



THE UNIVERSITY OF
MELBOURNE

Grimwade Centre for
Cultural Materials
Conservation



LIGHT

Light and UV radiation can cause irreversible damage to objects (such as fading or weakening of materials). Some items are more sensitive than others, and the intensity and duration of light can have varying effects.

LIGHT SENSITIVE MATERIALS

Collection items that are most sensitive to high light levels or long-term exposure to light are:

- Textiles (fabric and dyes)
- Photographs
- Works on paper
- Books
- Organic materials (i.e., feathers, plant fibres)

Oil paintings and furniture are moderately sensitive.

Metal and stone are non-sensitive.

LIGHT LEVELS

Conservators measure the amount of visible light falling on an object with a lux meter. A lux meter measures light intensity.

Ultraviolet (UV) radiation is a type of invisible light that is particularly damaging to objects. It is important to reduce exposure to UV-light. UV radiation comes mainly from the sun, but also comes from certain types of lighting.

To minimise damage, lighting levels should be kept low and exposure to UV eliminated. Very high lighting, full sun or high UV levels can be damaging to all materials.

In museums and art galleries, the recommended light levels for display are:

- Sensitive materials <50 lux
- Moderately sensitive materials <250 lux
- Non-sensitive materials - eliminate unnecessary exposure

RESOURCES



reCollections
Caring for Collections
Across Australia – Handling,
Transportation, Storage and
Display, Heritage Collections
Council, available online:
<http://go.unimelb.edu.au/36wi>



A Practical Guide for Sustainable
Climate Control and Lighting
in Museums and Galleries,
Australian Museums and Galleries
Association, available online:
<http://go.unimelb.edu.au/k4wi>



Museums and Galleries of NSW –
Fact Sheet:
Light Damage and Light Control,
Museums and Galleries of NSW,
available online:
<http://go.unimelb.edu.au/8mwi>



Agent of Deterioration: Light,
Ultraviolet and Infrared,
Canadian Conservation Institute
Notes available online:
<http://go.unimelb.edu.au/2mwi>



Farke, M, Binetti, M & Hahn, O
2016, 'Light damage to selected
organic materials in display cases:
A study of different light sources',
Studies in Conservation, Mar2016
Supplement, vol. 61, pp. 83-93,
available online:
<http://go.unimelb.edu.au/4mwi>

HOW TO REDUCE LIGHT

Reducing exposure to light in the exhibition/display area can be achieved by:

- installing window coverings
- installing LED lights
- dimming lights
- tinting windows or showcases
- switch off lights when room is not in use
- rotating exhibitions
- grouping objects by material type
- glazing framed works with UV filtering acrylic

Reducing exposure to light in the storage room can be achieved by:

- switching off lights when room is not in use
- installing window coverings
- storing objects within enclosures, such as boxes, drawers or cupboards
- covering objects on open shelving with clean cotton covers

When managed properly, reducing light can also assist with reducing temperature.

TYPES OF LIGHTING

LED Lights

Stands for 'Light Emitting Diode' - preferred lighting system

- + Lifespan: 25,000 hours
- + No UV
- + Low energy use
- + No heat output
- × Can be expensive to purchase

Fluorescent Lights

- + Lifespan: 8,000 hours
- + Low heat output
- + Low cost
- × High levels of UV
- × Medium energy use

Incandescent/Halogen Lights

- + Low cost for the bulb
- × Lifespan: 1,000 hours
- × High energy use
- × High heat output
- × Being phased out of production
- × High levels of UV

Daylight

- + Highly efficient
- + Free
- + Good colour rendering
- × High UV levels

SUMMARY

Reduce exposure to light and UV radiation to ensure preservation of your collection.