www.seyond.com



Falcon K1 LiDAR

Falcon is an industry-leading automotive-grade LiDAR developed by Seyond through forward engineering. It can detect objects as far as 500 meters, and dark objects with 10% reflectivity up to 250 meters. Falcon can maximize point density in region of interest (ROI) which is adjustable to focus where it matters most to better track objects on the road. High performance LiDAR with strong environmental adaptability like Falcon is key to safe autonomy and smart transportation.



Features

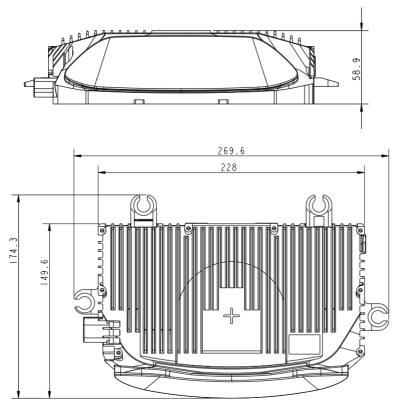
- 500m ultra-long detection range, image-grade ultra-high resolution
- Flexible and adjustable ROI
- 1550nm laser wavelength enables better eye-safety
- Greater environmental adaptability and longer product life
- Mass production of automotive-grade robust products is ready

Specifications

| OPTICAL PERFORMANCE | |
|-------------------------------------|------------------------------------|
| Range (Maximum) | 500 m |
| Range (Minimum) | 1.5 m |
| Detection Range (10% Lambertian | 250 m@100 klx sunlight, POD>90% |
| reflectivity @ 10 Hz) | |
| Detection Range Accuracy | ± 5 cm for Lambertian targets |
| | ± 10 cm for retroreflectors |
| Detection Range Precision (10% | 2 cm (50 m@1sigma) |
| Lambertian reflectivity) | |
| Detection Range Resolution | 0.5 cm |
| Vertical Scanning Lines | 1520 lines/sec |
| FOV in non-ROI (H×V) | 120°×25° |
| FOV in ROI (H×V) | 40°×4.8° |
| Angular Resolution in non-ROI (H×V) | 0.18°×0.24° |
| Angular Resolution in ROI (H×V) | 0.09°×0.08° |
| Angular Accuracy | ± 0.1° |
| Frame Rate | 10 FPS (configurable: 5 to 20 FPS) |
| False Positive Rate | <0.01% @ 100 klx sunlight |
| # of Returns | Up to 2 returns |
| LASER | |
| Laser Safety Class | Class 1 (IEC 60825-1) |
| Laser Wavelength | 1550 nm |
| Beam Divergence (Full Angle) | 0.1° |

