

Title	Apply knowledge of lighting installation, testing, repair, and disposal		
Level	3	Credits	5

Purpose	<p>This unit standard covers the application of electric lighting knowledge for electricians and related trades.</p> <p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> – demonstrate knowledge of lighting control circuits; – plan installation of lights to meet given specifications; – install, connect, and test luminaires, lights, and light control circuitry to meet given requirements; – demonstrate knowledge of fault-finding, repair, and re-commission an electric lighting system; and – demonstrate knowledge of lighting requirements for explosive atmospheres.
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Classification	Electrical Engineering > Electrical Installation and Maintenance
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Available grade	Achieved
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Explanatory notes

- 1 This unit standard has been developed for learning and assessment off-job or on-job.
- 2 This unit standard and unit standards 29419, 29422, 29472, and 29480 together meet the assessment requirements of ERAC EPC 41.
 This unit standard and unit standards 5926, 29422, 29471, 29475, and 29482 together meet the assessment requirements of ERAC EPC 51.
 This unit standard and unit standards 29422, 29472, and 29476 together meet the assessment requirements of ERAC EPC 53.
 This unit standard and unit standards 15848, 29420, 29421, 29422, 29443, 29444, 29483, and 29557 meet the assessment requirements of ERAC CEPC 54.
- 3 Definitions
CEPC – Critical Essential Performance Capability.
EPC – Essential Performance Capability.
ERAC – Electrical Regulatory Authorities Council.
EWRB – Electrical Workers Registration Board.
Industry practice – those practices that competent practitioners within the industry recognise as current industry best practice.
LED – light emitting diode.
Safe and sound practice – as it relates to the installation of electrical equipment is defined in AS/NZS 3000:2007, *Electrical Installations (known as the Australian/New Zealand Wiring Rules)*.

- 4 Range
- a Candidates may refer to current legislation and Standards during assessment.
 - b Demonstration of safe working practices and installation in accordance with *safe and sound practice* are essential components of assessment of this unit standard.
 - c All activities and evidence presented for all outcomes and evidence requirements in this unit standard must be in accordance with:
 - i legislation;
 - ii policies and procedures;
 - iii ethical codes;
 - iv Standards – may include but are not limited to those listed in Schedule 2 of the Electricity (Safety) Regulations 2010;
 - v applicable site, enterprise, and industry practice; and,
 - vi where appropriate, manufacturers' instructions, specifications, and data sheets.

Outcomes and evidence requirements

Outcome 1

Demonstrate knowledge of lighting control circuits.

Evidence requirements

- 1.1 With the aid of diagrams describe single, double, three-way and multi-way light switching.
- 1.2 With the aid of diagrams describe two lighting control methods.

Outcome 2

Plan installation of lights to meet given specifications.

Range one inside installation of 20 square meters and one outside installation of 20 square meters.

Evidence requirements

- 2.1 Outline the minimum requirements for the two different lighting installations.
- 2.2 Determine lighting requirements to meet specifications with consideration of the most suitable lighting arrangement for the application.
- Range colour temperature, lighting type, application, Lux levels, energy efficiency, health and safety aspects.
- 2.3 Produce a location diagram showing the numbers and positions of light fittings and switches.

Outcome 3

Install, connect, and test luminaires, lights, and light control circuitry to meet given requirements.

Evidence requirements

- 3.1 Install light circuit cabling.
- 3.2 Install all fittings, luminaires, lights, and switches.
- 3.3 Position and connect lights and light fittings in accordance with the location diagram.
- 3.4 Test light circuits and fittings for safety and check for conformity.
- 3.5 Explain the operation of the installed lighting system.

Outcome 4

Demonstrate knowledge of fault-finding, repair, and re-commission an electric lighting system.

Evidence requirements

- 4.1 Explain logical techniques to analyse symptoms and take measurements where necessary to locate the fault and identify faulty components.
- 4.2 From given information assess viability of repair in terms of component availability, cost and time of repair, and cost of replacement.

Outcome 5

Demonstrate knowledge of lighting requirements for explosive atmospheres.

Evidence requirements

- 5.1 Outline the competency requirements for working and certifying work in explosive atmospheres.
- 5.2 Outline possible consequences of using incorrect luminaires in gas, dust, and explosive vapour installations.

Replacement information	This unit standard and unit standard 29472 replaced unit standard 1710.
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Planned review date	31 December 2019
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	21 July 2016	N/A

Consent and Moderation Requirements (CMR) reference	0003
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Please note

Providers must be granted consent to assess against standards (accredited) by NZQA, before they can report credits from assessment against unit standards or deliver courses of study leading to that assessment.

Industry Training Organisations must be granted consent to assess against standards by NZQA before they can register credits from assessment against unit standards.

Providers and Industry Training Organisations, which have been granted consent and which are assessing against unit standards must engage with the moderation system that applies to those standards.

Requirements for consent to assess and an outline of the moderation system that applies to this standard are outlined in the Consent and Moderation Requirements (CMR). The CMR also includes useful information about special requirements for organisations wishing to develop education and training programmes, such as minimum qualifications for tutors and assessors, and special resource requirements.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.