 | Output data |
| 6.2 | Calculation time steps |
| 6.3 | Input data |
| 6.3.1 | Lighting system data |
| 6.3.1.1 | New or refurbished building lighting system |
| 6.3.1.2 | Existing building lighting system |
| 6.3.2 | Product data |
| 6.3.2.1 | General |
| 6.3.2.2 | Luminaire description data (qualitative) |
| 6.3.2.3 | Luminaire technical data |
| 6.3.3 | System design data |
| 6.3.4 | Operating conditions |
| 6.3.5 | Constants and physical data |
| 6.4 | Calculation procedure |
| 6.4.1 | Applicable time step |
| 6.4.2 | Operating conditions calculation |
| 6.4.3 | Energy calculation |
| 6.4.3.1 | General |
| 6.4.3.2 | Installed power calculation |
| 6.4.3.2.1 | Assessment of installed power in existing buildings |
| 6.4.3.3 | Standby system power requirements |
| 6.4.3.4 | Occupancy dependency factor F_o |
| 6.4.3.4.1 | General |
| 6.4.3.4.2 | Case $F_o = 1$ |
| 6.4.3.4.3 | Case $F_o < 1$ |
| 6.4.3.5 | Daylight dependency factor F_D |
| 6.4.3.6 | Constant illuminance dependency factor F_c |
| 6.4.3.7 | Calculation of energy for lighting |
| 6.5 | Expenditure factors for lighting systems |
| 7 | Method 2 — Quick calculation of the energy required for lighting |
| 7.1 | Output data |

| | |
|---------|--|
| 7.2 | Calculation time steps |
| 7.3 | Input data |
| 7.3.1 | Lighting system data |
| 7.3.2 | Luminaire data |
| 7.3.2.1 | General |
| 7.3.2.2 | Product description data (qualitative) |
| 7.3.2.3 | Product technical data |
| 7.3.3 | System design data |
| 7.3.4 | Operating conditions |
| 7.3.5 | Constants and physical data |
| 7.4 | Calculation procedure |
| 7.4.1 | Applicable time step |
| 7.4.2 | Operating conditions calculation |
| 7.4.3 | Energy calculation |
| 7.4.3.1 | General |
| 7.4.3.2 | Installed power calculation |
| 7.4.3.3 | Standby system power requirements |
| 7.4.3.4 | Occupancy dependency factor Fo |
| 7.4.3.5 | Daylight supply dependency factor FD |
| 7.4.3.6 | Constant illuminance dependency factor Fc |
| 7.4.3.7 | Energy calculation |
| 7.5 | Expenditure factors for lighting systems |
| 8 | Method 3 — Metered energy used for lighting |
| 8.1 | Output data |
| 8.2 | Calculation time steps |
| 8.3 | Input data |
| 8.4 | Calculation procedure of annual energy |
| 9 | Quality control |
| 9.1 | Method 1 |
| 9.2 | Method 2 |
| 9.3 | Method 3 |
| 10 | Compliance check |
| 10.1 | General |
| 10.2 | Method 1 |
| 10.3 | Method 2 |
| 10.4 | Method 3 |
| Annex A | (informative) Input data sheet with default values and choices |
| A.1 | Introduction |
| A.2 | Method 2 |
| A.2.1 | System design data |
| A.2.1.1 | General |
| A.2.1.2 | Standby energy density |
| A.2.1.3 | Annual operating hours |
| A.2.1.4 | Daylight supply factor for vertical façades |
| A.2.1.5 | Daylight supply factor for roof lights |
| A.2.1.6 | Absence factor FA for rooms and zones in building types |
| A.2.1.7 | Occupancy dependency factor Fo |
| A.2.1.8 | Example constant illuminance dependency factor Fc |
| A.3 | Method 3 |
| Annex B | (normative) Simplified method for installed power estimation |
| Annex C | (normative) Assessment of the installed power for lighting systems in existing buildings |
| Annex D | (normative) Occupancy estimation |
| Annex E | (informative) Expenditure factors for lighting systems |
| E.1 | General |
| E.2 | Energy need and energy use for lighting |
| E.3 | Expenditure factor for lighting |

- E.3.1 General
- E.3.2 Partial expenditure factor for constant illuminance control eL,C
- E.3.3 Partial expenditure factor for occupancy dependent lighting control eL,O
- E.3.4 Partial expenditure factor for daylight dependent lighting control eL,D
- E.3.5 Partial expenditure factor for the electric lighting system eL,ES
- E.4 Application of expenditure factors
 - E.4.1 General
 - E.4.2 Example calculation of expenditure factors for lighting systems
 - E.4.3 Space types under consideration
 - E.4.4 Partial expenditure factors for the electric lighting system
 - E.4.5 Sample expenditure factors for lighting systems
- E.5 Approach to expenditure factors for lighting systems
- E.6 Expenditure factors for lighting systems calculation

Annex F (normative) Constant illuminance

- F.1 General
- F.2 Constant illuminance factor (Fc)
- F.3 Constant light output (CLO) system

Page count: 58