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

Functional Area - Testing Operations

Title	Perform radiation tests
Code	105824L4
Range	This unit of competency (UoC) cover the abilities to carry out radiation tests on electrical and electronic products independently, record accurate test data and evaluate the radiation hazards of the products in testing laboratories.
Level	4
Credit	6 （For Reference Only）
Competency	Performance Requirements 1. Possess knowledge of radiation hazards • Identify and differentiate various types of radiation, e.g.: o ionisation, o ultraviolet (UV) including UVA, UVB, UVC, o classification of laser and laser products, maximum accessible emission for each class of laser products, o irradiance and radiance. • Identify the potential radiation hazards of selected electrical and electronic products, e.g.: o audio, video and similar electronic apparatus, o information technology equipment, o luminaires. • Employ the principles of measuring different types of radiation. • Specify the requirements of evaluating radiation hazards of selected electrical and electronic products in relevant categories of standards, e.g.: o basic/generic standards, product family standards, o international and national standards such as IEC, EN, GB, BS, UL, MS, SS, AS/NZS. • Specify the regulatory requirements of radiation hazards of electrical and electronic products in selected countries or regions, e.g. China, EU. • Describe the principles and operation of instruments used for the radiation tests. • Apply the concepts of uncertainty and instrument calibration to the radiation tests. 2. Perform radiation tests • Select appropriate test methods/standards, test conditions and accessories for radiation tests. • Apply appropriate testing instruments for the radiation measurements, e.g.: o Geiger counter for measuring ionisation radiation, o scanning spectrograph. • Carry out radiation measurements on the test sample independently by applying appropriate test conditions, procedures and operation mode, e.g.: o ionisation radiation: normal operating and fault conditions, o laser radiation: exposure time, accessible emission levels including start-up, stabilised emission and shut-down of the laser product, accessories that may increase the radiation hazard (e.g. collimating optics), operation mode (continuous or pulse), o UV radiation: UV protection shield inspection, inspection on marking and labelling of UV radiation on the product, maximum exposure time per day, spectral irradiance or specific effective radiant UV power, maximum illuminance. • Carry out required validation checks to confirm the system and instrumental requirements are met.

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	• Record accurate test data and observations and conclude test results to confirm the compliance of the test sample. 3. Exhibit professionalism • Ensure all measurements are carried out in compliance with good industry practices and relevant international standards. • Ensure appropriate measures have been taken to minimise the health and safety risks of radiation hazards during the measurements. • Ensure integrity and confidentiality of laboratory data and information by observing the code of conduct as required by the standards, regulations and the organisation.
Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to: • carry out radiation tests on selected electrical and electronic product independently by applying testing instruments with appropriate test conditions and operation mode according to the requirements of relevant test methods/standards, • record accurate and reliable test data by data validation and verifying instrument calibration status, • conclude test results to confirm the compliance of radiation hazards of the product against the relevant specifications of test methods/standards.
Remark	