

Beaumont

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Document Contact: *Teresa Lovins: Supv,
Laboratory*
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Calibration of the Extech IR Thermometer Model IR200

Document Type: Procedure

I. PURPOSE AND OBJECTIVE:

The purpose of this document is to provide directions for calibrating the Extech® model IR200 thermometer.

II. CLINICAL SIGNIFICANCE:

- A. Each Extech® model IR200 thermometer should be calibrated before initial use and annually thereafter, as well as any time there is reason to suspect change or damage.
- B. The calibration results must meet the criteria defined in the Acceptable Criteria section. If the results do not meet these criteria, the thermometer should be taken out of service until an investigation is completed and resolved.

III. EQUIPMENT:

- A. National Institute of Standards and Technology (NIST)-certified thermometer.
- B. Each Extech® model IR200 thermometer to be calibrated.
- C. Water
- D. Ice
- E. Plastic container

IV. PROCEDURE:

- A. Fill a plastic container approximately 2/3 full with cold water, and add a small amount of ice so that the temperature gets as possible close to 1 -4°C.
- B. Prop / insert the NIST thermometer inside the container, so that the tip of the thermometer is just below the surface.
- C. Allow the NIST thermometer to equilibrate.
- D. Take the temperature of the water surface with the IR thermometer.

- E. Read and record the NIST and IR thermometer temperatures.
- F. For 5-10°C point reading, repeat the first step by getting the water temperature close to 5-10°C.
- G. Prop / insert the NIST thermometer inside the container, so that the tip of the thermometer is just below the surface.
- H. Allow the NIST thermometer to equilibrate.
- I. Take the temperature of the water surface with the IR thermometer.
- J. Read and record the NIST and IR thermometer temperatures.
- K. For 10-15°C point reading, follow the first step by getting water temperature close to 10-15°C.
- L. Prop / insert the NIST thermometer inside the container, so that the tip of the thermometer is just below the surface.
- M. Allow the NIST thermometer to equilibrate.
- N. Read and record the NIST and IR thermometer temperatures.
- O. For 20-24°C point reading, allow the water to warm to a temperature close to 20-24°C.
- P. Prop / insert the NIST thermometer inside the container, so that the tip of the thermometer is just below the surface.
- Q. Allow the NIST thermometer to equilibrate.
- R. Read and record the NIST and IR thermometer temperatures.
- S. Document if calibration Passed or Failed.

V. EXPECTED VALUES:

- A. The IR temperature taken must all be within 1°C of the NIST temperature.

VI. REFERENCES:

- 1. Extech® Non-contact Forehead IR thermometer User’s Manual, 5/09 v1.0
- 2. AABB, *Technical Manual*, current edition.
- 3. AABB, *Standards for Blood Banks and Transfusion Services*, current edition.

Attachments

[IR Thermometer Calibration Form.docx](#)

Approval Signatures

Step Description	Approver	Date
	Vaishali Pansare: Chief, Pathology	2/13/2024
	Ryan Johnson: OUWB Clinical Faculty	2/9/2024
Policy and Forms Steering Committe (if needed)	Teresa Lovins: Supv, Laboratory	2/2/2024

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	Teresa Lovins: Supv, Laboratory	2/2/2024
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