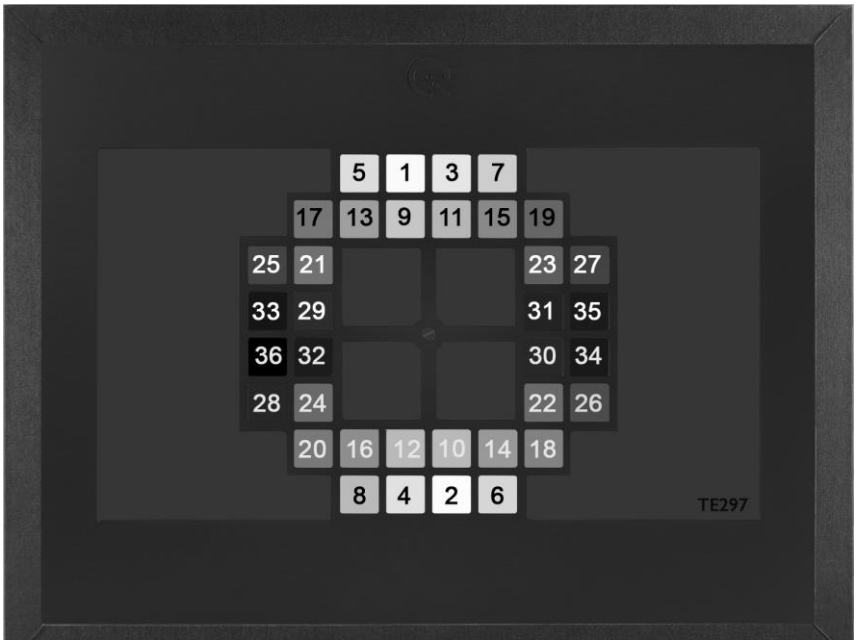

Overview

Product name	TE297 D
Principle	Transparent grayscale test chart to determine the OECF, noise, SNR, and dynamic range. It is optimized for digital high-dynamic range cameras. The patches were reordered to minimize reflections, often generated from the bright patches, for more accurate HDR measurements, recommended for cameras without heavy local tone mapping.

Features

OECF

Type/s of pattern	Grayscale, circularly arranged (most optical systems are rotationally symmetric, so all patches will be affected in the same way by shading)
Contrast	5,000,000:1 / 134 dB / 22 f-stops
Size of OECF patch	16 x 16 mm metal frame dimension
Quality	Standard version with screening method X-version* on special request
Number of steps	36
Arrangement of steps	According to IEC 62676-5 standard, based on TE269C, alternative patch arrangement
Values that can be gathered from the analysis	• OECF / gamma curve • Dynamic range • Noise • Temporal noise • Visual noise • SNR • ISO speed of the camera

General description hardware

Type	Transmissive (D)
Aspect ratio	16:9 (can be used for other aspect ratios without restrictions)
Chart size tolerances	+/- 2 mm as they are handmade in-house and depend on edge protection type
Chart size [W x H x D]	W [mm] / H [mm] / D [mm] D280: 360 / 280 / 4.6 / 9.2 (screw area)
Picture size	16:9 W [mm] / H [mm] D280: 280 / 157.5
Material	Photographic film
Surface finish	The film patches of transparent charts may show scratches. These scratches do not affect the test chart's function in any way, as the scratches are not visible under standard illumination geometry. We also recommend recording the OECF chart slightly out of focus to obtain a stable average value in the result.
Mounting	Black anodized aluminum metal frames
Edge protection	Fabric tape
Chart size tolerances	Up to +/- 2 mm as they are handmade in-house and fabric tape is used
Service life	Photographic film 3 years
Storage	Dark, dry, and free from harmful gas (e.g., formaldehyde or ozone). 20 °C and 25 °C with a humidity of 60% – 65% and no direct sunlight at any time.
Scope of delivery	Test chart, stable cardboard envelope to store the chart, air blower

Miscellaneous

Evaluation / Assessment	Supported by iQ-Analyzer-X since version 1.11.0
Reference data iQ-Analyzer-X	Individual reference file provided
Measurement device	X-Rite 361T (transparent charts) https://www.image-engineering.de/content/products/charts/IE_reference_data_accuracy.pdf
Standards	IEC 62676-5 Video surveillance systems for use in security applications – Part 5: Data specifications and image quality performance for camera devices. This chart is adapted to the postulated requirements. (TE269C V2 only; standard not yet published)
Accessories	PCR Krochmann Radiolux 111: luminance meter (tele-luminance meters can only be used with a mask covering the whole chart except the measured patch).
Terms & Conditions	image-engineering.de/terms-and-conditions

* The gray level in most transparent charts is produced by screening, showing high-frequency content. The resolution of today's cameras can be high enough to resolve this high-frequency content. If the screening is resolved, it is interpreted as noise, which fools the measurement of noise and/or dynamic range. Possible solutions can be to defocus the charts or to increase the camera to chart distance. If this does not help, the affected patches are produced individually with a highly increased production effort by a unique manufacturing and mounting process. The background is still screened and can show aliasing / false noise, but the important patches are not screened and can still be used for the measurement. Please ask our team for the X-version.