



# CAESAR Orientation Document

[https://www.eol.ucar.edu/field\\_projects/caesar](https://www.eol.ucar.edu/field_projects/caesar)

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Kiruna, Sweden



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Welcome to Kiruna, Sweden! This orientation package has been put together to help you become familiar with the Kiruna area and hopefully answer some of the questions you may have when you arrive. If you have any questions regarding the contents of this package, please contact Cory Wolff ([cwolff@ucar.edu](mailto:cwolff@ucar.edu); 303.335.6517).

## Sweden Entry Requirements

U.S. citizens entering Sweden must have a passport valid for at least 3 months beyond the period of your stay. No visas are required for stays of less than 90 days.

More information on entering Sweden and about the country in general from the US State Department can be found at:

<https://travel.state.gov/content/travel/en/international-travel/International-Travel-Country-Information-Pages/Sweden.html>

## Kiruna, Sweden

Kiruna is a small city of approximately 23,000 people. There is a large iron ore mine on the west side of town which is the main economic driver for the area. Tourism, especially in winter, is also important as people visit to see the northern lights, visit the Ice Hotel (about 10 miles from Kiruna), and participate in outdoor winter sports such as skiing, dog sledding, and snowmobiling. Due to mining activity undercutting the western part of the city by the LKAB mine (one of the largest iron ore mines in the world), buildings in that area are being condemned and reconstructed or moved to the eastern part of town. A new city center is already thriving there with a new City Hall, Recreation Center, Library and Arts Center, the Scandic Hotel, new apartments, and a shopping center with groceries, restaurants, and other stores.

## Weather

Kiruna is located at 67.8° N, 20.3° E. It will be winter transitioning to spring during CAESAR. Temperatures will be coldest at the beginning of the project with gradual warming by the end. The average high and low in mid-February is 18° F (-8 C) and 4° F (-16 C), respectively. By mid-April those have increased to an average of 32° F (0 C) and 18° F (-8 C). Temperatures below 0° F will be common early in the project, becoming less so with time. There will be snowfall on occasion and a lot of snow on the ground. The sun will be quite low in the sky to start, but days will get noticeably longer and brighter as the project progresses. On February 20 there will be 8.5 hours of daylight with the sun rising at 0737 and setting at 1609. On April 9 there will be almost 15 hours of daylight with the sun rising at 0513 and setting at 2014.



Google Earth view of the city of Kiruna.

