



Australian Government

UEEEL0070 Select effective and efficient light sources and luminaries for given locations and designs

Release: 1

UEEEL0070 Select effective and efficient light sources and luminaries for given locations and designs

Modification History

Release 1. This is the first release of this unit of competency in the UEE Electrotechnology Training Package.

Application

This unit involves the skills and knowledge required to select effective and efficient light sources and luminaries for given locations and designs.

It includes preparing and selecting light sources and luminaries, and documenting justification for the selections.

No licensing, legislative or certification requirements apply to this unit at the time of publication.

Pre-requisite Unit

UEEEL0063 Provide photometric data for illumination system design

Competency Field

Electrical

Unit Sector

Electrotechnology

Elements and Performance Criteria

ELEMENTS

Elements describe the essential outcomes.

1 Prepare to select light sources and luminaries

PERFORMANCE CRITERIA

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

- 1.1** Work health and safety (WHS)/occupational health and safety (OHS) procedures for a given work location are identified and applied
- 1.2** Lighting design parameters are obtained from a design brief, job specification and/or consultations with the

		client
	1.3	Illumination parameters for particular situation and task are obtained and applied in accordance with relevant industry standards
	1.4	Lighting manufacturer specifications for products are obtained and reviewed
2	Select light sources and luminaries	
	2.1	WHS/OHS risk control work measures and workplace procedures are followed
	2.2	Light sources and luminaries are selected appropriate to lighting design parameters
	2.3	Selected light sources and luminaries are within the illumination in accordance with relevant industry standards and the job specification
	2.4	Selected light sources and luminaries are documented accordance with workplace procedures
	2.5	Documentation is forwarded to appropriate person/s in accordance with workplace procedures

Foundation Skills

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

Range of Conditions

Range is restricted to essential operating conditions and any other variables essential to the work environment.

Non-essential conditions may be found in the UEE Electrotechnology Training Package Companion Volume Implementation Guide.

- Selecting light sources and luminaries must be demonstrated in at least three of the following:
- an application using incandescent lamps for colour rendition
 - outside security lighting
 - high bay application
 - highway lighting
 - store/shop lighting
 - school or training classroom
 - localised task lighting
 - flood-lighting application

- situation integrating some natural daylight

Unit Mapping Information

This unit replaces and is equivalent to UEENEEG185A Select effective and efficient light sources and luminaries for given locations and designs.

Links

Companion Volume implementation guides are found in VETNet - -

<https://vetnet.gov.au/Pages/TrainingDocs.aspx?q=b8a8f136-5421-4ce1-92e0-2b50341431b6>

Assessment Requirements for UEEEL0070 Select effective and efficient light sources and luminaries for given locations and designs

Modification History

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Performance Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions on at least one occasion and include:

- obtaining illumination parameters from a design brief, job specification or by consultation with the client
- understanding compliance and recommended illumination parameters for particular situations and tasks
- understanding manufacturers' technical information
- selecting appropriate light sources and luminaries
- documenting selected light sources and luminaries, including justification for the selections made
- dealing with unplanned events
- applying industry standards
- applying relevant work health and safety (WHS)/occupational health and safety (OHS) requirements, including using risk control measures
- following workplace procedures
- applying manufacturer specifications.

Knowledge Evidence

Evidence required to demonstrate competence in this unit must be relevant to and satisfy all of the requirements of the elements, performance criteria and range of conditions and include knowledge of:

- light sources, lamps and luminaries, including:
 - types of light sources and their historic development, including the practical requirements, advantages and disadvantages encompassing:
 - incandescent
 - electrical discharge in gases
 - tubular fluorescent
 - compact fluorescent types

- phosphor types
- low pressure sodium
- high pressure sodium
- metal halide
- mercury vapour
- tungsten halogen cycle lamps
- neon and advertising tube types
- light-emitting diode (LED) technologies
- each practical lamp type is designated in terms encompassing:
 - luminous efficacy
 - spectral output
 - colour rendering
 - longevity of operation
 - supply requirements and control equipment
 - cost
 - sustainability and recycling
- types of luminaries encompassing:
 - general design and types
 - provision of data on luminaries
 - methods of light control
 - properties of optical systems: refractors, reflectors and diffusers
 - luminance control techniques
 - luminaires and auxiliaries
 - Australian Standards for indoor and outdoor luminaries
 - calculation of utilisation factors
 - provision of photometric data
 - luminance of various fittings
- natural lighting and building design
- techniques used to minimise energy expenditure
- specific application lamps:
 - specific task lamps
 - germicidal lamps
 - indoor agricultural or hydroponic lamps
- relevant industry standards
- relevant job safety assessments or risk mitigation processes
- relevant manufacturer specifications and operating instructions
- relevant WHS/OHS legislated requirements
- relevant workplace documentation
- relevant workplace policies and procedures.

Assessment Conditions

Assessors must hold credentials specified within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must satisfy the Principles of Assessment and Rules of Evidence and all regulatory requirements included within the Standards for Registered Training Organisations current at the time of assessment.

Assessment must occur in suitable workplace operational situations where it is appropriate to do so; where this is not appropriate, assessment must occur in simulated suitable workplace operational situations that replicate workplace conditions.

Assessment processes and techniques must be appropriate to the language, literacy and numeracy requirements of the work being performed and the needs of the candidate.

Resources for assessment must include access to:

- a range of relevant exercises, case studies and/or simulations
- relevant and appropriate materials, tools, facilities, equipment and personal protective equipment (PPE) currently used in industry
- applicable documentation, including workplace procedures, equipment specifications, regulations, relevant industry standards, codes of practice and operation manuals.

Links

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