

QUAKELOGIC

INSULATED
INSTRUMENT
ENCLOSURE

QLAE-13 ARCTIC ENCLOSURE



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INSULATED, HEATED, IP68 ENCLOSURE FOR FIELD INSTRUMENTS



KEEPS FIELD INSTRUMENTS RUNNING AT -60 °C

The QLAE-13 Arctic Enclosure is a thermally insulated, IP68-sealed housing for seismometers, accelerographs, infrasound sensors, dataloggers, telemetry and power systems deployed on glaciers, permafrost, high-altitude sites and polar field stations. A composite shell lined with closed-cell polyurethane insulation holds instrument heat; an optional self-regulating heater with phase-change packs and an optional insulated battery pack extend autonomous operation through sub-zero winters.

- Durable, corrosion-resistant composite construction rated from -76 °F to 194 °F (-60 °C to 90 °C) with a UV-resistant arctic white finish.
- Weatherproof gasketed lid with secure stainless latches and IP68 sealing against water, snow, ice and condensation.
- Cable entry glands for sensor and power connections plus an internal mounting plate for clean instrument installation.
- Three factory configurations, an aluminum base plate, and optional ventilation and temperature-control accessories to match each site.

STANDARD FEATURES »

- Impact-resistant composite shell
- Closed-cell PU insulation, $R \geq 10$
- IP68 sealed lid and ports
- Gasketed door, secure latches
- 1.5 in multilayer insulated walls
- Up to 3 IP68 cable glands
- Membrane pressure-equalization vent
- Removable internal mounting plate
- Aluminum base plate included
- Tripod, anchor or stake mounting
- UV-resistant arctic white coating
- -60 °C to +90 °C materials
- Thermal cycling tested, 30 cycles
- MIL-STD-810G sealing and vibration
- Lightweight: 9 lb (4.1 kg)
- Custom sizes and cable layouts

KEY FEATURES

- Closed-cell polyurethane insulation ($R\text{-value} \geq 10$) lines every interior surface, so instrument and heater warmth stays inside through long polar nights.
- IP68 sealing blocks water, snow, ice and condensation; a membrane vent equalizes pressure during temperature swings and altitude changes without admitting moisture.
- Fiberglass-reinforced ABS or marine-grade polycarbonate shell resists impact, corrosion and glacier compression while staying light enough to carry in.
- Optional 12 V PTC heater pad (5–20 W) is self-regulating, and phase-change material packs buffer freeze–thaw cycles with no control electronics.
- Optional insulated lithium battery pack turns the enclosure into a fully autonomous power station for off-grid, unattended monitoring.
- Up to three IP68 cable glands or MIL-spec circular connectors route sensor, power, GPS and telemetry cables without compromising the seal.
- Removable aluminum or PVC internal plate and included aluminum base plate make instrument mounting and leveling straightforward in the field.
- Integrated mounting base accepts tripods, anchor bolts or ground stakes; an optional anti-theft bracket secures the unit at public sites.
- QuakeLogic can customize the enclosure to your instrument's dimensions and cable connections, and supplies it with the sensor, datalogger and power system.

PRODUCT FEATURES

Shell

Impact-resistant fiberglass-reinforced ABS or marine-grade polycarbonate, UV-resistant arctic white coating.

Insulation

Closed-cell polyurethane foam, $R\text{-value} \geq 10$, on all interior surfaces; 1.5 in (38 mm) multilayer walls.

Sealing

IP68 ingress protection; gasketed lid with secure latches; MIL-STD-810G sealing and vibration compliance.

Thermal Management

Membrane pressure-equalization vent; optional 12 V PTC heater pad (5–20 W) and phase-change material packs.

Cable Entry

Up to 3 IP68-rated cable glands or MIL-spec circular connectors for sensor and power connections.

Mounting

Integrated base for tripods, anchor bolts or ground stakes; aluminum base plate; removable internal mounting plate.

Power Options

Optional insulated lithium battery pack and external solar panel adapter for autonomous operation.

Environment

Materials rated -76°F to 194°F (-60°C to 90°C); thermal cycling -40°F to 140°F (-40°C to 60°C), 30 cycles.

For more information about the features, specifications, and available configurations of the QLAE-13 Arctic Enclosure, please contact QuakeLogic.