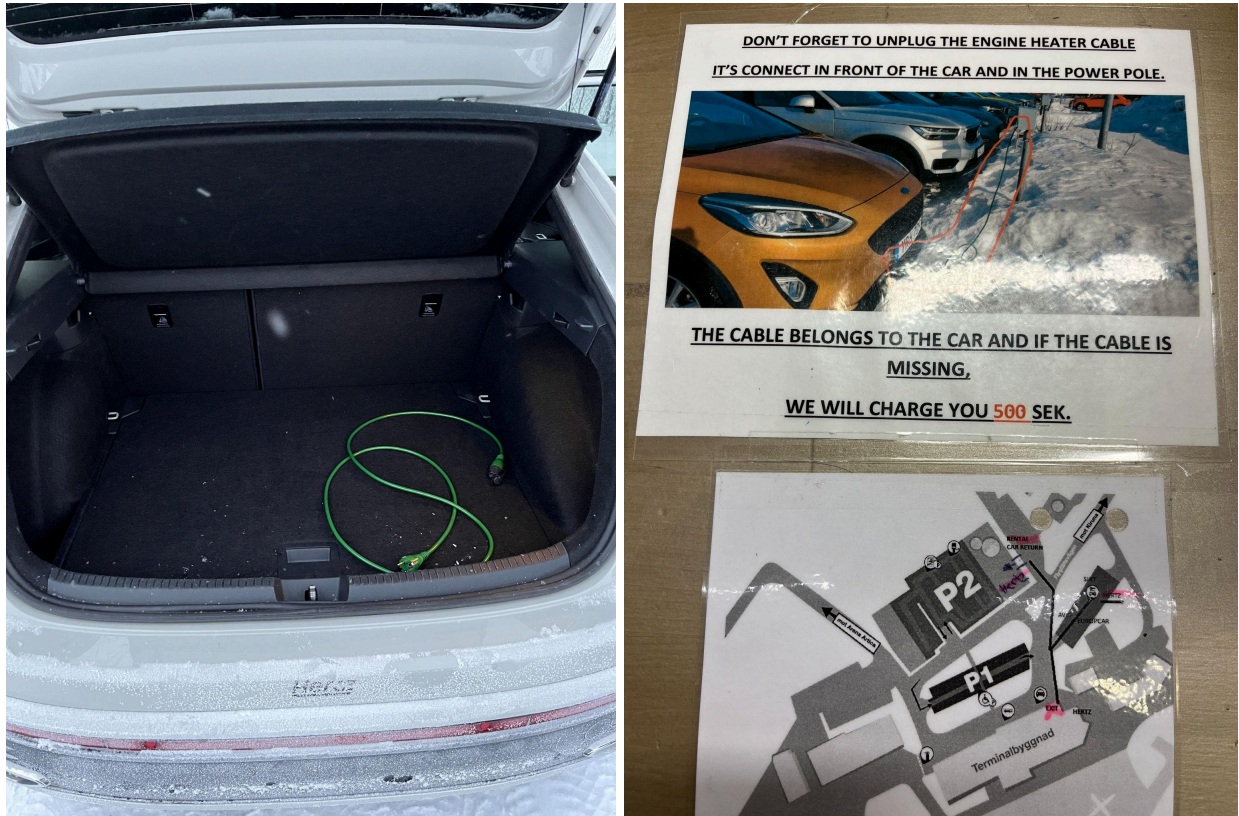
## Air Travel

You will arrive at Kiruna Airport (ESNQ). The airport is located about 3 km (2 mi) east of Kiruna. Scandinavian Airlines operates the majority of commercial flights serving Kiruna with service only to/from Stockholm. There are anywhere from 1 - 3 flights per day. The terminal is small with only one gate. Check in, security, and baggage claim are generally efficient with such little air traffic, though services there are only open when flights are scheduled.



## Car Rentals & Getting Around

Hertz is the main car rental operator at Kiruna airport, though National and Sixt also have a presence. Counters are located next to the baggage claim and the cars are a short walk away. Rental cars will have an extension cord in them, either in the trunk or the back seat. These are used to power a block heater on the engine so that the vehicle will start easier in cold weather. Some parking areas have access to a plug in. The cord must be returned with the vehicle.



A cord in the back of a rental car and a sign with the rules at the airport terminal.

A bus runs between the airport and city center and is scheduled based on the flight schedule. It stops just down the street from the Scandic and within a couple of blocks of the Best Western. Schedules and routing can be found on the [Horvalls Buss website](#).

Taxis are available in Kiruna, but Uber and Lyft do not operate there.

Google Maps provides very accurate information about the city streets and is a good tool for navigation. The new construction near the Scandic is not well reflected in mapping tools yet, though most of the businesses around there are labeled.

Roads are generally kept in good condition, even in the snow. Many rental cars have studded tires on them for extra traction as well. Drivers should be cautious and allow plenty of room between vehicles and time to stop. Pedestrians are common even during the coldest weather.

## Lodging

CAESAR participants will be housed in either the [Scandic Kiruna](#) or the [Best Western](#). Both provide single occupancy rooms with free breakfast and WiFi as well as a gym, sauna, and on-site restaurant. Rooms are somewhat small by American standards but average for the area. The Scandic is closer to the hangar (about 7 minutes) than the Best Western (about 13 minutes).

Public laundry facilities are not available at either hotel. Both hotels will provide drop off laundry service for a fee: 150 SEK per bag at the Best Western and 67 SEK per kg of clothes at the Scandic. The Scandic may also allow people to use a washer/dryer during certain times of the day but those details are still being worked out. All participants will have access to a washer and dryer at the hangar as well.

