

## Price list photometric laboratory

### Measurement services at DIAL

#### Express Service

Receive the results within 48 hours, provided it is technically possible.  
We charge an additional mark-on of 100 %.

All prices exclusive 19% VAT.

A Integrating measurements by sphere multimeter			
	<ul style="list-style-type: none"> <li>– Measurement of photo- and colorimetric data according to EN 13032-4 or LM-79-08</li> <li>– Measurement of signal shape for modulation and Flicker Index according to IEEE 1789</li> <li>– Measurement of any lightsource</li> <li>– Uncertainty of measurement (with <math>k = 2</math>) max. <math>\pm 5,0</math> %</li> </ul>		
A1	<b>Measurement of the luminous flux, the spectral distribution and the signal shape</b>	305.00 €	<b>A</b>
A2	<b>Measurement of three identical lightsources according to ANSI/Plato FL 1-2016 (e.g. torch, headlamp)</b>	3,825.00 €	<b>A</b>
A3	<b>Measurement of degradation of the luminous flux at a customer-specific temperature up to 100°C</b>	455.00 €	<b>A</b>
B Angle depending measurements by goniometer with rotating mirror			
	<ul style="list-style-type: none"> <li>– Measurement of photo- and colorimetric data according to EN 13032-4 or LM-79-08</li> <li>– Measurement of signal shape for modulation and Flicker Index according to IEEE 1789</li> <li>– Presentation of results in a detailed measurement report and as LDT or IES file</li> <li>– Measurement uncertainty (with <math>k = 2</math>) max. <math>\pm 5,0</math> %</li> </ul>		
B1	<b>Direct OR indirect luminaire</b> Absolute measurement of the light distribution body of one hemisphere up to $\gamma = 90^\circ$ as well as spectral distribution and signal shape below the angle of maximum luminous intensity	509.00 €	<b>A</b>
B2	<b>Direct AND indirect luminaire</b> Absolute measurement of the light distribution body of both hemispheres up to $\gamma = 180^\circ$ as well as spectral distribution and signal shape below the angle of maximum luminous intensity	755.00 €	<b>A</b>
B3	<b>Measurement and evaluation of a traffic control signal (in road traffic) with a luminous field diameter of 200 mm or 300 mm in accordance with DIN EN 12368:2015-09</b>	2,835.00 €	

<b>B4</b>	<b>Color- and photometrical measurement of a signal and evaluation of the results</b> in accordance with the ICAO Annex 14 Volume 1, 9. Edition Juli 2022, Appendix 1 und 2.	<b>2,365.00 €</b>	
<b>BZ3</b>	<b>Additional charge for MINERGIE® measurement</b> This position requires a B1 or B2 measurement	<b>+ 175.00 €</b>	<b>A</b>
<b>BZ5</b>	<b>Additional charge for the measurement of the temperature with a type K element on a customer-specified discreet spot</b> This position requires a B1 or B2 measurement	<b>+ 465.00 €</b>	<b>A</b>
<b>BZ7</b>	<b>Additional charge for the measurement of the gonio-colorimetric spectral distribution of a light source</b> This position requires a B1 or B2 measurement	<b>+ 225.00 €</b>	<b>A</b>
<b>BZ8</b>	<b>Measurement of the spectral distribution of a light fixture and evaluation of the blue light hazard according to DIN IEC/TR 62778 Annex C</b> This position requires a B1 or B2 measurement	<b>+ 335.00 €</b>	<b>A</b>
<b>BZ9</b>	<b>Additional determination of the required data of a light source for the entry into the EPREL database according to the EU Regulation 2019/2020</b> This position requires a B1 measurement	<b>+ 240.00 €</b>	

## C Luminance and emergency signs

- Space-resolved or point-resolved measurements of the absolute luminance
- Measurements according to DIN EN 1838, ISO 3864-1 and DIN 4844-1 by request

<b>C1</b>	<b>Measurement of the absolute luminance [cd/m<sup>2</sup>] with image resolution camera</b> Presentation of the results as false colour image with legend	<b>345.00 €</b>	
<b>C2</b>	<b>Measurement of the absolute luminance [cd/m<sup>2</sup>]</b> on up to ten discreet spots	<b>425.00 €</b>	<b>A</b>
<b>C3</b>	<b>Measurement of the absolute luminance [cd/m<sup>2</sup>]</b> in accordance with DIN EN 1838 and the chromaticity coordinates in the CIE (1931) colour space on the surface of an emergency sign	<b>639.00 €</b>	<b>A</b>

## D Reflectance ( $\rho$ ) and transmittance ( $\tau$ )

- Measurement according to CIE 38 and DIN 5036-3
- Measurement with normtype Light A or D65

<b>D1</b>	<b>Determination of the total and scattered degree of reflectance (<math>\rho</math>) or transmittance (<math>\tau</math>) for one sample (min. dimensions of sample 10x10 cm) with an angle of incidence below 8°</b>	<b>715.00 €</b>	<b>A</b>
<b>DF1</b>	<b>Determination of the reflectance or transmittance for an additional sample below 8° or additional angles using the same sample</b> This position requires a D1 measurement	<b>369.00 €</b>	<b>A</b>

<b>E, G, T Further services and measurements</b>		
<b>E1</b>	<b>Derivation from an original measurement</b>	<b>145.00 €</b>
<b>G2</b>	<b>Evaluation of a customer-specified street geometry according to EN 13201-3 with a light distribution measured in the DIAL photometric laboratory</b>	<b>1,525.00 €</b>
<b>GZ1</b>	<b>Subsequent evaluation to G2</b> Additional light distribution measured in the DIAL photometric laboratory with the same street geometry	<b>705.00 €</b>
<b>T</b>	<b>Temperature measurement with type K elements at up to three specified discrete points</b> Recording of the temperature curve during the stabilisation process incl. holding of the measuring object	<b>595.00 €</b>
<b>P, H Order processing and additional services</b>		
<b>P1</b>	<b>Order processing fee</b> Once per order	<b>279.00 €</b>
<b>H2</b>	<b>Photometrically, mechanically and thermally standard-compliant mounting, as well as electrically correct connection of a measurement object</b> for the positions A1 and B1	<b>275.00 €</b>
<b>H3</b>	<b>Photometrically, mechanically and thermally standard-compliant mounting, as well as electrically correct connection of a measurement object</b> for position B2	<b>415.00 €</b>
<b>H4</b>	<b>Photometrically, mechanically and thermally standard-compliant mounting, as well as electrically correct connection of a measurement object</b> for the positions C1, C2 or C3	<b>415.00 €</b>