SharpDot™ Reticle LED

Key features

- RCLED technology
- High optical efficiency for long battery life
- Matte black design minimizing reflections
- Red and green reticles
- ROHS compliant
- Many options available:
  - Custom dot sizes
  - Custom reticle geometries
  - Assembly on Flex PCB

Ideal for

- Red Dot sights
- Green Dot sights
- Reflex sights

Overview

At Excelitas®, we focus on supplying the very best Point Source LEDs and Reticles for our customers' applications. We provide Point Source and Reticles LEDs in various red and true green colors with standard and custom sizes.

Excelitas's RCLED technology is optimized for energy efficiency so you can extend your battery life beyond typical RCLEDs. The emission pattern from our RCLED is very narrow, minimizing stray light and allowing for a well-defined and uniform dot. The SharpDot Reticle LED can operate at very low currents, ideal for night vision applications. Moreover, our specially designed black encapsulation also helps minimize unwanted reflections.

While all Reticle LED designs need to be robust, durable and energy efficient, we recognize that every red dot application is different, and each customer has unique requirements. Whether your goal is reducing power consumption, reducing stray light, meeting night vision low current operation, special colors, adhering to extreme elements— or all of the above—we specialize in customer specific designs for your most demanding applications.

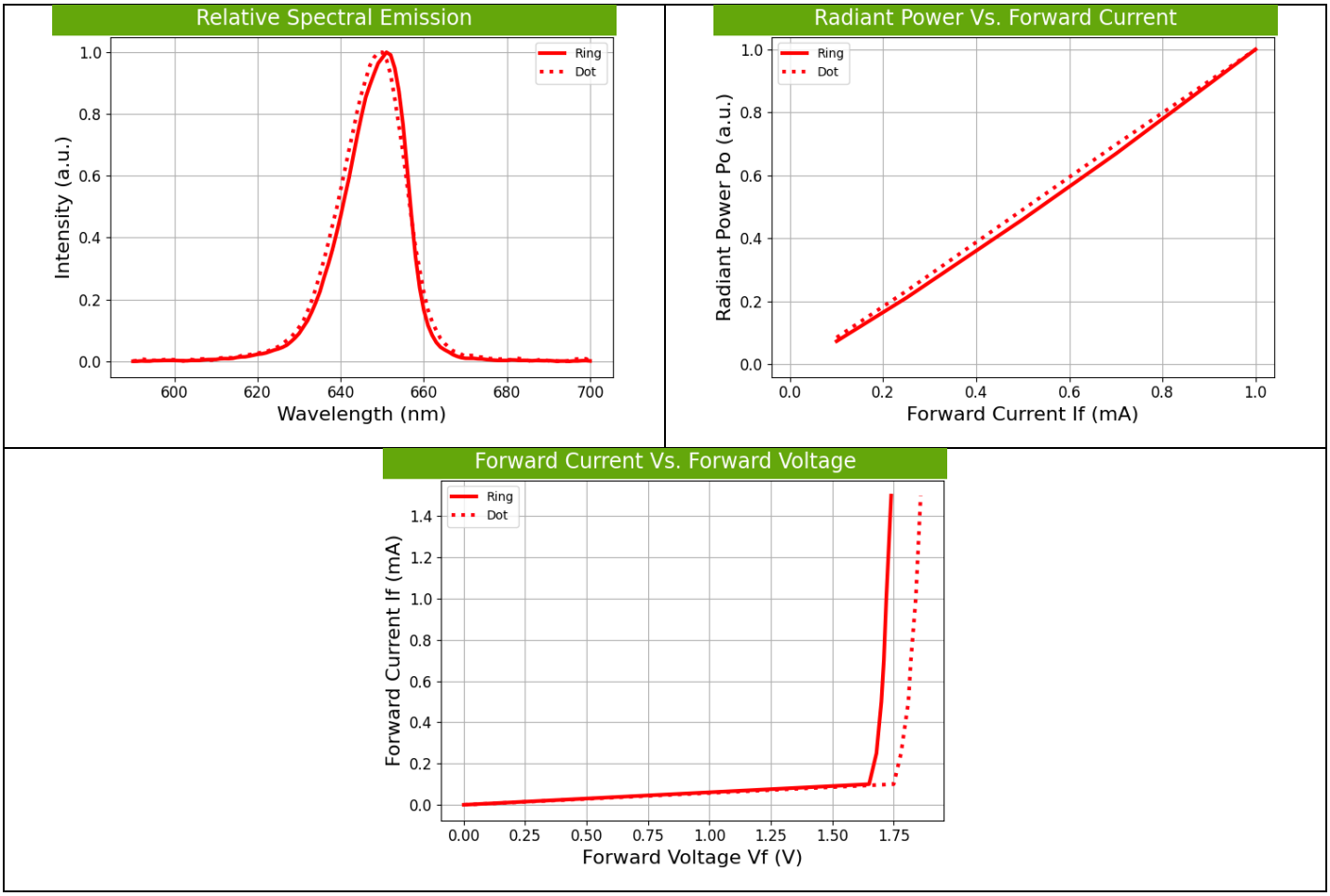
Excelitas' SharpDot Reticles are available in custom sizes if the current size does not fit your application. Please talk with our application engineers for any special requirements or sizes you may have.

