NEW VISION FOR NIGHT LIGHTS

Steamboat is showcasing new lighting technology that may make night operations more common.

BY DAVE ZOOK

When the lifts stop spinning at around four, the customer base generally winds down not long after. Unless the resort has a high-profile nightlife draw at the base area, that is. Night skiing is one channel to try and retain some of the business that heads home, as many local areas in the Midwest and East know.

Still, night skiing and riding offers myriad challenges, particularly at destination resorts. The lighting systems that are traditionally used by ski resorts are criticized for producing flat light, artificial colors, and harsh glares. Add light pollution concerns and high energy costs to the list, and it's easy to see why more destination resorts haven't moved to install lights from base to summit.

Steamboat, Colo., however, is installing a special lighting system that aims to counter all these downsides, and perhaps help usher in a new dynamic for night skiing.

Doug Allen, VP of mountain operations at Steamboat, had never been overly impressed with traditional lights. "A lot of the traditional systems are like a parking lot at a baseball game, where you don't know if the car you're standing next to is blue or red. We wanted to give our guests the best lighting experience around," says Allen.

To try and accomplish that, Steamboat contacted Ultra-Tech Lighting, a company that specializes in magnetic induction lighting (MIL), and is using a model specifically designed for snow illumination, called Snow-Bright lights. These offer efficient lighting, excellent contrast on the snow, and significantly reduced light pollution.

That's not just a marketing boast. "The lights provide a very realistic and bright skiing surface," says Karl Kullberg, mountain manager for Mt. Peter, N.Y., one of the first resorts to use the lights, which it installed for the 2012-13 season. "There are many pros and not really any cons as I see it." He started with about ten lights, and ordered more over the summer.

STEAMBOAT'S NIGHT VISION

Steamboat was sufficiently impressed that it's spending about $1 million on its installation. The plan includes lighting about five trails off the Christie Peak lift on the lower mountain, comprising about 1,100 feet of vertical, and using almost 400 lights. The lighted area will also include the Lil' Rodeo terrain park. The mountain will offer lessons and rentals at night, as well as retail and dining options, and it also expects to host special events under the lights.

The resort is looking for a new spin on the established concept of skiing at night. "We want to make the ski vacation a more viable option for our regular markets that require significant travel. We want someone in Chicago to be at work thinking about skiing, and be able to fly out that day and be on the hill making turns at night for a great start to their weekend," says Allen.

"The kids can take some runs while mom and dad have a drink at the base lodge, or of course ski themselves, and we can offer more useful hours for our local clientele," he adds.

With those aims in mind, the night skiing is slated to operate from 5:30 until 8:30, Friday through Sunday. (Steamboat anticipates shifting the time to 6:00 until 9:00 during the spring, once daylight savings time kicks in.) That adds an extra nine hours of business per week, with special events throughout the season that could add to that. The cost for night access will be a $79 upgrade after Dec. 31 for season passholders, and $29 for a single adult night ticket.

A HIGH-TECH SOLUTION

While the upfront cost is higher for MIL lights than traditional systems, Steamboat believes the superior skiing experience and long-term benefits offset the initial cost. Energy savings revolve around the lights' longer life and lower energy use.

MIL lights don't have the filaments or electrodes that traditionally pass through the "lamp envelope" (the glass) in order to bring the electrical current to its interior. MIL systems have a sealed lamp, and current is transferred to the interior via a magnetic field that is generated by inductors external to the lamp.

This boosts the bulb's life. The bulbs for the Steamboat project are rated to last 100,000 hours. Conventional systems that use either metal halide or high-pressure sodium systems are estimated to last 10,000 hours and 1,500 to 3,000 hours, respectively, according to Philip Gotthelf, managing director for Ultra-Tech. The

100,000 hour rating equates to more than 11 years of light in continual, 24/7 use.