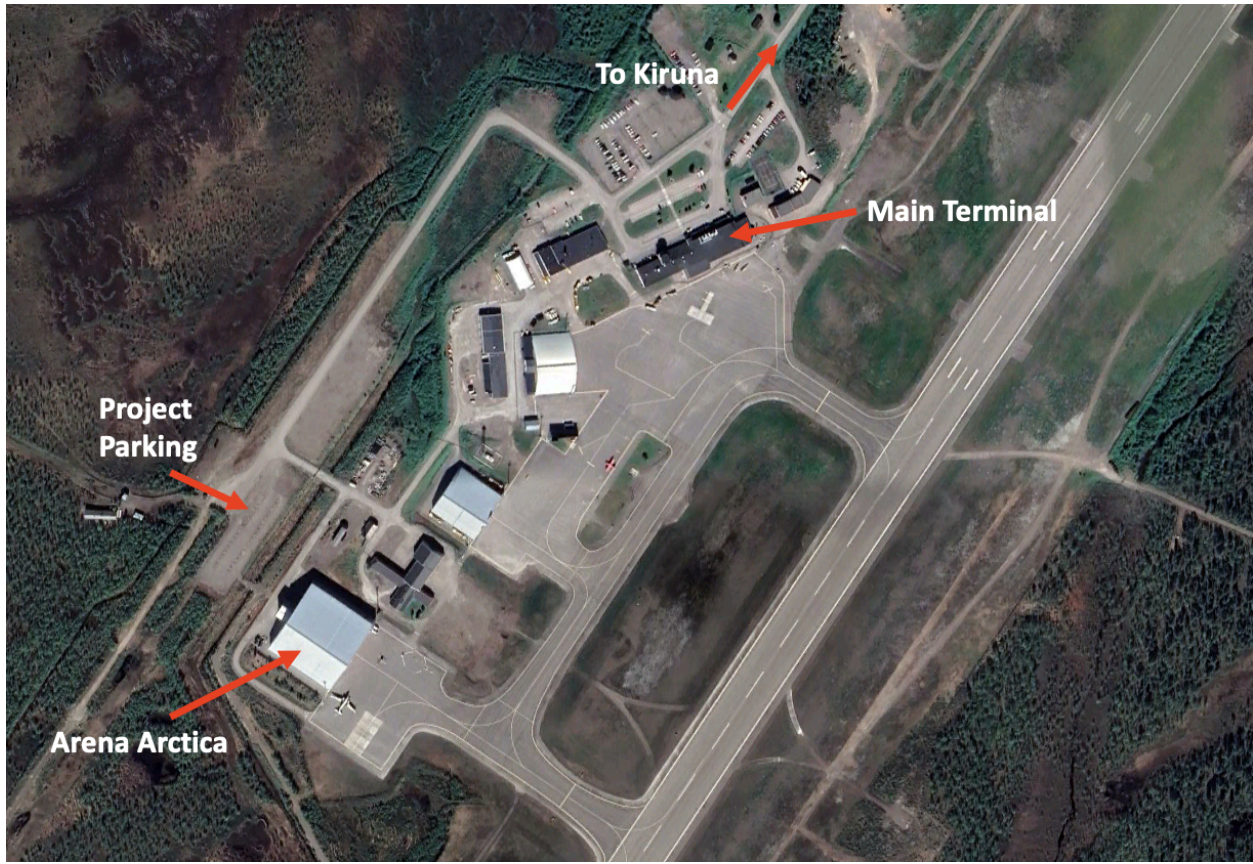
## CAESAR Airport Operations

The C-130 will be based at the Arena Arctica hangar on the southwest part of the airfield. To get there continue about a half mile further down the main road from the airport terminal. There is a large parking lot behind the terminal and a walking path through a secure gate that will allow access to the hangar. There is also a vehicle gate, but this will only be used with special permission (e.g. if heavy items need to be picked up or dropped off).

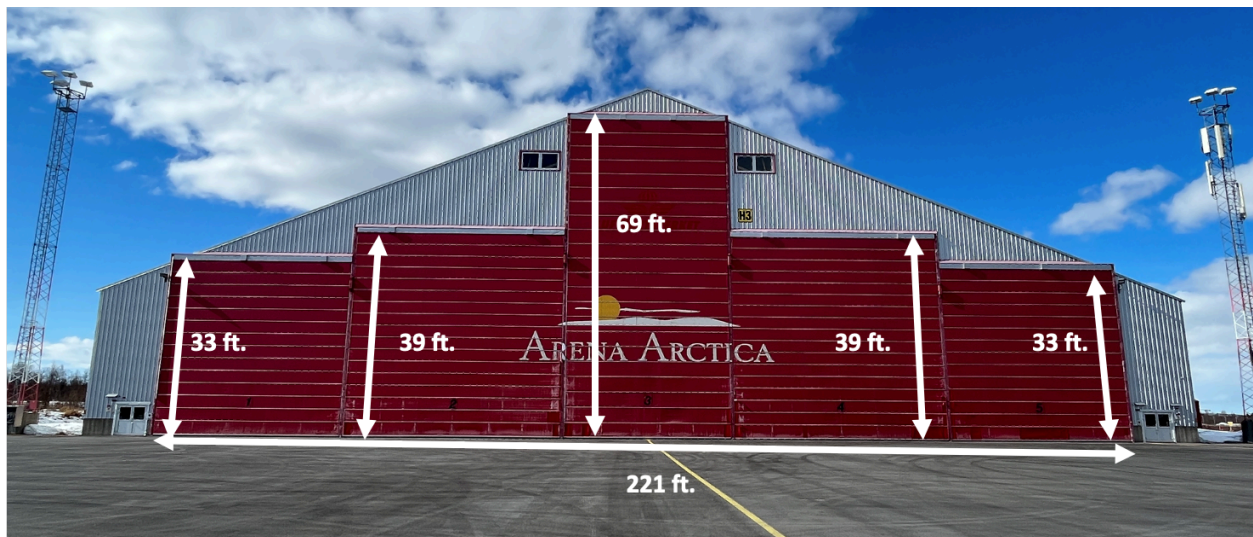
The hangar is very large, with space for up to three C-130s, leaving a good amount of work and storage space for the CAESAR team. It is heated, with the temperature kept around 10 C (50 F) in the winter time. That will fluctuate some depending on how often the doors need to be opened. Two of the containers will be stored inside the hangar along with other ground support equipment. There is also a small kitchen and a locker room with two washers and dryers available to the team.

