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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

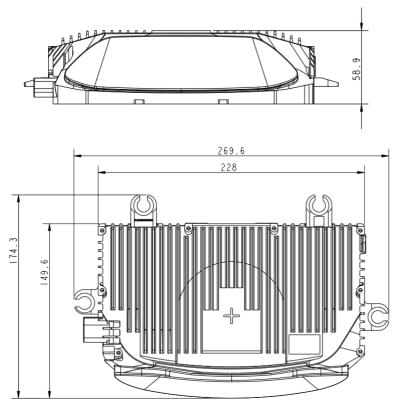
- 500m ultra-long detection range, image-grade ultra-high resolution
- Flexible and adjustable ROI
- 1550nm laser wavelength enables better eye-safety
- Greater environmental adaptability and longer product life
- Mass production of automotive-grade robust products is ready

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	
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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.