

Information about gloss measurement

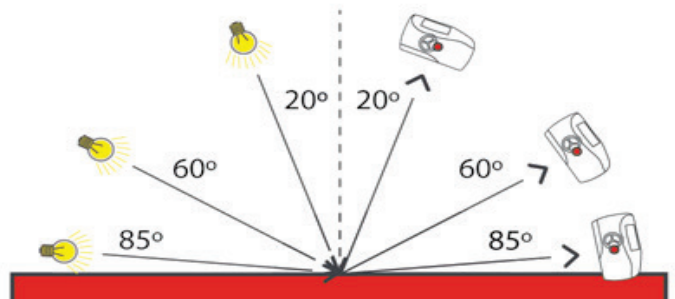
One optical property of a coated or polished surface is the gloss. This occurs when light directed onto a surface is reflected. Paints and varnishes are measured by gloss units (GU). The gloss measurement is made in at least three areas of a test object. The maximum or minimum (5) GU should not be exceeded; otherwise it is necessary to measure at two other locations in addition. The measurement results are calculated as the average of the individual measurements and are reported in gloss units (GU).

Areas of application

Car paints and coatings (Car refinishing), plastics as well as manufacturing industry (General Industry).

Measurement geometry:

20° High gloss / 60° Semi gloss / 85° Matt gloss
 This gloss measurement meets the standards of ASTM D 523, ASTM D 2457, BS 3900, DIN EN ISO 2813 and DIN 67530.



Measuring a matt surface: measure an area or part 3 times. The limit for the difference between the lowest and the highest value in the 3 measurements is 5. Example: 1st measurement 24.1, 2nd measurement 27.4, 3rd measurement 25.7. The lowest is 24.1 and the highest is 27.4. The difference is 3.3, which is below 5. Next, take the average: $24.1 + 27.4 + 25.7 = 77.2 / 3 = \underline{25.7}$ → this is the gloss level = 25.7 GU.

If the 1st measurement is 24.1, – the 2nd 30.2, and the 3rd is 28.4, the difference between the lowest and highest values is $24.1 - 30.2 = 6.1$. This is outside the tolerance of 5 (GU), so two more measurements are required on that part/object - 4th measurement 29.4, 5th measurement 27.4: the average is then $24.1 + 30.2 + 28.4 + 29.4 + 27.4 = 139.5 / 5 = \underline{27.9}$ GU

Professional practice:

If the result were 54 GU/60°, that would be the correct measurement geometry. If the values are above 70 GU it will be necessary to choose the 20° measurement angle. If the values received are below 10 GU it will be necessary to select the 85° measurement angle.

Selection geometry	GU	Degree of gloss (Notation)
High-gloss 20°	100	100-70 GU downwards from high-gloss to glossy surfaces
	90	
	80	
	70	
Semi-gloss 60°	60	70-10 GU downwards from glossy – semi-gloss - to matt surfaces
	50	
	40	
	30	
	20	
Low-gloss 85°	10	10-0 GU matt to dull-matt surfaces
	0	

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