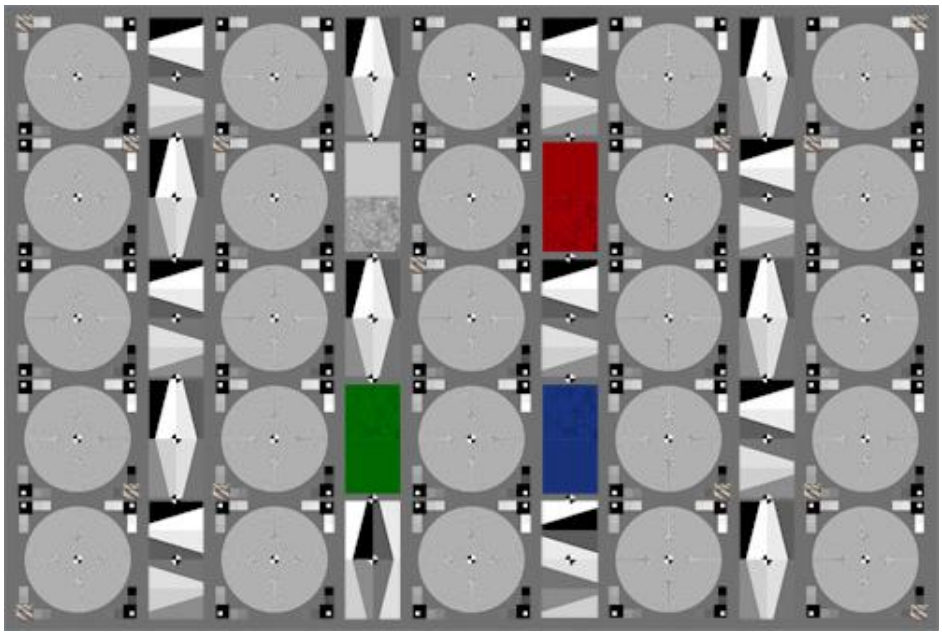
TE268 A data sheet



Overview

Product name	TE268 A
Principle	Test chart to determine the resolution of a digital camera based on sinusoidal Siemens stars, slanted edges and noise pattern. The Siemens stars and slanted edges comply to ISO 12233.

Features

Siemens stars

Type of pattern	25 sinusoidal Siemens stars, each with 16 surrounding gray patches
Modulation	~92%
Cycles	144
Diameter stars [mm]	4:3 / 3:2 A1066 H: 140 / --- A1066 S: 145 / 141 A460: 61 / 55
Diameter registration marks [mm]	H: 5 S: 12
Gray steps	The contrast of the gray scale complies to the contrast of the Siemens star. Please refer to Acceptance protocol for exact reflectance of each step.
Reference data	Individually measured on center star. Allowed variation of linearity of gray patches of 15% (remission) max.
Sample rate* [MP]	minimum / maximum A1066 H: 8 / 180 (> 8K)** A1066 S: 2 / 30 (HDTV - 8K)** A460 H: 2 / 40 (HDTV - 8K)**

Slanted edges

Type/s of pattern	16 sub charts of slanted edges, each consisting of 4 slanted edges with different modulation
Modulation [%]	40, 60, 80, 100

Size of sub chart [mm]	4:3 vertical / horizontal	3:2 vertical / horizontal
A1066 H	73 x 35 / 70 x 38	---
A1066 S	80 x 37 / 75 x 40	78 x 36 / 73 x 39
A460	33 x 15 / 31 x 17	30 x 14 / 28 x 15

Sample rate* [MP]	minimum	maximum	
A1066 H	---***	180	(> 8K)**
A1066 S	---***	30	(HDTV - 8K)**
A460 H	---***	40	(HDTV - 8K)**

Dead Leaves/Noise patches

Type/s of pattern	4 sub charts of dead leaves patterns (gray, red green, blue) with reference patches

Size of sub chart [mm]	4:3	3:2
A1066 H	140 x 70	---
A1066 S	150 x 75	145 x 72
A460	61 x 31	55 x 27

Variations	Circular structures with random diameters and gray and color levels

General description hardware

Type	Reflective (A)
Aspect ratio	4:3 / 3:2

Chart size [mm]	W	H	D
A1066 H/S	1245	835	3.2
A460	600	500	3.2

Picture size [mm]	4:3		3:2	
	W	H	W	H
A1066 H	1040	780	---	---
A1066 S	1110	832	1213	808
A460	460	345	460	306

Material	H: Photographic paper, matt finishing, resolution 9-10 LP/mm, made from three parts which can differ in gray value with a tolerance of ± 0.03 OD S: Specific matt paper, resolution 3-4 LP/mm
Mounting	aluminum composite panel (A1066) aluminum (A460)
Edge protection	none (A1066), fabric tape (A460)
Chart size tolerances	Up to +/- 0.5 mm as they are handmade in-house and no edge protection is used Up to +/- 2 mm as they are handmade in-house and fabric tape is used (A460)
Service life	3 years

Storage	Dark, dry, and free from harmful gas (e.g., formaldehyde or ozone). 20 °C and 25 °C with a humidity of 35% – 65% and no direct sunlight at any time.
Scope of delivery	test chart, cardboard box (except A1066), acceptance protocol

Miscellaneous

Evaluation / Assessment	supported by iQ-Analyzer In some cases, not all patterns may be analyzed. Please refer to the latest iQ-Analyzer manual for details Visual appraisal
Reference data iQ-Analyzer-X	Not applicable
Measurement device	X-Rite eXact (reflective charts) https://www.image-engineering.de/content/products/charts/IE_reference_data_accuracy.pdf
Standards	ISO 12233 Resolution and special frequency responses
Terms & Conditions	image-engineering.de/terms-and-conditions

* if chart fills the image height the chart can be used with a camera of minimum/maximum sample rate, stated in mega pixel (MP)

** HDTV ~ 2.1 MP, 4K ~ 8.3 MP, 8K ~ 33 MP

*** no lower limit for Slanted Edges, small ROI increases variance, min. 100-pixel ROI required