



# Colour Grading according to the EBC Colour Scale

## Lovibond EBC Comparator 3000, AF 607



### EBC Colour Scale

The EBC colour scale, developed by the Institute of Brewing and the European Brewing Convention, is a recognised method for colour grading of beers, malts and caramel solutions as well as similarly coloured liquids. It has a range of 2 to 27 visual units, yellower pale worts and lagers at the low end of the scale and the redder colour of dark worts, beers and caramels at the upper end of the scale. If the sample falls outside this range (eg concentrates, syrups) then sample dilution and a different path length cell can be used to bring the reading within the EBC range.

### Lovibond EBC Comparator 3000 AF 607

The Lovibond EBC Comparator 3000 is a 3-field instrument for visually determining the EBC Colour of samples by direct comparison with coloured glass standards. The EBC colour standards that cover the range 2 -10 in steps of 0.5 EBC and 10 - 27 in steps of 1 EBC are arranged in two pairs of discs as follows. The comparator is designed so that the pairs of discs can be easily changed over.

Lovibond Disc Code	EBC Colour Standards
EBC/1	2, 3, 4, 5, 6, 7, 8, 9, 10
EBC/2	2.5, 3.5, 4.5, 5.5, 6.5, 7.5, 8.5, 9.5, 11
EBC/3	10, 12, 14, 16, 18, 20, 22, 24, 26
EBC/4	11, 13, 15, 17, 19, 21, 23, 25, 27

With a 3-section field of view, the sample and two adjacent standards on the EBC Colour scale are viewed simultaneously, making it easier to achieve the optimum colour match. For rapid colour grading within predetermined colour limits, the glass standards can be set to the two limiting colours, making it easy to see if the sample is within tolerance. The tungsten halogen light source is colour corrected to CIE standard illuminant B, which guarantees constant lighting conditions for EBC colour grading, day or night, whatever the ambient lighting.

### Principle of Operation

Sample dilution and the cell path length (5 - 40 mm depending on their saturation) are chosen to bring the reading within the standard EBC range. The cell is placed in the sample chamber and the sample is viewed through a prism that brings the sample and the colour standards into adjoining fields of view. Using the relevant pair of discs, turn the control knobs on the front of the comparator until the colour of the sample falls between two standards, or until it exactly matches one of the standards. The reading is then taken from the scale on the control knobs. However EBC Colour is always reported as if it were undiluted and measured in a 25 mm path length cell using the following equation:

$$\text{EBC Colour} = \text{Reading} \times \text{dilution factor} \times 25/\text{path length in mm}$$

### Technical Specification

Measuring principle	Visual comparison with coloured glass standards
Mode	Transmittance Viewing system Prismatic with integral blue filter for light standardisation
Light source	Tungsten halogen lamp, 12 Volt, 20 Watt
Illuminant	B
Power pack	12 Volt ac, switchable to suit 220/110 Volt supply
Approvals	CE
Instrument housing	Fabricated mild steel
Dimensions	Width 235 mm, depth 245 mm, height 90 mm
Weight	4.9 kg

The Lovibond EBC Comparator 3000 is supplied with a single W680 fused optical glass cell of 25 mm path length.

### Accessories

Certificate of Conformity	
W680/OG/5 fused cell (Order Code 60 67 90)	W680/OG/10 fused cell (Order Code 60 68 10)
W680/OG/15 fused cell (Order Code 60 68 40)	W680/OG/20 fused cell (Order Code 60 68 50)
W680/OG/25 fused cell (Order Code 60 68 60)	W680/OG/40 fused cell (Order Code 60 69 40)
Tungsten halogen lamp, 12 Volt, 20 Watt (Order Code 12 23 40)	

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