



Australian Government

MEM10024 Install and troubleshoot luminaires and ancillary equipment

Release: 3

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Modification History

Release 3. Prerequisite units updated

Release 2. Minor adjustments to reflect ERAC requirements for electrician licensing and revision of Essential Performance Capabilities

Release 1. New unit

Application

This unit of competency has been developed for Engineering Tradesperson – industrial electrician apprenticeship training and the recognition of trade-level skills in installing and troubleshooting luminaires and ancillary equipment in accordance with the relevant standards.

It covers a basic understanding of the various types of faults, luminaires and the purpose components and ancillary equipment for operating voltages up to 1000 V alternating current (AC) or 1500 V direct current (DC) and related hazard and safety requirements.

This unit covers the skills and knowledge required to meet the Electrical Regulatory Authorities Council (ERAC).

Essential Performance Capability (EPC):

- EPC 53 – Demonstrate an understanding of the basic operation and energy efficiency of the various types of luminaires and the purpose of components and ancillary equipment including related hazards and their safety requirements.

Some jurisdictions require the holder of this unit to be licensed or certified and users should check with the relevant authorities.

Band: A

Unit Weight: 2

Pre-requisite Unit

MEM10016	Terminate and test electrical wiring and accessories
MEM10018	Select cable types and sizes to suit loads and electrical installation environment
MEM10019	Select circuit protection devices by type and rating, fit to switchboards and install earthing
MEM10023	Design and connect control switching of circuits for building services and industrial equipment

MEM18001 Use hand tools

Competency Field

Installation and commissioning

Elements and Performance Criteria

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

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|---|--|
| 1. Determine job requirements | 1.1. Follow standard operating procedures (SOPs) |
| | 1.2. Comply with work health and safety (WHS) requirements at all times, including appropriate risk control measures |
| | 1.3. Use appropriate personal protective equipment (PPE) in accordance with SOPs |
| | 1.4. Determine through the interpretation of electrical diagrams, drawings, lighting standards and/or from consultation the luminaire and ancillary equipment requirements for the electrical installation |
| 2. Install luminaires and ancillary equipment | 2.1. Obtain the number and type of luminaires and associated ancillary equipment through established procedures |
| | 2.2. Obtain necessary tools, equipment and testing instruments needed for installing luminaires and ancillary equipment |
| | 2.3. Isolate and tag circuits and equipment in accordance with procedures, where required |
| | 2.4. Install luminaires and accessories complying with job specifications, and regulatory and legislative requirements |
| | 2.5. Check installed accessories are straight and square in the required locations and within acceptable tolerances |
| | 2.6. Terminate lighting circuits to luminaires, switches and other control devices in accordance with manufacturer |

Elements describe the essential outcomes.

Performance criteria describe the performance needed to demonstrate achievement of the element.

specifications and regulatory requirements

- | | |
|------|---|
| 2.7. | Test luminaires and ancillary equipment to ensure compliance |
| 3. | <p>Troubleshoot luminaires and ancillary equipment</p> <p>3.1. Identify the fault and resulting safety hazards and implement risk control measures in consultation with appropriate personnel</p> <p>3.2. Apply diagnostic techniques to troubleshoot luminaires, ancillary equipment and associated lighting circuits using appropriate test equipment</p> <p>3.3. Repair/replace faulty circuits/components according to manufacturer specifications and regulatory requirements</p> <p>3.4. Test repaired/replaced circuit/component for functionality in accordance with regulatory requirements</p> <p>3.5. Dispose of discharge lamps in accordance with environmental guidelines and procedures</p> <p>3.6. Document installation and troubleshooting of luminaires, ancillary equipment and associated circuits in accordance with SOPs</p> |

Foundation Skills

This section describes those required skills (reading, writing, oral communication and numeracy) that are essential to workplace performance in this unit of competency.

Foundation skills essential to performance are explicit in the performance criteria of this unit of competency.

Range of Conditions

This field allows for different work environments and conditions that may affect performance. Essential operating conditions that may be present (depending on the work situation, needs of the candidate, accessibility of the item, and local industry and regional contexts) are included.

Lighting standard includes:

- AS/NZS 1680.1:2006 Interior and workplace lighting general principles and recommendations

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Regulatory requirements include:

- AS/NZS 3000:2007 Electrical Installations (known as the Australian/New Zealand Wiring Rules)
- National Construction Code (NCC) Australia or building code (NZ)

Faults include:

- fluorescent light circuits, including lamp, ballast and starter
- metal Halide and high-pressure sodium (HPS) lighting and circuits, including capacitor, poor connection, igniter and ballast
- extra-low voltage (ELV) lighting devices, including transformer (iron core or electronic), voltage drop, heat, over-voltage, poor connections and incompatible dimmers
- lighting control circuits, including manual control, passive infra-red (PIR), dimmers, photo electric or day-light switches and time clocks
- lighting management systems

Lighting circuits include two (2) or more of the following:

- single light controlled by a single switch
- multiple lights controlled by a single switch
- two and three-way switching using:
 - loop at the light method
 - loop at the switch method

Safe working practices include:

- demonstration of safe working practices and installation in accordance with industry established safe and sound practices

Unit Mapping Information

Release 2. Equivalent. Minor adjustments to reflect ERAC requirements for electrician licensing and revision of Essential Performance Capabilities.

Links

Companion Volume implementation guides are found in VETNet - <https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b7050d37-5fd0-4740-8f7d-3b7a49c10bb2>