For the first half of the project the hangar will be shared with a C-130 from the Swedish Air Force, which will have a fairly large crew and equipment in the hangar that will need to be worked around. A search and rescue helicopter and its crew will also be on site. Positioning of aircraft will be done based on flight schedules, so the location of the C-130 in the hangar will likely change from day to day.





Google Earth view of Kiruna airport with important locations identified.



View of Arena Arctica from the ramp.





View of the hangar from the parking area



Interior of the hangar.



## Operations Center

The CAESAR Operations Center will be housed at Arena Arctica. RAF has reserved a conference room that will easily accommodate the team for forecasting, flight planning, flight following, and data processing. EOL will provide a secure network along with a multi-function printer and A/V equipment. Data sharing will be done via a cloud distribution network, but EOL may also provide servers if deemed necessary. Science meetings will be held at a room at the Scandic on Mondays and Thursdays.





Operations Center at the hangar.

## Badging and Access

Badges will be required for all CAESAR participants who need access to the hangar. Training will be provided prior to the project, and your badge will be given to you on your arrival to Kiruna. All badges must be turned in prior to departure. Your badge will allow you access to the walk-in gate off of the parking lot as well as access to all hangar doors. Please keep track of your badge and notify the project manager right away if it is lost or stolen.

## Airfield Safety

- Aircraft always have the right away. Stay alert when walking in the hangar and on the apron. Watch for aircraft and other equipment movements.
- Be very aware of extension cords, hoses, and other trip hazards when walking around in the hangar.
- Do not wander beyond the edge of the apron or the immediate vicinity of the hangar. If you need access to other parts of the airfield you will need to be escorted by an airport employee.



- Use proper protective clothing when you are handling hazardous products/materials or performing tasks that would require additional protection. Talk to RAF staff if you need hearing protection.
- There is no smoking on the ramp, apron, or in the hangar.
- Always lock vehicles and keep personal items out of sight.
- In case of an emergency call **112**.

## Cold Weather Considerations

Kiruna is going to be cold during the project (see weather section above). While we will not be working outside for long periods of time it will still be important to have the proper clothing to stay warm. Winter boots, insulated pants, a warm coat, good gloves or mittens, and a hat are a must. Adding wool socks, base layers, glove liners, and a balaclava (neck gaiter) are strongly recommended. Some may also want to consider goggles for eye protection and warmth. Layering is the recommended way to provide warmth while also giving the flexibility to add or subtract depending on your comfort level. Here is an article [“How to Dress in Cold Weather”](#) which introduces the basics of the layering concept. If you are new to cold weather conditions, you may feel a little overwhelmed with the potential gear you may need. Simply follow the three main component concepts to allow flexibility throughout your day in different situations. Kiruna also has a couple of sporting goods stores in case you find that you need additional or new clothing for the conditions.

