Atmospheric conditions

<http://www.engineeringtoolbox.com/standard-atmosphere-d_604.html>

Expected temperature is around -70c

Expected pressure is around 1 Pa

Many datasheets (for sensors) checked list -40c as the lowest rated operating temperature. Additional research (stackexchange) indicates electronics will likely function at lower temperatures, however functionality may become erratic. Electronics must be initialized at room temperature and allowed to reach operating temperature before beginning cooling cycle. Extremely low temperatures may permanently damage electronics.

Recommend constructing a cryogenic test environment. Device would be an expanded polystyrene ice chest and several bricks of dry ice (-80c).

Gas sensors, microprocessors, altimeter and camera should be tested at cryogenic temperatures.

Aerogel insulation may be used for temperature sensitive equiptment (check if it’s transparent