

# Innovation at the Speed of Relevance

Exploring the elements of the ELCAN Specter® DNA



Raytheon ELCAN Optical Technologies' family of ELCAN Specter® sights. ELCAN Specter sights are known for the crystal-clear optics, durability, reliable performance and extended eye relief – this is the “ELCAN Specter DNA”.

**SoldierMod caught up with Dan Pettry, Product Manager for the ELCAN Specter® family of optical weapon sights.**

Raytheon ELCAN has been designing and manufacturing high precision optical systems for the defence industry for more than 60 years. This expertise was applied to man portable systems with the design and development of the C79 tritium-illuminated magnified weapon sight more than 30 years ago. The ruggedness and reliability of the line was established here, with this sight still deployed today.

Over the years, Raytheon ELCAN has developed additional optical weapon sights that now form the cross-

mission family of ELCAN Specter sights. The Specter design team continues to innovate at the speed of relevance to meet operational challenges for allied forces around the globe.

**Q: Raytheon merged with United Technologies last month?**

**A:** Yes, even with the unprecedented situation we find ourselves in with the global pandemic, this has been an exciting time with the merger of legacy Raytheon and UTC. Raytheon ELCAN Optical Technologies is now part of Raytheon Technologies ([www.rtx.com](http://www.rtx.com)) – a global aerospace and defense leader with over 195,000 employees, 60,000

engineers and over 40,000 patents. Raytheon ELCAN, as part of the new Raytheon Technologies, will continue to help customers solve challenges with high precision optical solutions.

**Q: Dan, there have been quite a few improvements and changes to the ELCAN Specter family of sights over the past months, could you go through these?**

**A:** Sure. ELCAN sights are known for the crystal-clear optics, durability, reliable performance and extended eye relief – this is the “ELCAN Specter DNA”. We’ve leveraged this heritage and added to our line of sights with disruptive technology that optimizes human interactions to provide increased reliability, lethality and mission effectiveness.

Our focus has been on adaptation to enable allied forces to gain and maintain the competitive advantage in modern warfare.

We have adapted the ELCAN Specter DR dual role sight for use on light and medium machine guns. You won’t initially see the changes to the sight, not until you look through it. The MG (machine gun) variants include custom reticles designed to increase the maximum effectiveness of machine guns on both vehicle mounted and man portable platforms allowing gunners to use them for both long-range precision fire and close quarters engagement.

The ELCAN Specter DFCS digital fire control sight for small arms significantly improves shooter precision,

accuracy, lethality and probability of first round on target by incorporating a ballistic compensated, disturbed targeting reticle and integrated digital micro-display. The differentiator is the ease of use despite the integration of advanced technology. This development format has enabled our design team to provide customized prototypes to allied militaries around the world. Like all ELCAN Specter sights, the ELCAN Specter DFCS sight is Canadian designed and developed technology and is ITAR free.

**Q: You mentioned several new sights, could we look at these and the market need that drove their release?**

**A:** Conflict is more complex than at any time in history. Operators and commanders need reliable, actionable information quickly and they need reliable solutions across the battlefield.

**Specter DR for machine guns:** We had to choose between a reflex sight or magnification when I was deployed. I remember lots of times I couldn’t see at a distance. I had to borrow someone else’s magnified optic and then engage with my sight. I wanted to be quicker and more effective up close – that’s the bigger threat. Now, gunners don’t have to choose between a magnified optic and a close quarters’ reflex sight.

The main driver for our team to design the MG variants of the Specter DR sights, was the knowledge that troops



*The ELCAN Specter® DFCS digital fire control sight.*

- ▶ were taking the Specter DR's that were designed for M4s and SCAR-17s and mounting them on M249s and M240s. The ELCAN Specter DR dual role military weapon sight now offers a lightweight solution with both the magnified optic for long-range precision identification and the close quarters' reflex sight with a reticle custom designed for machine guns. Both the 1-4x and 1.5-6x are available with 5.56, 7.62 and .50 cal reticles for both mounted and dismounted platforms.

**ELCAN Specter DFCS:** Like the ELCAN Specter DR dual field-of-view sight integrated a magnified sight for long-range precision acquisition and engagement and a CQB (close quarters battle) capability in one rugged, user-friendly package, the ELCAN Specter DFCS provides a next generation integration of advanced technologies. The DFCS sight combines an 8x direct view zoom optic, ballistic compensated disturbed reticle and boresighted laser range finder into a single rugged, user-friendly package with ELCAN Specter DNA built right in. The ELCAN Specter sights now offer magnification options at 4x, 6x and now 8x – extending the range of engagement and ability to range targets out to 1000m, providing more ruggedized battle proven options to meet unpredictable mission requirements.

**Reflex sights:** Close quarters sights allow the shooter to maintain both eyes open and optimize situational awareness. The bright LED red dot draws the shooter's eye to the point of aim for quick engagement in unpredictable environments. The difference is the ELCAN Specter DNA – over 160 years of high precision optical expertise. The high efficiency broadband coatings provide unprecedented optical clarity, brightness and low-light optical performance. The cross-mission expertise makes these sights rugged and reliable to perform when it matters most.

**Q: Within these new additions, you mentioned several for machine guns. How will these benefit the modern war fighter?**

**A:** The biggest advantage is that putting optics on machine guns will allow the gunner to be more effective and safer throughout the full spectrum of target identification and engagement. The machine gun is a squad's most lethal weapon system whether moving on the assault or providing support by fire. The ability to transition between 1x and magnified fields of view provides an overmatch advantage.

Magnification allows the gunner to put the first burst on target rather than sighting from splash. This is more accurate and is less likely to expose the gunner's position. The 1x magnification improves situational awareness while maintaining the ability to engage accurately.

The use of optics on machine guns is becoming more prevalent because it provides several benefits to the gunners, both mounted and dismounted:

- Durability
- Situational awareness
- Increased accuracy
- Increased chance of getting first shot on target – higher lethality and survivability
- Reduced ammunition use and
- Reduced training time.

The ELCAN Specter family of sights offer both the dual role sights with custom reticles for light and medium machine guns and the ELCAN Specter HR heavy reflex sight for mounted platforms.

**Q: Could we discuss the need for reflex sights?**

**A:** Reflex sights provide increased situational awareness and increase close quarters capability. The unlimited eye relief and unlimited eye box allow the user to keep both eyes open while focusing on the target. The ELCAN Specter reflex sights are founded on optics by ELCAN.

The ELCAN Specter HR heavy reflex sight is a sealed, rugged, large window biocular weapon sight that enhances accuracy while significantly reducing target acquisition time – ideal against pop-up threats or targeting from moving platforms – even in low-light conditions.

The ELCAN Specter 1X MRD and 1XL CQS provide rugged, reliable solutions to allow shooters to engage targets effectively in both close quarters and open terrain environments.

**Q: The final question is looking at your digital sight. How has this been improved and will we be looking at future products this year?**

**A:** The modular design of the DFCS sight allows for integration of additional capabilities to meet specific mission requirements like environmental sensors and battlefield networking capabilities. Our product evolution is always working to improve mission performance and enhance our product offering by targeting SWaP-C (size, weight, power consumption and cost) improvements. ■