**Task 3 – Comparison of visually perceived color difference V and measured color difference E\***

**Aim: Comparison of visually perceived color difference DV and measured color**

**difference DE\***

1. In the first part of the task, determine the degree of gray scale between the samples (batch) and the standard that expresses the visually perceived color difference by using pairwise comparison to evaluate (assess) the change in color difference between them. The gray scale is based on the standard ISO 105:A02. For visual assessment, use the simulator of D65.
2. Using Table A, which you were given in the lecture, convert the obtained degree from gray scale to DE\*.
3. Values should be given with an interval (difference +/–).
4. In the second part, use a spectrophotometer (de:8°), measure all samples and the standard and note the color difference between the samples and standard.
5. Compare your visual assessment with the measured color difference and evaluate it verbally. Consider also the interval (difference).
6. In the third part, find among your samples two that have the smallest color difference.
7. Label or describe verbally the samples with the smallest color difference at the conclusion.
8. Prepare a protocol. **At the end of the protocol, answer the questions below and comment verbally on the results from the visual assessment and objective measurement.**

In the log header, please include the title of the task, your name, the time and day of the practical, your field of study, and the year of study. In the prepared protocol, please indicate the laboratory conditions under which the assessment and measurements were carried out, as well as the instrumentation and tools used in the processing of the task.

In the protocols, follow standard text layout (block alignment, font size for main text 12 and headings 14 with bold).

**Laboratory conditions:** 22,1 °C, 33% relative humidity

**Instruments: group 1 –** lighting box AT color technik and spectrophotometer Datacolor Spectraflash 450 with de:8° and 30 mm aperture

**group 2 –** lighting box ICS-Texicon and spectrophotometer Datacolor Spectraflash 600 PLUS-CT with de:8° and 30 mm aperture

**Tools:** textile samples

**Question:**

1. **Which three basic attributes can be used to describe the color?**
2. **Which parameters of the spectrophotometer are included in the measurement report?**

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| **Samples** | **Visual assessment** | **Measurement** | **Comparison between ΔV and ΔE\***  |
| **Gray scale** | **ΔV** | **ΔV**$\pm $**interva** | **ΔE\*** |
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