2021 / Case Study

The World's Most Dangerous Airport Made Safer

Everest Base Camp, Chaurikharka, Nepal

Avlite®

"We Believe Technology Improves Navigation."

"The AV-426 lights supplied to Lukla Airport have been praised by all pilots who use this challenging runway. We were proud to work with Airport Chief, Yogendra Kunwar and Aviation Nepal to upgrade Lukla's services."

Shiv Prakash Khemka

Director,
Mahavir Shree International Pvt. Ltd.

Product Overview

Application: Airfield

Date: 2019

Products:

- AV-426 Solar Aviation Light

The World's Most Dangerous Airport Made Safer

Elevation
2,845 m / 9334 ft

Location
Chaurikharka, Nepal

Founded In
1964

Background

Lukla Airport (also known as Tenzing Hillary Airport) in Nepal in the Himalayas is renowned for being the world's most dangerous airport. It has gained that title due to challenging conditions that make it hard for pilots to land safely.

It is a very short runway, only 527 metres (1,729 feet) long. An international airport generally has a runway 3000 metres (10,000 feet) long, so aircraft have to stop in around a sixth of the distance. Lukla Airport is so short that it has a 12% rise in its runway to assist in slowing down landing aeroplanes.

The surrounding terrain also means there is minimal room for error upon approach. Accuracy is of the utmost importance as once descent has begun, the pilot must commit as the nearby mountains mean there is no opportunity for a missed approach.

Furthermore, there is a reduction of lift at Lukla Airport due to the high altitude. The air density is considerably lower which reduces lift and air resistance, making it harder to slow down a plane.

Lukla has a poor safety record and the Civil Aviation Authority of Nepal has implemented a strict set of criteria to be able to land at the airport. All pilots must have completed 100 short take-off and landing flights, have one year or more flight experience in Nepal and have successfully completed ten flights into Lukla with a certified instructor.

The Challenge

The weather in the Himalayas is erratic and there were many challenges for this airfield lighting project. This included the need for lighting that could remain autonomous for days without recharge due to the unpredictability of the mountain's elements.

These requirements also meant that an extremely durable fixture was needed to survive the cold and harsh environment.

The installed lighting system also needed to work not only from dusk till dawn, but also in inclement weather conditions.

The lighting was required to be solar due to the limited resources available at one of the world's highest runways and cost prohibitive works required to add a wired system.

In addition to the above, the lighting system also needed to be easy to install and operate at the runway edge.

Solution

Mahavir Shree International, Avlite Systems Nepal partner, added 90 standard chassis AV-426 solar aviation lights to the remote Lukla Airport. The versatile light was ordered in multiple configurations.

The AV-426 is a robust, completely self-contained LED solar aviation light designed for a range of aviation applications. These include permanent approach, runway edge, threshold, helipad and tactical airfield lighting. Fitted with RF control, the AV-426 can be controlled from the tower or from the ground with no costly cabling or trenching required.

The AV-426 includes next generation solar technology. This includes active maximum power point tracking (MPPT) which maximises the power extracted from the solar panels. The AV-426 has enhanced optics for improved performance with class-leading efficiency and operating runtime.

The AV-426 Solar aviation lights were supplied in the following configurations:

- 27 Omni-directional white for edge guidance lighting
- 12 Bi-directional white-yellow for the cation zone lighting
- 12 Bi-directional red green for runway threshold identification lighting
- Eight Omni-directional red for runway threshold lighting
- 10 Uni-directional white REIL for runway end identification lighting

Avlite also supplied a variety of Mounting Assemblies and Fixing Sets from our accessories range to keep the lighting safe and secure

Outcome

Avlite has helped make Lukla Airport safer by providing quality lighting to enable aviators to remain safe around the tourist hotspot.

Avlite's aviation lights have a small form factor, are durable and have low power consumption. The solution includes the AV-426 which includes RF operation, making it easy to turn the system on. It is the optimum solution to this unique requirement set.

Contact Us!

Avlite's solutions are easy-to-install and scalable. We have a solution for every budget.

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