

ISO 10505:2009-05 (E)

Photography - Root mean square granularity of photographic films - Method of measurement

Contents		Page
Foreword		iv
Introduction		v
1	Scope	1
2	Normative references	1
3	Terms and definitions	1
4	Measurement instrument	3
4.1	General	3
4.2	Microdensitometer	3
4.3	Spectral products	6
4.4	Spatial frequency response	7
4.5	Scanning motion	7
5	Instrument electronics	8
5.1	Conversion to density	8
5.2	Temporal frequency response of the instrument	8
5.3	Instrument noise	8
6	Diffuse rms-granularity	8
6.1	Optical geometry	8
6.2	Diffuse conversion factor g	9
7	Preparation of specimens	9
7.1	Sampling and storage	9
7.2	Exposure	10
7.3	Processing	10
7.4	Specimen uniformity	10
7.5	Sampled area	10
8	Operation of the measurement instrument	10
8.1	Positioning the specimen	10
8.2	Specimen scanning	10
8.3	Control of focus	10
8.4	Rate of scan	11
8.5	Density mode	11
9	Method of test	11
9.1	Principle	11
9.2	Statistical background	11
9.3	Construction of the median estimator and the 95 % confidence intervals	12
9.4	Instrument noise	13
9.5	Diffuse rms-granularity	14
9.6	Uncertainty of the rms-granularity result	14
9.7	Reporting results	14
9.8	Summary of rms-granularity characterization parameters	15
Annex A (informative)	Typical viewing magnifications for critical naked-eye viewing	16

Annex B (informative) Limiting the temporal frequency response of the measuring instrument	18
Annex C (informative) The effects of specimen non-uniformity	20
Annex D (informative) Derived constants c for subgroup sizes 10, 20,, 200	21
Annex E (informative) Determination of sample size for specified precision and subgroup size	22
Bibliography	24