Red Reticle

Specifications*

Parameter	Symbol	Unit	condition	Min	Typical	Max
Dot diameter	Ø dot	µm	-	-	13	-
Ring diameter	Ø ring	µm	-	-	440	-
Ring width	W ring	µm	-	-	7	-
Radiant flux dot	Po	µW	I=1mA	-	7	-
Radiant flux ring	Po	µW	I=1mA	-	15	-
Peak wavelength	λp	nm	I=3mA	630	650	670
Forward voltage dot	V_f	V	I=1mA	-	1.8	-
Forward voltage ring	V_f	V	I=1mA	-	1.7	-

*Typical values shown. Other geometries are available upon request.

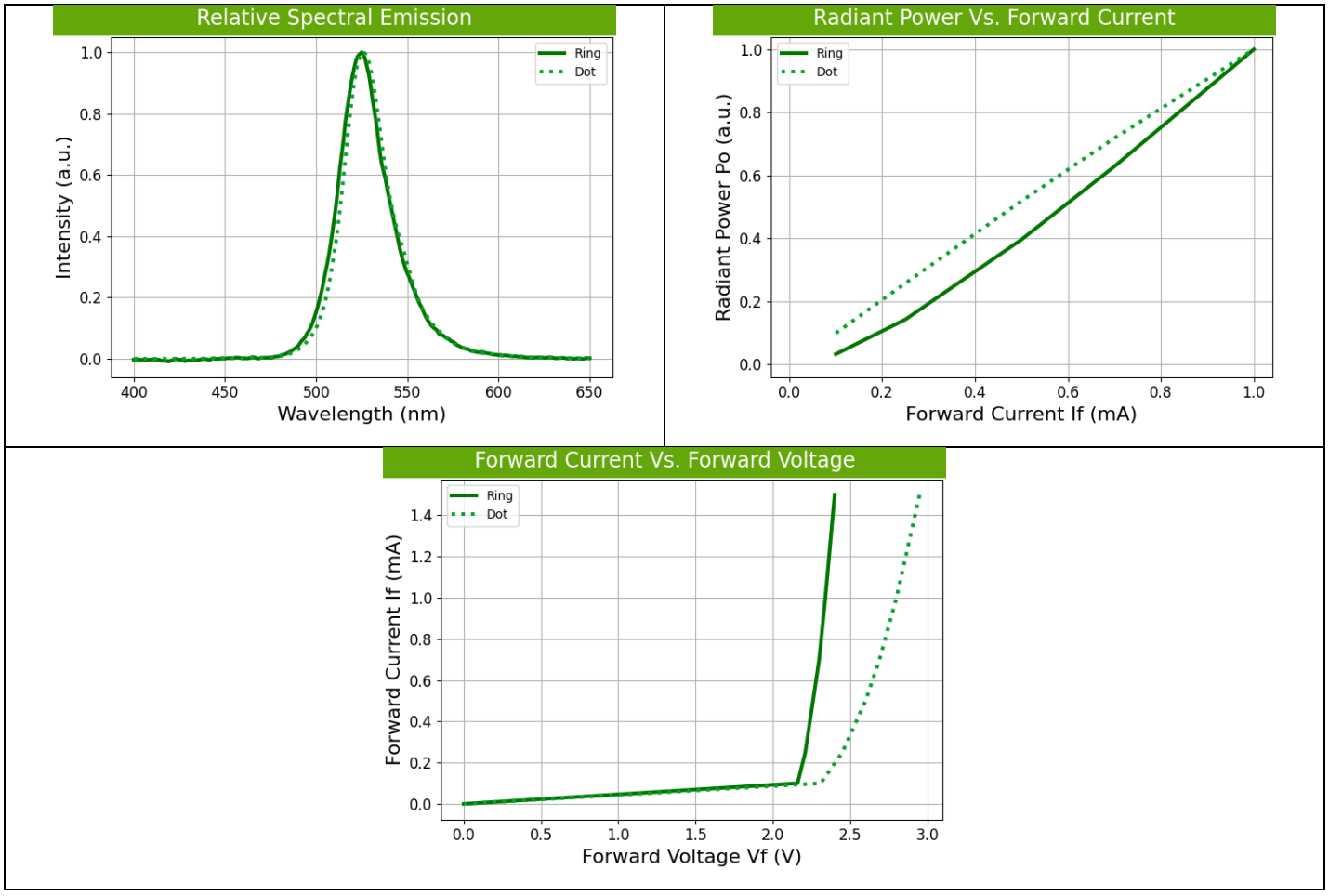


