



STATE OF CONNECTICUT

BOARD OF TRUSTEES

FOR THE STATE COLLEGES

80 PRATT STREET - HARTFORD, CONNECTICUT 06103

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JOHN F. ROBINSON, VICE-CHAIRMAN
ERNEST A. JOHNSON, SECRETARY

EXECUTIVE SECRETARY
J. EUGENE SMITH

RESOLUTION

concerning

Gift Presented to Southern Connecticut State College

February 4, 1972

RESOLVED, that the Board of Trustees for the State Colleges hereby accepts with thanks the gift of a Model IT-3 Infrared Thermometer valued at \$1,000 and presented by the Barnes Engineering Company to Southern Connecticut State College for use in its Earth Science department and requests the Executive Secretary to convey the appreciation of the Board to Mr. Saul Haffner, Marketing Director of the Company

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STATE OF CONNECTICUT

SOUTHERN CONNECTICUT STATE COLLEGE
501 CRESCENT STREET • NEW HAVEN, CONNECTICUT 06515



~~XXXXXXXXXX~~

397-2101

January 27, 1972

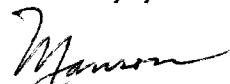
Dr. J. Eugene Smith, Exec. Secretary
Board of Trustees for State Colleges
80 Pratt Street
Hartford, Connecticut 06103

Dear Gene,

The Barnes Engineering Company, Inc. of 44 Commerce Road, Stamford, Connecticut 06904, through its Marketing Director--Mr. Saul Haffner--has donated a Model IT-3 Infrared Thermometer to the College for use in the Earth Science Department. This measuring instrument will also be of use in other departments. The approximate value is \$1,000.00 and a description is enclosed.

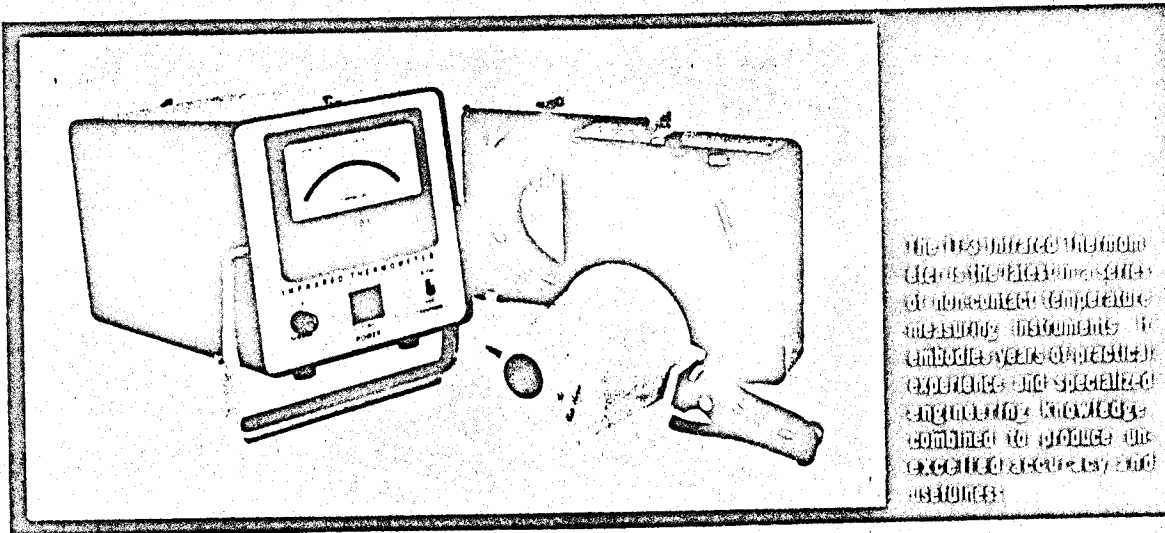
The Board of Trustees, I am sure, will be interested in knowing of this gift and wish to make an acknowledgement of acceptance through a resolution of thanks to the Company through Mr. Haffner.

Sincerely yours,


Manson Van B. Jennings
President

GJP
Encl.

BARNES ENGINEERING COMPANY MODEL IT-3 INFRARED THERMOMETER



The Barnes Engineering Company Model IT-3 Infrared Thermometer is a precision instrument for non-contact temperature measurement. It is designed for use in a wide range of industrial and scientific applications. The instrument is rugged and portable, and it is easy to operate. It is available in several models to meet the needs of different users.

The Model IT-3 Infrared Thermometer measures the temperature of materials, hot or cold, moving or static, **without physical contact**. Response to temperature change is instantaneous at any distance and changing ambient conditions have negligible effect upon accuracy of measurement. The IT-3 is light, compact, rugged and readily portable. It is also simple to operate without special training or experience.

The IT-3 consists of a sensing head with aiming sights and pistol grip, and a compact electronics case containing controls, amplifiers and indicating meter. For continuous measurements, the sensing head may be bracket or tripod mounted; an electrical output is provided at the electronics case to drive standard chart recorders and controllers.

Accurate measurement is insured by the design principle employed in the IT-3. Radiation from the selected target and from an internal controlled cavity is alternately sensed by a thermistor bolometer detector. Because the IT-3 is sensitive only to long wavelength radiation between 8 and 14 microns, it is capable of accurate measurement of temperatures as low as -50° F, far beyond the limits of usefulness of radiometric devices sensitive only to short infrared wavelengths. Temperature readings are shown directly on meter scales calibrated in both Fahrenheit and Centigrade.

