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[Glow in the Dark Silicone Keypad for an Animal Call Device](#) – Case Study



Overview: A company that manufactures hunting and outdoor sport electronics reached out to ISL Products to improve one of their current keypads. The customer specializes in animal game call devices, used for hunting. These game calls are used both recreationally and serve as practical tools for ranchers and farmers. The customer was previously using a standard backlit keypad.

Challenge: The previous keypad used backlighting, which wasn't efficient and drew too much power from the device's batteries. We needed to create a glow in the dark solution that didn't require backlighting. Our keypad luminosity needed to have a specific decay time as well, in order to be used for extended periods of time at night. The customer also wanted multiple glowing colors.

In addition to the luminosity requirements, there was also an ergonomics factor. The end user of this device is often wearing gloves. We needed to make sure that even with gloves on, the user was able to successfully push the desired button on the key pad.

Solution: ISL created a silicone glow in the dark keypad by the means of photoluminescence. At first, the customer was skeptical about this idea due to the fact that they had specific glow time requirements. We were able to get the glow time to surpass the customer's request, without the use of backlighting.

We were able to also meet the customer's color requirements. All three colors on this keypad glow to the customer's desired specification. We are capable of offering almost any color combination on our keypads.

Glow in the Dark Silicone Keypad

In order to meet the ergonomic requirements, we added carbon pills underneath each button to ensure precise contact with the PCB sub-straight below. We also added a secondary silicone overcoat to provide a more durable finish. Our solution has a 100K life cycle.

We created the tooling needed and currently manufacture the keypad for the customer in high volumes.

In the end, we created a solution that was energy efficient and very user friendly. The game calls these keypads are used for continue to be the customer's top seller.