ISO/IEC 21794-5:2024-11 (E)

Information technology - Plenoptic image coding system (JPEG Pleno) - Part 5: Holography

Contents

Page

Foreword iv

Introduction v

1 Scope 1

2 Normative references 1

3 Termsanddefinitions 1

4 Symbols and abbreviated terms 2
4.1 Symbols 2
4.2 Abbreviated terms 3

5 Conventions 4
5.1 Naming conventions for numerical values 4
5.2 Operators 4
5.2.1 Arithmetic operators 4
5.2.2 Logical operators 5
5.2.3 Relational operators 5
5.2.4 Precedence order of operators 5
5.2.5 Mathematical functions 6

6 Representation of digital holograms 6
6.1 Digital holograms and their signal properties 6
6.2 Functional overview of the decoding process 8
6.3 Encoder requirements 9
6.4 Decoder requirements 9

Annex A (normative) JPEG Pleno Holography superbox 10

Annex B (normative) JPEG Pleno Holography codestream syntax 16

Annex C (normative) Non-binary lossy coding 25

Annex D (normative) Binary lossless coding 33

Annex E (normative) Hologram tiling 37

Annex F (normative) Light propagation models 44

Annex G (normative) Short-time Fourier transform 47

Annex H (normative) Quantization 49

Annex I (normative) Arithmetic coding 53

Annex J (informative) Rate-distortion optimization 57

Bibliography 65