True Green Reticle

Specifications*

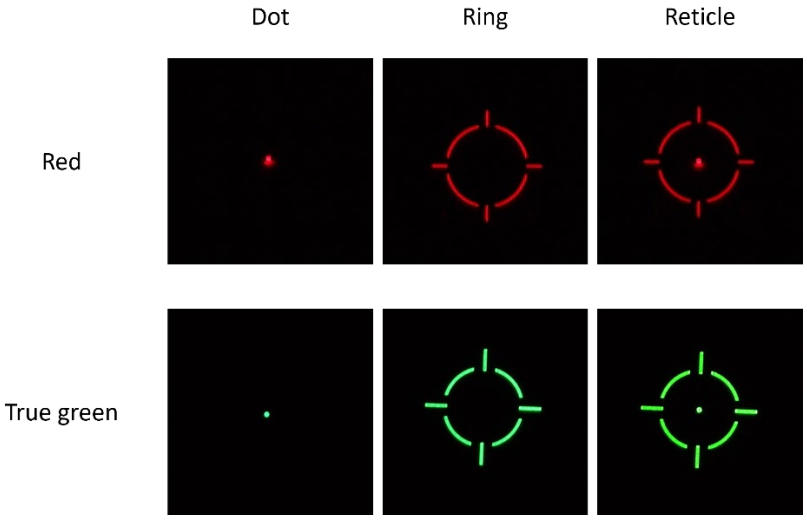
Parameter	Symbol	Unit	condition	Min	Typical	Max
Dot diameter	Ø dot	µm	-	-	25	-
Ring diameter	Ø Ring	µm	-	-	415	-
Ring width	W Ring	µm	-	-	15	-
Radiant flux dot	Po	µW	I=1mA	-	7	-
Radiant flux Ring	Po	µW	I=1mA	-	20	-
Peak wavelength	λp	nm	I=3mA	520	525	530
Forward voltage dot	V_f	V	I=1mA	-	2.8	-
Forward voltage ring	V_f	V	I=1mA	-	2.3	-

*Typical values shown. Other geometries are available upon request.