| | LIDAR OUTPUT | |
|---|---------------------------------|--|
| Data Rate (Megabits Per Second) 7.385MB/S@1 return CONTROL INTERFACE Interface Interface TCP and HTTP APIs Time Synchronization • IEEE1588 (PTP) • IEEE 802.1as(gPTP) MECHANICAL/ELECTRICAL Power 12V/30W Operating Voltage 9 to 34V DC Connector Proprietary pluggable connector (Power + Automotive Ethernet + CAN) Dimensions (H×W×D) 58.9mm×228mm×149.6mm Weight 1.75 kg Mounting 4×M4×18 screws, located in bushings OPERATIONAL Operating Temperature Operating Temperature -40 °C to +85 °C Storage Temperature -40 °C to +105 °C Ingress Protection IP67(body) IP69K(window) Shock Shock IEC 60068-2-27 Vibration IEC 600825-1 Class 1 eye-safe, RoHS, CE CCE CE Optional Wire Harness 5m cable (power & Ethernet) Optional Wire Harness 5m cable (power & Ethernet) Optional Mount Metal bracket | Data transmission | 1000Base-T1 Ethernet (UDP, TCP) |
| 10.965MB/S@2 returnCONTROL INTERFACEInterfaceTCP and HTTP APIsTime Synchronization• IEEE1588 (PTP) • IEEE 802.1as(gPTP)MECHANICAL/ELECTRICALPower12V/30WOperating Voltage9 to 34V DCConnectorProprietary pluggable connector (Power + Automotive Ethernet + CAN)Dimensions (H×W×D)58.9mm×228mm×149.6mmWeight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC 60068-2-10 class 1 eye-safe, RoHS, CECE FormsSm cable (power & Ethernet)Optional Wire HarnessSm cable (power & Ethernet)Optional MountMetal bracket | Points Per Second | 900,000 Points/sec |
| CONTROL INTERFACE Interface TCP and HTTP APIs Time Synchronization • IEEE1588 (PTP) • IEEE 802.1as(gPTP) MECHANICAL/ELECTRICAL Power 12V/30W Operating Voltage 9 to 34V DC Connector Proprietary pluggable connector (Power + Automotive Ethernet + CAN) Dimensions (H×W×D) 58.9mm×228mm×149.6mm Weight 1.75 kg Mounting 4×M4×18 screws, located in bushings OPERATIONAL Operating Temperature -40 °C to +85 °C Storage Temperature -40 °C to +105 °C Ingress Protection Ingress Protection IP67(body) IP69K(window) Shock Shock IEC 60068-2-27 Vibration IEC 60058-2-64 Compliance IEC 60058-2-64 Compliance IEC 60058-2-64 Optional Wire Harness Sm cable (power & Ethernet) Optional Wire Harness Sm cable (power & Ethernet) Optional Mount Metal bracket | Data Rate (Megabits Per Second) | 7.385MB/S@1 return |
| InterfaceTCP and HTTP APIsTime Synchronization• IEEE1588 (PTP) • IEEE 802.1as(gPTP)MECHANICAL/ELECTRICALPower12V/30WOperating Voltage9 to 34V DCConnectorProprietary pluggable connector (Power + Automotive Ethernet + CAN)Dimensions (H×W>D)58.9mm×228mm×149.6mmWeight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC 60068-2-64ComplianceSm cable (power & Ethernet)Optional Wire HarnessSm cable (power & Ethernet)Optional MountMetal bracket | | 10.965MB/S@2 return |
| Time Synchronization• IEEE1588 (PTP) • IEEE 802.1as(gPTP)MECHANICAL/ELECTRICALPower12V/30WOperating Voltage9 to 34V DCConnectorProprietary pluggable connector (Power + Automotive Ethernet + CAN)Dimensions (H×W×D)58.9mm×228mm×149.6mmWeight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONAL0Operating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC600825-1 Class 1 eye-safe, RoHS, CE CE ScressACCESSORIESSm cable (power & Ethernet)Optional Wire HarnessSm cable (power & Ethernet)Optional MountMetal bracket | CONTROL INTERFACE | |
| • IEEE 802.1as(gPTP) MECHANICAL/ELECTRICAL Power 12V/30W Operating Voltage 9 to 34V DC Connector Proprietary pluggable connector (Power + Automotive Ethernet + CAN) Dimensions (H×W×D) 58.9mm×228mm×149.6mm Weight 1.75 kg Mounting 4×M4×18 screws, located in bushings OPERATIONAL Operating Temperature -40 °C to +85 °C Storage Temperature -40 °C to +105 °C Ingress Protection IP67(body) IP69K(window) Shock IEC 60068-2-27 Vibration IEC 60082-1 Class 1 eye-safe, RoHS, CE Compliance IEC60825-1 Class 1 eye-safe, RoHS, CE CEE Sorties Sm cable (power & Ethernet) Optional Wire Harness Sm cable (power & Ethernet) Optional Mount Metal bracket | Interface | TCP and HTTP APIs |
| MECHANICAL/ELECTRICAL Power 12V/30W Operating Voltage 9 to 34V DC Connector Proprietary pluggable connector (Power + Automotive Ethernet + CAN) Dimensions (H×W×D) 58.9mm×228mm×149.6mm Weight 1.75 kg Mounting 4×M4×18 screws, located in bushings OPERATIONAL Operating Temperature -40 °C to +85 °C Storage Temperature -40 °C to +105 °C Ingress Protection IP67(body) IP69(kwindow) Shock IEC 60068-2-27 Vibration IEC 60082-1 Class 1 eye-safe, RoHS, CE CCESSORIES Sm cable (power & Ethernet) Optional Wire Harness Sm cable (power & Ethernet) Optional Mount Metal bracket | Time Synchronization | • IEEE1588 (PTP) |
| Power12V/30WOperating Voltage9 to 34V DCConnectorProprietary pluggable connector (Power + Automotive Ethernet + CAN)Dimensions (H×W×D)58.9mm×228mm×149.6mmWeight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC 600825-1 Class 1 eye-safe, RoHS, CECCESSORIESSm cable (power & Ethernet)Optional Wire HarnessSm cable (power & Ethernet)Optional MountMetal bracket | | • IEEE 802.1as(gPTP) |
