

ISO/IEC 15415:2011-12 (E)

Information technology - Automatic identification and data capture techniques - Bar code symbol print quality test specification - Two-dimensional symbols

Contents		Page
Foreword		v
Introduction		vi
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	Symbols and abbreviated terms	3
5	Quality grading	3
5.1	General	3
5.2	Expression of quality grades	4
5.3	Overall Symbol Grade	4
5.4	Reporting of symbol grade	5
6	Measurement methodology for two-dimensional multi-row bar code symbols	5
6.1	General	5
6.2	Symbologies with cross-row scanning ability	6
6.2.1	Basis of grading	6
6.2.2	Grade based on analysis of scan reflectance profile	6
6.2.3	Grade based on Codeword Yield	7
6.2.4	Grade based on unused error correction	8
6.2.5	Grade based on codeword print quality	9
6.2.6	Overall symbol grade	10
6.3	Symbologies requiring row-by-row scanning	11
7	Measurement methodology for two-dimensional matrix symbols	11
7.1	Overview of methodology	11
7.2	Obtaining the test images	12
7.2.1	Measurement conditions	12
7.2.2	Raw image	12
7.2.3	Reference grey-scale image	12
7.2.4	Binarised image	13
7.3	Reference reflectivity measurements	13
7.3.1	General requirements	13
7.3.2	Light source	13
7.3.3	Effective resolution and measuring aperture	13
7.3.4	Optical geometry	14
7.3.5	Inspection area	16
7.4	Number of scans	16
7.5	Basis of scan grading	16
7.6	Grading procedure	16
7.7	Additional reflectance check over extended area	17
7.8	Image assessment parameters and grading	17
7.8.1	Use of reference decode algorithm	17
7.8.2	Decode	17
7.8.3	Symbol Contrast	18
7.8.4	Modulation and related measurements	18

7.8.5	Fixed Pattern Damage	21
7.8.6	Axial Nonuniformity	21
7.8.7	Grid Nonuniformity	22
7.8.8	Unused error correction	23
7.8.9	Additional grading parameters	23
7.9	Scan grading	23
7.10	Overall Symbol Grade	24
7.11	Print growth	24
8	Measurement methodologies for composite symbologies	24
9	Substrate characteristics	25
Annex A (normative)	Symbology-specific parameters and values for symbol grading	26
Annex B (informative)	Symbol grading flowchart for two-dimensional matrix symbols	30
Annex C (informative)	Interpreting the scan and symbol grades	31
Annex D (informative)	Guidance on selection of grading parameters in application specifications ..	33
Annex E (informative)	Substrate characteristics	39
Annex F (informative)	Parameter grade overlay applied to two-dimensional symbologies	41
Bibliography	42