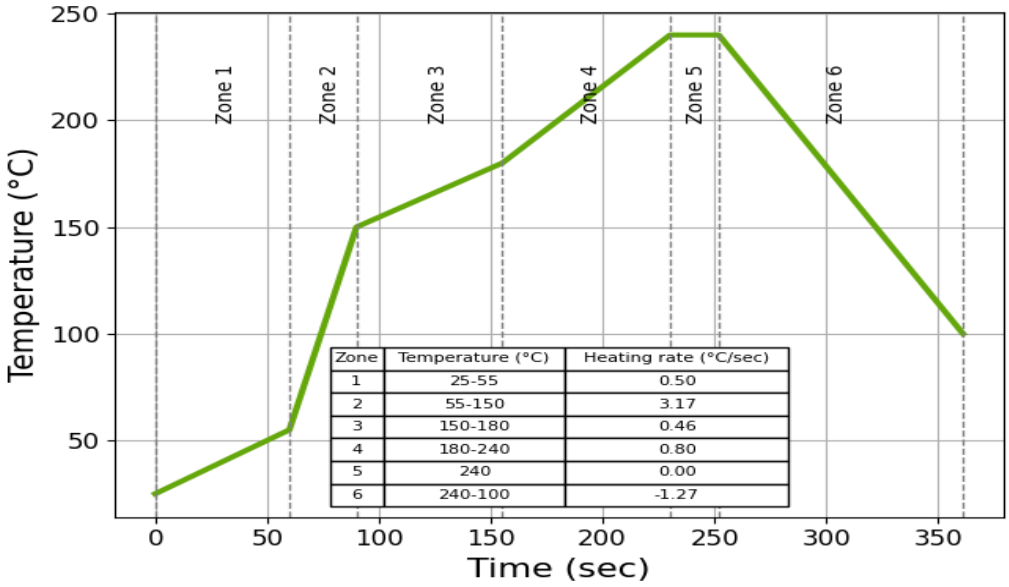


Operation modus of reticle devices

For all reticle devices, (red and green), the dot and the ring can be operated individually.

