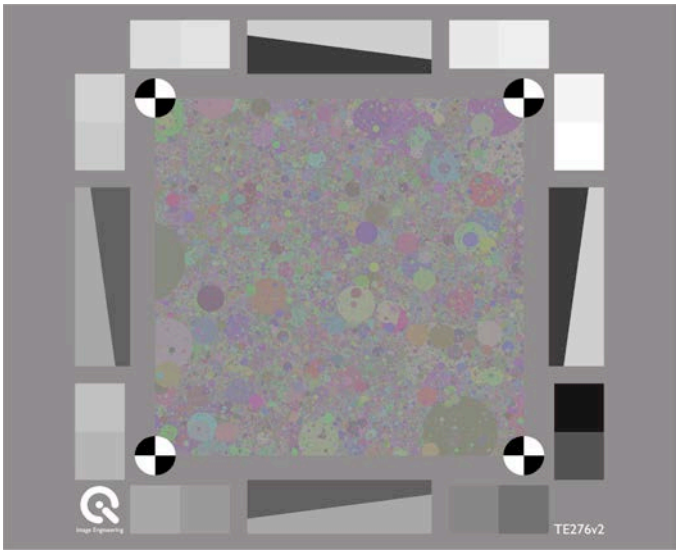
CERTIFICATE

DEAD LEAVES TARGET – COLORED

REFLECTIVE



The TE276 V2 Dead Leaves Target is used for the analysis of 'texture loss', which is the loss of low contrast, fine details in images due to noise reduction or other image processing techniques.

The TE276 V2 consists of five items:

- **Background**
  All following items are placed on a neutral gray background with a gray level of 18%.

- **Registration marks**
  Four registration marks are placed on the test chart, one in each corner. These marks are used for the automatic registration in analysis software, e.g. the Image Engineering iQ-Analyzer.

- **Gray patches**
  The chart contains 16 gray patches. The reflection of these patches is linear spaced between the brightest patch and the darkest patch.

- **Dead Leaves Pattern**
  The main item is the so called Dead Leaves pattern. This pattern consists of circles stacked on top of each other with a known probability distribution of position, radius and digital value of channel R, G and B. The contrast is limited to 20% of the maximum achievable contrast.

- **Slanted edges**
  Four slanted edges with different, reduced modulation are arranged around the Dead Leaves pattern. Two of them in vertical orientation and the other two in horizontal orientation.

For the software based analysis of images, captured of the TE276 V2, you can use the Image Engineering iQ-Analyzer Version 6 and newer. This software will provide the Spatial Frequency Response (SFR) measured on this target.

Recommended usage:

We recommend to reproduce the chart with the device under test in that way, that the chart fills not more than 1/3 of the image height.
In case this chart fills 1/3 of the image height it can be used for cameras with a sampling rate of up to 30 Megapixels.

The analysis procedure behind this test chart is described in this paper:

“Description of texture loss using the dead leaves target: current issues and a new intrinsic approach”, Kirk, Herzer, Artmann, Kunz, Proc. SPIE 9023, Digital Photography X, 90230C (7 March 2014); doi: 10.1117/12.2039689

The Dead Leaves pattern and its properties are described in this paper:

"Occlusion Models for Natural Images: A Statistical Study of a Scale-Invariant Dead Leaves Model"
by Ann Lee, David Mumford, and Jinggang Huang , International Journal of Computer Vision 41(1/2), 35-59, 2001