

**Specification of Competency Standards**  
**for the Testing, Inspection and Certification Industry**  
**Unit of Competency**

Functional Area - Testing Operations

Title	Perform photometric measurements
Code	105828L4
Range	This unit of competency (UoC) covers the abilities to carry out photometric measurements on electrical and electronic products independently by applying photometric knowledge and record accurate test data in testing laboratories.
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of photometric measurements</p> <ul style="list-style-type: none"> <li>• Describe the photometric properties of electrical and electronic products, e.g. luminous flux, luminous intensity, correlated colour temperature, colour rendering index, lumen maintenance, lamp life, lumen values, standard deviation of colour matching, chromatic shift, light generation mechanism from various light sources.</li> <li>• Differentiate luminance and illuminance measurements.</li> <li>• Employ the principles of measuring photometric properties of selected electrical and electronic products.</li> <li>• Specify the requirements of measuring photometric properties of selected electrical and electronic products in relevant categories of standards, e.g.: <ul style="list-style-type: none"> <li>○ basic/generic standards, product family standards,</li> <li>○ international, national and industrial standards such as IEC, EN, GB, BS, UL, MS, SS, AS/NZS.</li> </ul> </li> <li>• Describe the principles and operation of optical measuring instruments used for photometric measurements, e.g.: <ul style="list-style-type: none"> <li>○ integrating sphere photometer,</li> <li>○ box photometer,</li> <li>○ goniophotometer,</li> <li>○ illuminance meter.</li> </ul> </li> <li>• Apply the concepts of uncertainty and instrument calibration to the photometric measurements.</li> </ul> <p>2. Perform photometric measurements</p> <ul style="list-style-type: none"> <li>• Select appropriate test methods/standards and test conditions for photometric measurements.</li> <li>• Apply appropriate optical instruments for photometric measurements.</li> <li>• Apply appropriate test conditions to the sample under test, e.g. ageing, mounting height, measurement axis and attitude.</li> <li>• Carry out photometric measurements on the test sample independently according to the test methods/standards.</li> <li>• Carry out required validation checks to confirm the system and instrumental requirements are met.</li> <li>• Record accurate measurement data and conclude test results to confirm the compliance of the test sample.</li> </ul> <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> <li>• Ensure all measurements are carried out in compliance with good industry practices and relevant international standards.</li> <li>• Ensure appropriate measures are taken to minimise the health and safety risks of photobiological hazards due to the blue light, UV and infrared radiations associated with photometric measurements.</li> </ul>

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	<ul style="list-style-type: none"><li>• Ensure integrity and confidentiality of laboratory data and information by observing the code of conduct as required by the standards and the organisation.</li></ul>
Assessment Criteria	<p>The integrated outcome requirements of this UoC are the abilities to:</p> <ul style="list-style-type: none"><li>• carry out photometric measurements on selected electrical and electronic product independently by applying appropriate optical instruments and test conditions according to the requirements of relevant test methods/standards,</li><li>• record accurate and reliable measurement data by data validation and verifying instrument calibration status,</li><li>• conclude test results to confirm the compliance of photometric properties of the product against the relevant specifications of test methods/standards.</li></ul>
Remark	