

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

Functional Area - Testing Operations

Title	Evaluate energy efficiency of electrical and electronic products
Code	105823L4
Range	This unit of competency (UoC) covers the abilities to carry out energy and power consumption measurements on electrical and electronic products independently, record accurate measurement data and evaluate the energy efficiency of the products in testing laboratories.
Level	4
Credit	6 (For Reference Only)
Competency	<p>Performance Requirements</p> <p>1. Possess knowledge of energy efficiency</p> <ul style="list-style-type: none"> • Employ the principles of energy efficiency and minimum energy performance standards (MEPS) of selected electrical and electronic products, e.g.: <ul style="list-style-type: none"> ○ audio and video equipment, ○ horizontal drum type household washing machine, ○ lamps and light fittings, ○ household refrigerating appliances. • Employ the principles of evaluating the energy efficiency and performance of selected electrical and electronic products, e.g. energy and power consumption, power factor, crest factor and efficiency grading. • Identify energy labelling schemes/programmes and/or standards, e.g.: <ul style="list-style-type: none"> ○ The Hong Kong Voluntary Energy Efficiency Labelling Scheme, ○ Mandatory Energy Efficiency Labelling Scheme – Code of Practice on Energy Labelling of Products, ○ US EPA Energy Star Program, ○ EU ErPs 2009/125/EC. • Specify the requirements of energy efficiency for selected electrical and electronic products. • Describe the principles and operation of instruments used for evaluation of energy efficiency. • Apply the concepts of uncertainty and instrument calibration to energy efficiency measurements. <p>2. Perform energy and power consumption measurements</p> <ul style="list-style-type: none"> • Select appropriate test methods/standards and test conditions for measuring energy efficiency. • Apply appropriate testing instruments for the measurements. • Apply appropriate mode of operation, loading, duration and power to the sample under test. • Carry out energy and power consumption measurements on the test sample independently according to the test methods/standards. • Carry out required validation checks to confirm the system, facility and instrumental requirements are met. • Record accurate measurement data, configuration and conditions, and conclude the results to confirm the compliance of the test sample. <p>3. Exhibit professionalism</p> <ul style="list-style-type: none"> • Ensure all measurements are carried in compliance with good industry practices and relevant energy efficiency schemes or international standards. • Ensure integrity and confidentiality of laboratory data and information by observing the relevant code of conduct.

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Assessment Criteria	The integrated outcome requirements of this UoC are the abilities to: <ul style="list-style-type: none">• carry out energy and power consumption measurements on selected electrical and electronic product independently by applying appropriate instruments and testing conditions according to the requirements of relevant test methods/standards,• record accurate and reliable measurement data and configuration by data validation and verifying instrument calibration status,• conclude the results to confirm the compliance of energy grading and marking of the product against the specifications of relevant energy labelling schemes and/or standards.
Remark	