| Operating Voltage9 to 34V DCConnectorProprietary pluggable connector (Power + Automotive Ethernet + CAN)Dimensions (H×W×D)58.9mm×228mm×149.6mmWeight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to ±105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC600825-1 Class 1 eye-safe, RoHS, CE CE ForksACCESSORIES5m cable (power & Ethernet)Optional Wire Harness5m cable (power & Ethernet)Optional MountMetal bracket | MECHANICAL/ELECTRICAL | |
| ConnectorProprietary pluggable connector (Power + Automotive Ethernet + CAN)Dimensions (H×W×D)58.9mm×228mm×149.6mmWeight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC 60068-2-64ComplianceIEC 60068-2-1 Class 1 eye-safe, RoHS, CE CE FormsACCESSORIESSm cable (power & Ethernet)Optional Wire HarnessSm cable (power & Ethernet)Optional MountMetal bracket | Power | 12V/30W |
| + CAN)Dimensions (H×W×D)58.9mm×228mm×149.6mmWeight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONAL0Operating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC60082-1 Class 1 eye-safe, RoHS, CE CE FriesACCESSORIESSm cable (power & Ethernet)Optional Wire HarnessSm cable (power & Ethernet)Optional MountMetal bracket | Operating Voltage | 9 to 34V DC |
| Dimensions (H×W×D)58.9mm×228mm×149.6mmWeight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC 60082-1 Class 1 eye-safe, RoHS, CE C rossACCESSORIESSm cable (power & Ethernet)Optional Wire Harness5m cable (power & Ethernet)Optional MountMetal bracket | Connector | Proprietary pluggable connector (Power + Automotive Ethernet |
| Weight1.75 kgMounting4×M4×18 screws, located in bushingsOPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC60825-1 Class 1 eye-safe, RoHS, CE CE FormsACCESSORIESOptional Wire HarnessOptional Wire Harness5m cable (power & Ethernet)Optional MountMetal bracket | | + CAN) |
| Mounting4×M4×18 screws, located in bushingsOPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to ±105 °CIngress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC60825-1 Class 1 eye-safe, RoHS, CE CE RoHSACCESSORIESSm cable (power & Ethernet)Optional Wire HarnessSm cable (power & Ethernet)Optional MountMetadaptorOptional MountMetal bracket | Dimensions (H×W×D) | 58.9mm×228mm×149.6mm |
| OPERATIONALOperating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body)IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC600825-1 Class 1 eye-safe, RoHS, CEC K RoHSACCESSORIESOptional Wire HarnessSm cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | Weight | 1.75 kg |
| Operating Temperature-40 °C to +85 °CStorage Temperature-40 °C to +105 °CIngress ProtectionIP67(body)Ingress ProtectionIP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC 60068-2-64CE 600825-1 Class 1 eye-safe, RoHS, CECE FormsACCESSORIESOptional Wire Harness5m cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | Mounting | 4×M4×18 screws, located in bushings |
| Storage Temperature -40 °C to +105 °C Ingress Protection IP67(body) IP69K(window) IEC 60068-2-27 Shock IEC 60068-2-64 Compliance IEC 600825-1 Class 1 eye-safe, RoHS, CE CESSORIES CE KOHS Optional Wire Harness 5m cable (power & Ethernet) Optional Converter Metadaptor Optional Mount Metadaptor | OPERATIONAL | |
| Ingress ProtectionIP67(body) IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC60825-1 Class 1 eye-safe, RoHS, CECE SORIESOptional Wire HarnessSm cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | Operating Temperature | -40 °C to +85 °C |
| IP69K(window)ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC60825-1 Class 1 eye-safe, RoHS, CECESSORIESCE SoftOptional Wire Harness5m cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | Storage Temperature | -40 °C to +105 °C |
| ShockIEC 60068-2-27VibrationIEC 60068-2-64ComplianceIEC 600825-1 Class 1 eye-safe, RoHS, CECE SORIESCE SORIESOptional Wire Harness5m cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | Ingress Protection | IP67(body) |
| VibrationIEC 60068-2-64ComplianceIEC60825-1 Class 1 eye-safe, RoHS, CECCESSORIESACCESSORIESOptional Wire Harness5m cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | | IP69K(window) |
| ComplianceIEC60825-1 Class 1 eye-safe, RoHS, CECESSORIESOptional Wire Harness5m cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | Shock | IEC 60068-2-27 |
| ACCESSORIESOptional Wire Harness5m cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | Vibration | IEC 60068-2-64 |
| ACCESSORIES Optional Wire Harness 5m cable (power & Ethernet) Optional Converter Metadaptor Optional Mount Metal bracket | Compliance | IEC60825-1 Class 1 eye-safe, RoHS, CE |
| Optional Wire Harness5m cable (power & Ethernet)Optional ConverterMetadaptorOptional MountMetal bracket | | CE ROHS |
| Optional ConverterMetadaptorOptional MountMetal bracket | ACCESSORIES | 1 |
| Optional Mount Metal bracket | Optional Wire Harness | 5m cable (power & Ethernet) |
| | Optional Converter | Metadaptor |
| SOFTWARE | Optional Mount | Metal bracket |
| | SOFTWARE | |
| Available Drivers ROS/ROS2 | Available Drivers | ROS/ROS2 |

Dimensions (Unit: mm)



*Specifications are subject to change without notice and based on engineering targets. Specs are not guaranteed to have passed full validation at the time of publication.