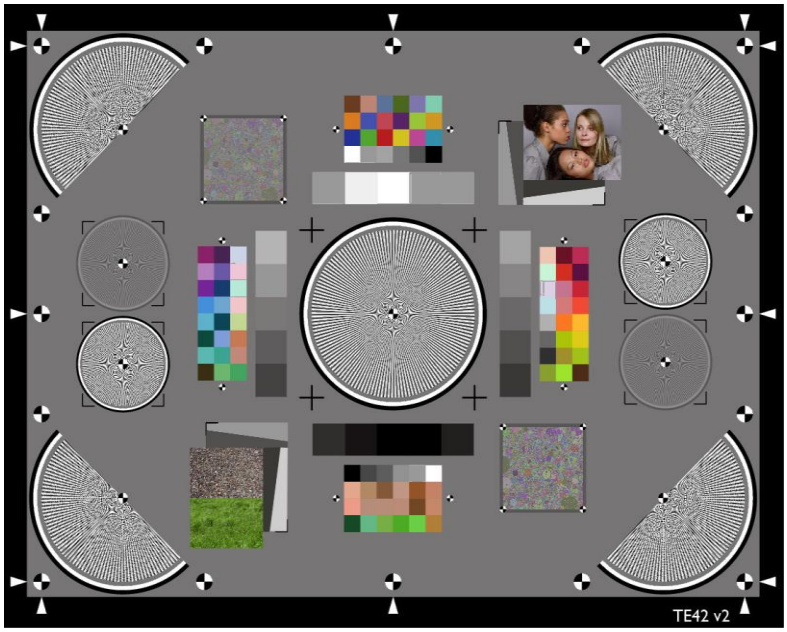
TE42 V2 A datasheet



Overview

Product name	TE42 V2
Principle	A multipurpose test chart for the analysis of resolution, texture reproduction, acutance, dynamic range, noise, color reproduction, distortion, shading, chromatic aberration, and visual analysis. The ability to analyze multiple image quality factors in a single image.

Features

OECF

Type/s of pattern	Grayscale
Number of steps	20
Contrast	≈ 800:1 (58 dB, 10 f-stops) The approximate value of the darkest patch is velvet.
Density/Refection values	Individually measured values are provided in a separate Acceptance Protocol. Production tolerance is ± 0.03 OD.

Siemens stars

Type/s of pattern	9 Sinusoidal Siemens stars • 1 center star, full circle, full contrast • 4 corner stars, half circle, full contrast • 2 small stars, full circle, full contrast • 2 small stars, full circle, low contrast
Modulation	Full contrast: ≈ 95 % (S) / ≈ 92 % (H) Low contrast: ≈ 55 % (S) / ≈ 58 % (H) Production tolerance is ± 3%.
Cycles	144
Diameter stars	

	Full size	Small size
A1066	190 mm	96 mm
A460	76 mm	50 mm

Diameter registration marks	H	5 mm
	S	12 mm

Sample rate* [MP]	minimum	maximum	
A1066 H	2	120	(> 8K)**
A1066 S	2	30	(HDTV - 8K)**
A460 H	2	40	(HDTV - 8K)**

Slanted edges

Type/s of pattern	4 Slanted Edges • Two sub-charts in a horizontal and vertical orientation • Each has a low and high contrast
Modulation	Low contrast: 45% - 60% High contrast: > 85%

Size of sub-chart	4:3 [mm]	16:9 [mm]
A1066	100 x 30	100 x 30
A460	50 x 15	38 x 10

Sample rate* [MP]	minimum	maximum	
A1066 H	---***	120	(> 8K)**
A1066 S	---***	30	(HDTV - 8K)**
A460 H	---***	40	(HDTV - 8K)**

Density / Refection values	Individually measured values are provided in a separate Acceptance Protocol. Production tolerance is ± 0.03 OD.

Dead Leaves/Noise patches

Type/s of pattern	2 Dead Leaves, according to the approach from 2016 • One sub-chart low contrast • One sub-chart high contrast
Modulation	High contrast Low contrast

Size of sub-chart	4:3 [mm]	16:9 [mm]
A1066 S	109 x 109	109 x 109
A1066 H	110 x 110	105 x 105
A460 H	51 x 51	42 x 42

Sample rate* [MP]	minimum	maximum	
A1066 H	2****	120	(> 8K)**
A1066 S	2****	30	(HDTV - 8K)**
A460 H	2****	40	(HDTV - 8K)**

Color patches

Type/s of pattern	96 patches (similar but not identical to the X-Rite ColorChecker SG) • 12 gray steps • RGBCMY • 12 skin tones • 10 pastel colors • 56 mixed colors
Color values	Individually measured values are provided in a separate Acceptance Protocol.

Distortion grid

Type/s of pattern	10 black and white registration marks distributed on the top and bottom of the chart

Shading

Type/s of pattern	Neutral, uniform gray background measured at 24 positions

Visual appraisal, digitalization process

Type/s of pattern	Faces, grass, stones

General description hardware

Type	Reflective
Aspect ratio	4:3 or 16:9
Chart size tolerances	+/- 2 mm as they are handmade in-house and depend on the edge protection type
Chart size [W x H x D]	A1066 4:3: W [mm] 1245, H [mm] 835, D [mm] 3.2 A1066 16:9: W [mm] 1400, H [mm] 835, D [mm] 3.2 A460: W [mm] 600, H [mm] 500, D [mm] 3.2
Picture size	4:3: A1066 W [mm] 900, H [mm] 675; A460 W [mm] 460, H [mm] 345 16:9: A1066 W [mm] 1200, H [mm] 675; A460 W [mm] 460, H [mm] 258.75
Material	S version background, Siemens stars, slanted edges: matt print H version background, Siemens stars, slanted edges, Dead Leaves: photographic paper with matt finishing. All versions OECF, colors, faces, grass + stones: glossy print A1066 is made from three parts, which can differ in gray value with a tolerance of ± 0.03 OD.
Mounting	Aluminum composite panel (aluminum Dibond), size A1066 Aluminum, size A460
Edge protection	A1066 – No A460 – Fabric tape
Service life	2 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, stable cardboard envelope (A460 charts)

Miscellaneous

Evaluation/Assessment	Supported by iQ-Analyzer, visual appraisal is possible
Reference data iQ-Analyzer-X	An individual reference file is provided
Measurement device	X-Rite eXact https://www.image-engineering.de/content/products/charts/IE_reference_data_accuracy.pdf
Accessories	Chart case A460, A1066
Related Products	iQ-Chartmount, LED-Panel, iQ-Near Focus, iQ-Flatlight, VCX
Terms & Conditions	image-engineering.de/terms-and-conditions

* If the chart fills the image height, the chart can be used with a camera of a minimum/maximum sample rate, stated in megapixels (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

**** ROI should be reproduced by at least 128 by 128 pixels, with a lower limit based on this requirement