



# CCI Notes

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## Environmental Monitoring Kit

### Introduction

The damaging effects of an uncontrolled environment on artifacts and art objects are well known. There are many examples where dryness has caused wood or ivory to crack and where bright lights have faded sensitive dyes or watercolours.

Unfortunately, intuitive assessments such as, "These lights appear to be too bright," or, "It feels dry in this exhibition room," are not sufficient to determine exact environmental control requirements. Accurate information is essential to evaluate the extent and urgency of any environmental problem. Only then can the exact solution to the problem be determined.

The equipment needed to monitor the environment is relatively expensive, and may be beyond the budget of many institutions. Although inexpensive instruments for this purpose do exist, they often lack the accuracy and sensitivity to monitor the conditions in museums adequately.

For a small fee, CCI's Preventive Conservation Services Division makes

available the necessary instruments to help museums and galleries monitor their environments.

### Environmental Monitoring Kit

The Environmental Monitoring Kit includes the necessary instrumentation for measuring the four most important environmental factors:

- relative humidity
- temperature
- illumination level
- ultraviolet (UV) radiation level.

The Kit consists of three hand-held instruments: a motor-driven psychrometer or electronic



Figure 1. A variety of environmental monitoring equipment is available from CCI.

humidity/temperature probe, a lux meter, and a UV monitor. A psychrometric slide rule and an instruction manual are also included. The manual, which includes diagrams, is written in such a way that even those who are unfamiliar with the equipment can obtain accurate readings. If problems arise, users may contact CCI for assistance.

The Environmental Monitoring Kit is available on loan for periods of up to three weeks.

### Recording Equipment

For situations where continuous long-term monitoring of relative humidity and temperature is required, CCI also lends recording hygrothermographs and data loggers. These may be borrowed for periods of up to three months, depending on availability.

The recording hygrothermograph produces an immediate visible trace of the temperature and relative humidity throughout the monitoring period. The data logger, although it is much smaller and more robust, does not allow the data to be examined until downloaded into a computer after the monitoring has been completed. In the case of clients who borrow the data loggers, CCI will download and print the data when the equipment is returned, then send the results to the client.



Figure 2. A recording hygrothermograph showing the visible traces of temperature and relative humidity.

### Data Interpretation

Correct interpretation of the data is essential in order to understand what is taking place and to consider possible measures to address any problems. Relevant peripheral information necessary for correct interpretation may include the type of collection involved, the HVAC system, the access to the collection (e.g. is this a seasonal museum), and the ability to make changes to the equipment, environment, or practices. Clients can request assistance in the interpretation of temperature and relative humidity data by contacting Preventive Conservation Services.

### How to Borrow Monitoring Equipment from CCI

To borrow an Environmental Monitoring Kit, a recording hygrothermograph, or a data logger, telephone or write to:

Preventive Conservation Services  
Canadian Conservation Institute  
1030 Innes Road  
Ottawa ON K1A 0M5  
Tel.: (613) 998-3721  
Fax: (613) 998-4721

You will receive an information letter and a loan agreement form that sets out the terms and conditions of the loan. Shipping and insurance of the equipment to the borrowing institution and back to CCI are the responsibility of the borrowing institution.

For those who are considering purchasing environmental monitoring equipment, a list of



Figure 3. An Environmental Monitoring Kit.

equipment, distributors, and approximate prices is available from CCI on request.

### Further Reading

Thomson, Garry. *The Museum Environment*. 2nd ed. London: Butterworths, 1986.

Copies also available in French.

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