



SCOPE OF ACCREDITATION TO ISO 17025:2005

X-RITE - MUNICH, GERMANY  
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CALIBRATION

Valid To: December 31, 2019

Certificate Number: 2108.05

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1</sup>:

I. Optical Quantities

Parameter/Equipment <sup>5</sup>	Range	CMC <sup>2,4</sup> (±)	Comments <sup>6</sup>
Spectrophotometers –			White reflection standards with:
Model 962, 964, 939 (0/45 Optical Geometry)	(400 to 420) nm (430 to 700) nm	2.0 %R 0.70 %R	SPP X-it 962
Model SP6x (Sphere 0/8° Optical Geometry)	(400 to 410) nm (420 to 700) nm	0.89 %R 0.65 %R	SPP X-it SP
Model CI60, CI61, CI62, CI64, CI64 UV, CI4xxx	400 nm (410 to 700) nm	0.99 %R 0.45 %R	SPP CI6x
Model CI7xxx <sup>3</sup>	(360 to 400) nm (410 to 750) nm	1.0 %R 0.42 %R	Tile set
Model 504, 508, 518, 528, 530 (0/45 Optical Geometry)	400 nm (410 to 700) nm	1.9 %R 0.65 %R	SPP X-it 500
Model Exact (0/45 Optical Geometry)	400 nm (410 to 700) nm	2.0 %R 0.55 %R	SPP exact

Parameter/Equipment <sup>5</sup>	Range	CMC <sup>2,4</sup> ( $\pm$ )	Comments <sup>6</sup>
Spectrophotometers – (cont)			White reflection standards with:
Model 7000A <sup>3</sup> (Sphere 0/8° Optical Geometry)	(360 to 390) nm (400 to 740) nm	0.85 %R 0.41 %R	SPP CtestXP
Model Ci5/Ci7 <sup>3</sup> (Sphere 0/8° Optical Geometry)	(360 to 390) nm (400 to 740) nm	0.88 %R 0.49 %R	SPP CtestXP
Model MA68II (Aspecular Optical Geometry)			
15 degree	(400 to 440) nm (450 to 700) nm	0.94 %R 0.64 %R	SPP X-it MA62
25 degree	(400 to 440) nm (450 to 700) nm	0.89 %R 0.66 %R	
45 degree	(400 to 440) nm (450 to 700) nm	0.85 %R 0.64 %R	
75 degree	(400 to 440) nm (450 to 700) nm	0.85 %R 0.62 %R	
110 degree	(400 to 440) nm (450 to 700) nm	0.96 %R 0.75 %R	
Model MA9X (Aspecular Optical Geometry)			
-15 degree	(400) nm (410 to 700) nm	0.89 %R 0.68 %R	SPP final 2 MA9x
15 degree	(400 to 410) nm (420 to 700) nm	0.79 %R 0.53 %R	
25 degree	(400) nm (410 to 700) nm	0.79 %R 0.44 %R	
45 degree	(400) nm (410 to 700) nm	0.81 %R 0.45 %R	

Parameter/Equipment <sup>5</sup>	Range	CMC <sup>2,4</sup> ( $\pm$ )	Comments <sup>6</sup>
Spectrophotometers – (cont)			White reflection standards with:
75 degree	(400) nm (410 to 700) nm	0.77 %R 0.42 %R	SPP final 2 MA9x
110 degree	(400) nm (410 to 700) nm	0.89 %R 0.61 %R	
Optical Radiation <sup>3</sup> (Lightbooth)	2300 K (Horizon) 2856 K (Illuminate A)	20 K 22 K	X-Rite LightSpex radiometer

<sup>1</sup> This laboratory offers commercial calibration service and field calibration services.

<sup>2</sup> Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of  $k = 2$ . The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

<sup>3</sup> Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

<sup>4</sup> In the statement of CMC,  $R$  is the reflectance.

<sup>5</sup> The product families have the same optical geometries and calibration procedures. The features on the display and outputs are the only differences.

<sup>6</sup> White reflection standards apply to the calibration of approximately 80 % reflectance on a neutral white ceramic. Color calibration is mainly based on inter-instrument agreement.



## *Accredited Laboratory*

A2LA has accredited

### **X-RITE - MUNICH, GERMANY**

*Martinsried, GERMANY*

for technical competence in the field of

## Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system *(refer to joint ISO-ILAC-IAF Communiqué dated April 2017)*.



Presented this 10<sup>th</sup> day of September 2018.

A handwritten signature in black ink, written over a horizontal line.

President and CEO  
For the Accreditation Council  
Certificate Number 2108.05  
Valid to December 31, 2019

*For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.*