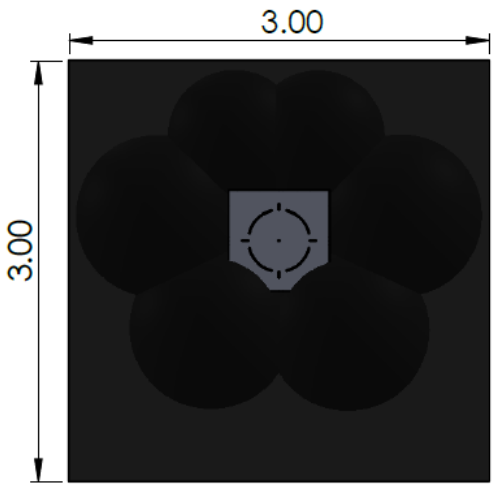


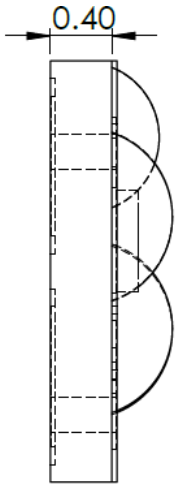
Reflow profile

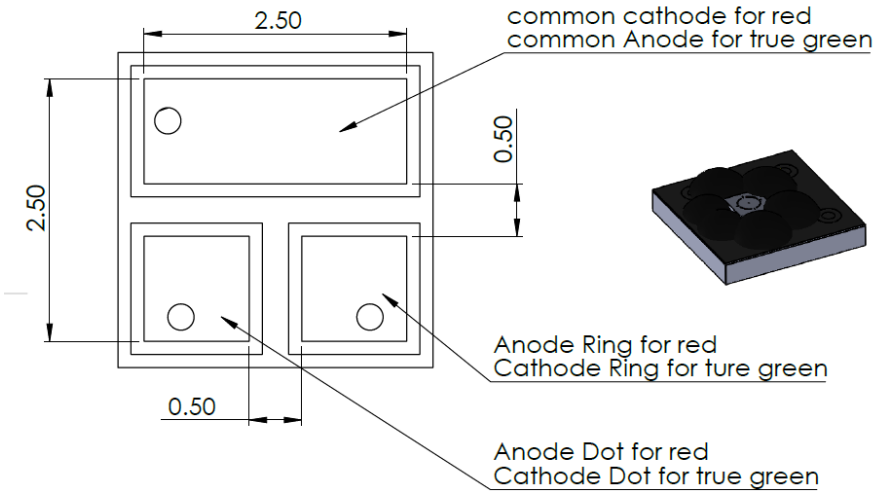


Zone	Temperature (°C)	Heating rate (°C/sec)
1	25-55	0.50
2	55-150	3.17
3	150-180	0.46
4	180-240	0.80
5	240	0.00
6	240-100	-1.27

