

EN 13201-3:2015 (E)

Contents

Page

European foreword.....	4
Introduction	5
1 Scope	6
2 Normative references	6
3 Terminology	6
3.1 Terms and definitions	6
3.2 List of symbols and abbreviations	9
4 Mathematical conventions.....	11
4.1 General	11
4.2 Decimal places of the requirements.....	12
5 Photometric data.....	12
5.1 General	12
5.2 The <i>I</i> -table.....	12
5.2.1 System of coordinates and advised angular intervals of the <i>I</i> -table.....	12
5.2.2 Linear interpolation in the <i>I</i> -table	14
5.3 The <i>r</i> -table	16
5.3.1 The <i>r</i> -table format.....	16
5.3.2 Linear interpolation in the <i>r</i> -table.....	19
6 Calculation of $I(C, \gamma)$	19
6.1 General.....	19
6.2 Mathematical conventions for distances measured on the road.....	19
6.3 Mathematical conventions for rotations	20
6.4 Calculation of C and γ	22
6.4.1 Calculation of x', y' and H'	22
6.4.2 Evaluation of installation azimuth ϕ	23
6.4.3 Calculation of C	23
6.4.4 Calculation of γ	23
7 Calculation of photometric quantities.....	24
7.1 Luminance	24
7.1.1 Luminance at a point.....	24
7.1.2 Field of calculation for luminance.....	25
7.1.3 Position of calculation points	26
7.1.4 Position of observer	27
7.1.5 Luminaires included in calculation	29
7.2 Illuminance.....	29
7.2.1 General.....	29
7.2.2 Horizontal illuminance at a point	30
7.2.3 Hemispherical illuminance at a point.....	30
7.2.4 Semi-cylindrical illuminance at a point	31
7.2.5 Vertical illuminance at a point	32
7.2.6 Field of calculation for illuminance.....	33
7.2.7 Position of calculation points	33
7.2.8 Luminaires included in calculation	34

7.2.9	Illuminance on areas of irregular shape	35
8	Calculation of quality characteristics	35
8.1	General	35
8.2	Average luminance	35
8.3	Overall uniformity	35
8.4	Longitudinal uniformity	35
8.5	Threshold increment f_{TI}	36
8.5.1	Definition and conventional hypotheses	36
8.5.2	Threshold Increment calculation process	38
8.5.3	Threshold increment calculation for C and P lighting classes	39
8.6	Edge Illuminance Ratio R_{EI}	39
9	Ancillary data	41
Annex A	(informative) Mathematical information technology conventions and flow chart diagrams	43
A.1	Mathematical and Information Technology conventions used in addition to Clause 4 to define the variables used in the following logical flow charts of the lighting calculation program	43
A.2	Linear interpolation in the tables	47
A.3	Information Technology requirements	49
Annex B	(informative) Extended r -table format for low mounting height luminaire	61
Bibliography		63