CONFIGURATION OPTIONS

CONFIGURATION	WHAT IS INCLUDED
Base Unit	Insulated, IP68 weather-sealed enclosure with cable glands, internal mounting plate and aluminum base plate
With Heater + PCM	Base Unit plus 12 V PTC heater pad (5–20 W) and phase-change material packs for variable freeze-thaw sites
With Battery Pack	Base Unit plus insulated lithium battery pack for fully autonomous off-grid operation
Custom Build	Enclosure sized and ported to your instrument dimensions and cable connections
Typical Payloads	Seismometers, accelerographs, infrasound sensors, dataloggers, telemetry radios, GPS timing, chargers
Discounts	Volume and institutional pricing for OEM, academic and field-study programs

PHYSICAL & THERMAL DATA

SPECIFICATION	VALUE
External Dimensions (W × L × H)	13.0 × 20.5 × 13.4 in (330 × 521 × 340 mm)
Internal Dimensions (after insulation)	Approx. 10.0 × 17.5 × 10.4 in (254 × 445 × 264 mm)
Wall Thickness	1.5 in (38 mm) multilayer with integrated insulation
Weight (empty)	9 lb (4.1 kg), excluding internal equipment
Insulation R-value	≥ 10 (closed-cell polyurethane foam)
Material Temperature Rating	–76 °F to 194 °F (–60 °C to 90 °C)
Thermal Cycling Test	–40 °F to 140 °F (–40 °C to 60 °C), 30 cycles
Heater (optional)	12 V PTC self-regulating pad, 5–20 W

OPTIONAL FEATURES & ACCESSORIES

LITHIUM BATTERY PACK

Insulated lithium battery pack with thermal sleeve for autonomous, off-grid operation of sensors and dataloggers through extended cold periods.

SOLAR PANEL ADAPTER

External solar panel adapter for recharging the battery pack at remote sites, keeping monitoring stations powered without grid access.

TELEMETRY / TEMPERATURE LOGGER

Remote telemetry and internal temperature logger for monitoring enclosure conditions and instrument health from the office.

ANTI-THEFT BRACKET SYSTEM

Lockable bracket system that secures the enclosure to its base, pad or structure at unattended and publicly accessible sites.

TECHNICAL SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Model	QLAE-13 Arctic Enclosure (also listed as QL13AE)
Product Type	Thermally insulated, sealed instrument enclosure
External Dimensions	13.0 × 20.5 × 13.4 in (330 × 521 × 340 mm), W × L × H
Internal Dimensions	Approx. 10.0 × 17.5 × 10.4 in (254 × 445 × 264 mm)
Wall Thickness	1.5 in (38 mm) multilayer, integrated insulation
Weight	9 lb (4.1 kg) excluding internal equipment
Shell Material	Fiberglass-reinforced ABS or marine-grade polycarbonate
Finish	UV-resistant arctic white coating
Insulation	Closed-cell polyurethane foam, R-value ≥ 10, all interior surfaces
Ingress Protection	IP68; sealed against water, snow, ice and condensation
Lid / Door	Weatherproof gasketed lid with secure latches
Pressure Equalization	Integrated membrane vent; blocks water and particulates
Base Plate	Aluminum base plate included

SPECIFICATION	DESCRIPTION
Cable Entry	Up to 3 IP68-rated cable glands or MIL-spec circular connectors
Internal Mounting Plate	Removable aluminum or PVC plate for sensor payloads
External Mounting	Integrated base for tripods, anchor bolts or ground stakes
Heater (option)	12 V PTC self-regulating heater pad, 5–20 W
Thermal Buffer (option)	Phase-change material (PCM) packs
Battery (option)	Insulated lithium battery pack with thermal sleeve
Solar (option)	External solar panel adapter
Monitoring (option)	Remote telemetry / internal temperature logger
Security (option)	Anti-theft bracket system
Material Temperature Range	–76 °F to 194 °F (–60 °C to 90 °C)
Thermal Cycling	–40 °F to 140 °F (–40 °C to 60 °C), 30 cycles
Compliance	IP68 ingress; MIL-STD-810G sealing and vibration
Customization	Sized and ported to customer instrument dimensions and cable connections

QLAE-13 ARCTIC ENCLOSURE

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About QuakeLogic:

QuakeLogic Inc. is a California-based engineering and technology company providing innovative, reliable, high-quality solutions to customers worldwide.

Our Commitment

We are committed to quality, innovation, and customer satisfaction — building lasting partnerships through reliable solutions and dependable support.

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