## Health Information

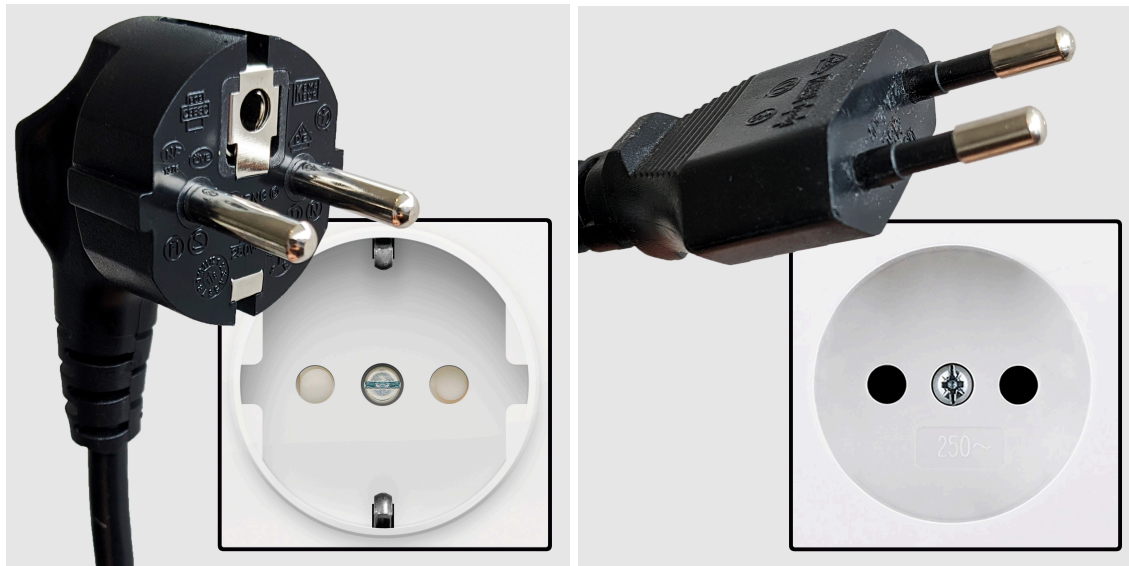
You should coordinate with your Health Insurance provider to discuss coverage while in Kiruna if you have questions or concerns. There is a hospital in the city center for emergencies. No vaccines are required for entering Sweden. COVID-19 is still a concern, but masks will not be required. Any illnesses will be dealt with on a case by case basis.

## Paying for Things

The currency used in Sweden is the Swedish Krona (SEK). The conversion rate fluctuates but is around 10 SEK per 1 USD. Credit cards are accepted virtually everywhere in Sweden and it is rare to see cash used for any purchase. Some ATMs are available if needed, but there are many places that won't accept cash. Make sure you have a credit/debit card. Most credit cards from large banks (US Bank, Chase, etc.) don't charge international fees anymore, but make sure to check with your specific financial institution.

## Electricity

Electrical power in Sweden is 220-240VAC at 50 Hz. Please take care when plugging in your electronic devices. Most computing equipment can handle that voltage with the proper adapter, but other items will require a converter. Be sure to bring a conversion plug with you if you are concerned about the voltages. The most common types of plugs and receptacles are shown below.



Type F and Type C plugs and receptacles used in Sweden.

## Cell Phones & Communications

There is good cell coverage in Kiruna. You will need an international plan on your phone to use it (unless you are on WiFi). Calls and SMS texts will likely be more expensive. WhatsApp uses your data to send messages, which is generally less expensive. It can be used on WiFi as well.

## Grocery Stores and Restaurants

There are multiple grocery stores in Kiruna. The largest is called Coop and is part of a larger shopping center which also contains an appliance and electronics store and a clothing store. It is in the south central part of the city. There is a smaller version of the Coop in the retail area near the Scandic. It is convenient to the airport as well. There are also smaller markets around the city.

Kiruna has a number of restaurants, both in the old city center and the new area. Both the Scandic and the Best Western have on site restaurants that serve lunch and dinner



as well. Tipping in Sweden is not expected or mandatory, but it is becoming more common to leave a small tip, usually rounding up or adding 5-10% if it was a good experience.

The Kiruna per diem rate is \$107.

## Dialing Phone Numbers in Sweden

If you need to make a call, cell phones will generally handle international access by using the '+' sign.

USA Country code: +1

Sweden Country code: +46

## Things to do in Kiruna

Kiruna is a popular tourist destination at this time of year. Most activities are geared towards outdoor enthusiasts with plenty of options for downhill and cross country skiing, snowshoeing, and even dog sledding. Near to Kiruna is also the Ice Hotel, which is built from scratch each winter using ice from a frozen lake. Aurora Borealis viewing also draws people to the region. Perhaps the CAESAR forecasters will add an Aurora outlook to their briefings on occasion.