The electricity usage for Snow-Bright lights is about 1/3 that of conventional installations—about 300 watts per lamp, versus around 1,000 watts for a traditional lamp, according to Gotthelf. Additionally, the lights are at nearly 100 percent brightness from the instant they are turned on, unlike traditional night lighting systems, which need time to warm up and cool down. This flexibility helps eliminate the type of snag experienced at the 2013 Super Bowl, where the stadium sat in darkness for 40 minutes before it was safe to turn the lights back on.

But that utility isn't worth much unless the guest experience is similarly enhanced. Guests aren't thinking about electrodes or wattage. They want to see the snow, feel safe, and have fun for a few hours after it gets dark. In terms of the actual on-snow experience, Allen, Gotthelf, and Kullberg all agree that the lights provide superior contrast and brightness on the snow, and believe it is the closest they have seen to a true representation of natural light.

That stems from the light being adaptable to the wide variety of moisture content in snow and the additional nuances of snow's chemistry, Gotthelf says. When the light bounces off the snow crystals, it gives the surface a glowing effect, but without the harsh light from the fixture, he says. Kullberg recalls initially thinking the slopes at Mt. Peter were too dark when he saw the system up and running. But upon skiing it, he found the definition and clarity to be superb.

"The lights are designed by skiers, for skiers, and there is simply nothing out there designed for the pure white crystalline surface that is snow," says Gotthelf—who, along with his wife and two kids, are all ski instructors.

For Steamboat, the installation of the Christie Peak chairlift in 2007 on the lower mountain spurred the lighting decision. "The Christie Peak lift provided a great atmosphere for night skiing. The associated base area activities and services were growing, and the terrain is conducive to the family," says Allen, adding that "most mountains eventually look for a way to extend business hours, and this became a way to do that."

Left: A snowcat was fitted with a bucket for installation and maintenance. Right: A close-up of the bulb.

To turn that vision into reality, construction began on Sept. 1, and was projected at press time to wrap up by the Christmas holidays. Five feet of snow during the first two weeks of October posed challenges to the construction, but Allen said the project was still on track.

The work itself was done by a combination of Steamboat's own crews and outside contractors, including Nordic Excavating and Current Electric. The crews installed 87 light towers and dug trenches for the power lines. To aid in the installation, a snowcat was outfitted with a crane, bucket, and lift. These will also be used for maintenance and bulb replacement, whenever that may occur.

OVERCOMING OPPOSITION

The issue of light pollution was a major consideration in Steamboat's decision to move into night skiing operations, and was the cause of some opposition. "As Steamboat grew, so did the facilities and the condominiums at the base of the mountain. The current system aims to light the slope and only the slope, so the light won't spill out over the entire base area and cause residents to be negatively affected, " says Allen.

Despite this assurance and the more precise light dispersion of MIL, concern from residents has been voiced about light pollution. The associated noise from increased evening business was also an issue. A local attorney spoke in opposition to the plan at a summer council meeting, and several residents asked the council to reject the plan.

To address these concerns and appease the opposition, Steamboat lowered the height of the light towers closest to residences from 30 to 25 feet. The resort will also hold a forum in June of 2014 to encourage feedback and gather opinions about the system. Steamboat hopes that by that date, residents will have recognized that the new technology is less disruptive than they thought.

Another flash point for opposition to the night lights is that they contain mercury, a red flag for the environmentally aware. Gotthelf responds that the mercury is in solid form, and therefore collectable in case of accidental breakage, as well as recyclable at the end of the bulb's life.

For all that, the project received approval, and Steamboat is forging ahead with its night-skiing experiment. Assuming it's as successful as the resort expects, the use of MIL lights opens a window for other resorts to examine how the customer and community base might respond to this new technology. With more widespread adoption, we could all be soon making safe and enjoyable turns under the stars.

RESOURCES

Here are three companies that specialize in lights for resorts:

- **Reliable Racing Supply, Inc.**
  www.reliableracing.com
  1-800-223-4448
- **Ultra-Tech Lighting LLC**
  www.ultratechlighting.com
  (201) 784-1233, ext 100