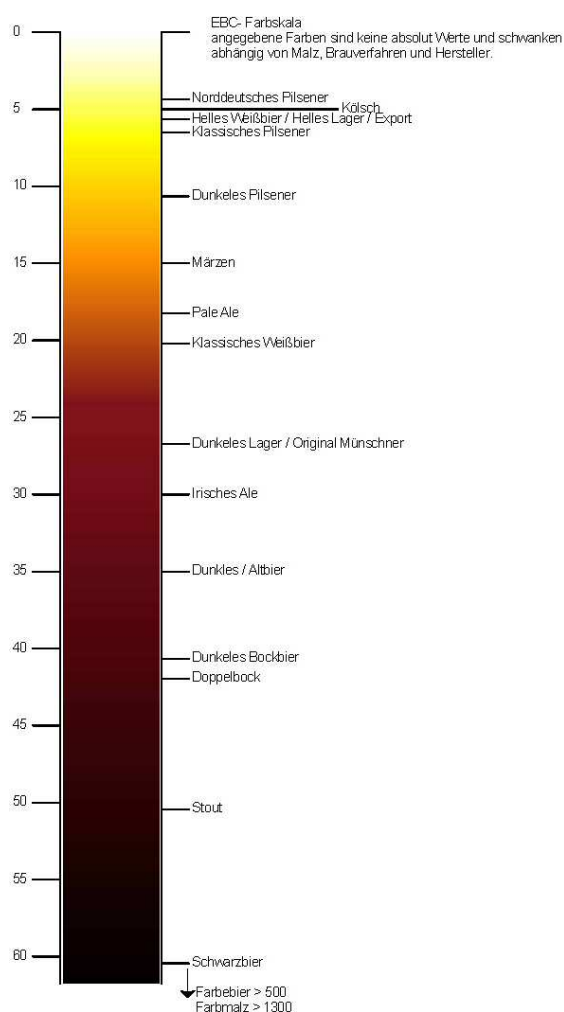


EBC- Colour Measurement

Application:	Colour of Beer
Principle of measurement:	Single beam dual channel absorption
Measurement range:	Typical 0 – 15 EBC (pale beer) 0 – 35 EBC (dark beer) 0 – ... EBC (specialty beer)

EBC- Colour Scale



* Values measured with Galvanic colour measurement system model MoniSpec-AD / Messenger.

Description:

The Colour of beer is an important Parameter at the quality control of Beer during the brew process. To measure EBC colour, the light absorption is detected at 430nm (MEBAK 2.16.2 respectively EBC 9.4).

The beer / wort samples will be filtered to get a turbidity of less than 1 EBC during the laboratory procedure of EBC colour measurement. Then the absorption will be measured in a 10mm cuvette. The sample will be diluted until the absorption is less than 2 Extinction units (E_{430}).

EBC colour = $E_{430} \times 25 \times \text{dilution factor}$.

The real time inline measurement of EBC colour does not allow the filtration or dilution of the product stream. Therefore the absorption caused by turbidity is measured additionally at a wave length of 700nm.

Calculation of measurement results in 10mm cuvette:

EBC colour = $(E_{430} \times 25) - (E_{700} \times 25)$.

The additional absorption caused by particles will be subtracted to compensate the turbidity effect.

To measure the EBC colour at very dark beers (< 35 EBC) more accurate, it is recommended to shift the measurement wavelength to a value of 550nm. This will cause (like at the dilution) lower absorption Values. A correlation (f) factor has to be used because of the lower absorption of the beer at this wavelength.

EBC colour = $[(E_{550} \times 25) - (E_{700} \times 25)] \times f$.

The turbidity values should be always as low as possible, because high turbidity values can still affect the measurement results.

The probe has to be specified according to the requested range to guarantee good measurement result. To cover a wide range of e.g. 10 EBC (colour) and 100 EBC (colour) by using the same probe configuration will provide inaccuracies at the high or low end of the range.