Applications of the IT-3 Infrared Thermometer exist wherever temperature meas-

urement without contact is necessary. The IT-3 can control an important segment of a complex industrial process, or measure surface temperature of water from a ship or an airplane for oceanographic and meteorological studies. Moving objects are found in all industrial production operations and temperature measurement and control are often required though physical contact is impossible. The IT-3 can make a significant contribution in the manufacture and processing of metals, glass, plastic, paper, rubber, textiles and many other products. Where distinct temperature changes accompany wear or hazardous conditions, the IT-3 can provide a warning signal in time to avoid costly or dangerous results.

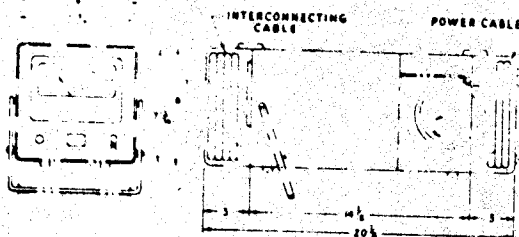
Meteorological and atmospheric investigations can also be carried out readily with the IT-3. The Infrared Thermometer is sensitive to radiation in a spectral region where water is highly emissive and the atmosphere is transparent, and can therefore look through the atmosphere to make accurate readings of water surface temperatures. The Thermometer has been used in extended programs of oceanographic studies involving temperature charting of coastal waters of both the Atlantic and Pacific oceans, and in determining thermal patterns characteristic of pollution in streams and rivers.

Standard models of the IT-3 cover temperature spans of -50 to $+150^{\circ}$ F, $+150$ to $+400^{\circ}$ F, $+10$ to $+110^{\circ}$ F and $+50$ to $+150^{\circ}$ F. Special calibrations are available

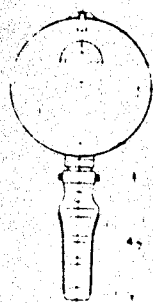
over a total span from -50 to +2000 F. A special cast-metal sensing head cover is available for permanent installations when it is desirable to air-purge to maintain cleanliness; cooling coils may be installed within this head to protect the IT-3 sensing elements from high ambient temperatures.

All components of the IT-3 are contained within the electronics case and two metal end covers when the instrument is stored or transported. A swiveling carrying handle folds under the electronics case to incline the control panel and meter at an angle convenient for operation and reading.

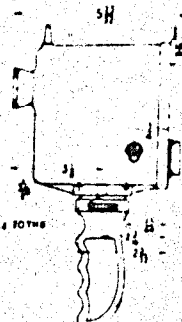
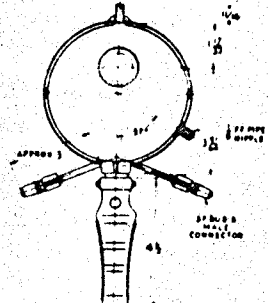
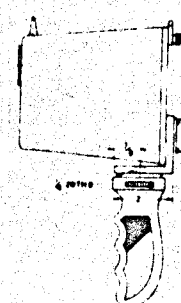
ELECTRONICS CONSOLE



STANDARD SENSING HEAD



SPECIAL AIR-COOLED SENSING HEAD



IT-3 SPECIFICATIONS

| TEMPERATURE RANGES | Type ¹ | Range ² | Resolution | Absolute Accuracy ³ |
|--------------------|-------------------|-------------------------------------|--------------------------------------|------------------------------------|
| | A | -40°C to +60°C -50°F to +150°F | 0.5°C (above 0°C) 1°C (below 0°C) | 2°C (above 0°C) 4°C (below 0°C) |
| | B | +60°C to +200°C +150°F to +400°F | 0.7°C | 2.5°C |
| | E | +10°C to +60°C +50°F to +150°F | 0.5°C | 1.2°C |
| | S | -10°C to +45°C +10°F to +110°F | 0.5°C | 1.2°C |

NOTES:

1. Other temperature ranges optional at extra cost. 2. Each type is calibrated in both Centigrade and Fahrenheit. 3. Accuracy is stated for target emissivity of unity.

- Field of View 3° (0.7° or 30° optional), focussed at infinity (close-focussing optional).
- Response Time "Fast" mode: 50 milliseconds to 63%.
"Slow" mode: 500 milliseconds to 63%.
- Readout Degrees Centigrade and Fahrenheit direct on meter face.
- Recorder Output 50 millivolts full scale adjustable, 1000 ohms
- Spectral Passband 8 to 14 microns standard; (other bandwidths on special order).
- Ambient Temperature Specified accuracy is maintained in ambients from +40°F to +120°F for Type A and Type E; +40°F to +110°F for Types B and S. Operable in ambients down to 0°F with slight degradation of accuracy. (Head casting with water cooling coils optional.)
- Power Required 105 to 125 volts, 58.7 to 61.3 cps, 25 watts. (50 cps optional.)
- Cables Power and interconnecting cables; 8 feet long. Longer interconnecting cable optional.
- Weights Optical Head, 2¾ pounds
Electronics Console, 13½ pounds
Complete Instrument (with covers and cables), 20½ pounds
Shipping Weight, 30 pounds



BARNES ENGINEERING COMPANY

INSTRUMENT DIVISION / 30 Commerce Rd. / Stamford, Conn. / Telephone 203 348-5381

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