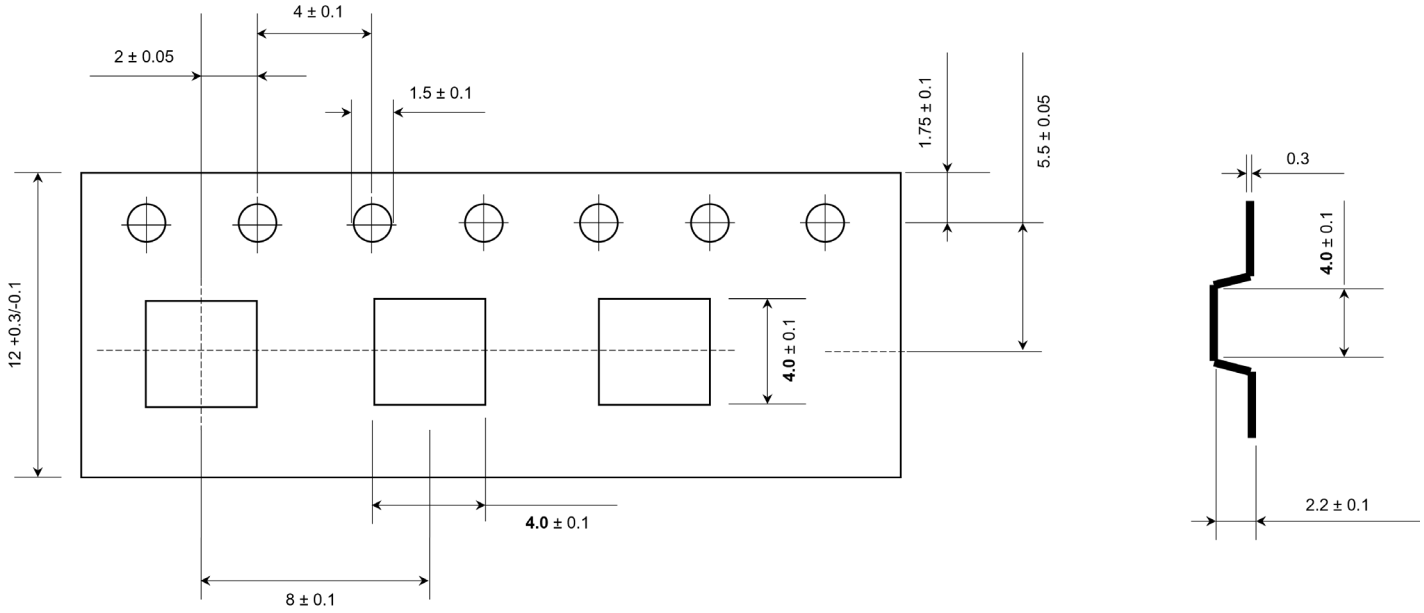
Mechanical Outline

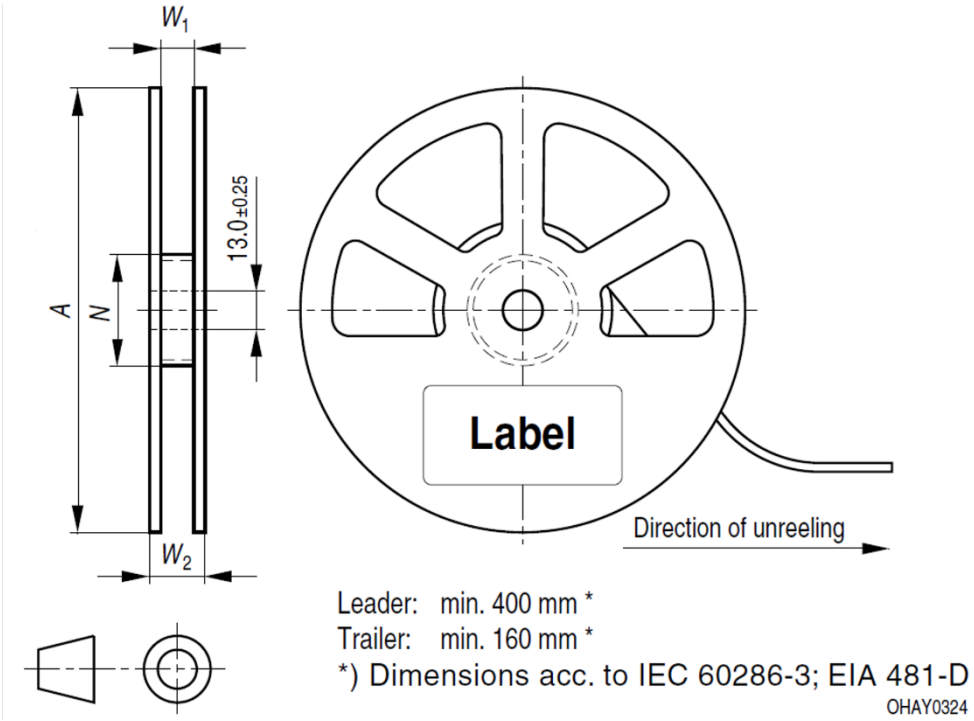






Packaging


4 ± 0.1
2 ± 0.05
1.5 ± 0.1
1.75 ± 0.1
5.5 ± 0.05
12 +0.3/-0.1
4.0 ± 0.1
4.0 ± 0.1
8 ± 0.1
0.3
4.0 ± 0.1
2.2 ± 0.1


W1
13.0±0.25
A
N
W2
Label
Direction of unreeling
Leader: min. 400 mm *
Trailer: min. 160 mm *
*) Dimensions acc. to IEC 60286-3; EIA 481-D
OHAY0324

Part Numbers

Color/Wavelength	Reticle Source Size	Part Number
Red 650nm	440 µm	4303-355-000-31
Green 525nm	415 µm	4303-355-000-32

About Excelitas

Excelitas is a leading provider of advanced, life-enriching technologies that make a difference, serving global market leaders in the life sciences, advanced industrial, next-generation semiconductor and avionics end markets. Headquartered in Pittsburgh, PA, USA, Excelitas is an essential partner in the design, development and manufacture of advanced technologies, offering leading-edge innovation in sensing, detection, imaging, optics and specialty illumination for customers worldwide.

Excelitas is at the forefront of addressing many of the relevant megatrends impacting the world today, including precision medicine, industrial automation, artificial intelligence, and connected devices (IoT).