

Lizard1 Series Railway Smart Camera Brief

Features

1. Embedded x86 industrial PC
Intel® ATOM™ E3950, 2.0GHz, quad cores
4GB LPDDR4-2400, 64GB eMMC for OS, soldered onboard
64-bit OS: Windows 10 IoT Enterprise
Support gigabit Ethernet, support isolated digital IOs
2. Embedded SONY high-speed global shutter CMOS image sensors
IMX421/2.8MP/174fps, IMX428/7.1MP/51fps, IMX255/8.9MP/51fps
IMX421/2.8MP/371fps, IMX420/7.1MP/172fps coming soon
3. Embedded motorized high-resolution lens
1/1.8" 3.8-16mm motorized 2A lens (motorized zooming and focusing)
1/1.8" 11-40mm motorized 3A lens (motorized zooming, focusing and iris)
1" 16mm/25mm/35mm/50mm 2A lens (motorized zooming and focusing)
4. Embedded 800W white or 500W NIR (850nm) LED strobes flash
5. Three types
Type A: standard
Type B: embedded pantograph flame arc detector
Type C: embedded pantograph flame arc detector and thermal camera
6. Embedded one M.2 slot for SSD
7. Embedded 5G Wi-Fi (802.11ac) with waterproof antenna
8. Embedded electronic dehumidifying for anti-fog on the glass
9. Embedded lightning protection circuit
10. Embedded isolated power module with EN50155 authentication
11. Support three supply voltages: 24VDC/48VDC/110VDC, 70W max
12. IP67 rating
13. Rugged full metal casing, fanless
14. Ready cables with aviation connectors (optional)
15. Wide operation temperature -40°C to +85°C
16. 2-year warranty for vehicle application

Applications

High-speed rail pantograph flame arc detection

High-speed rail power line suspension inspection

Pictures



Figure 1-1 Picture of Type A Profile

Profile

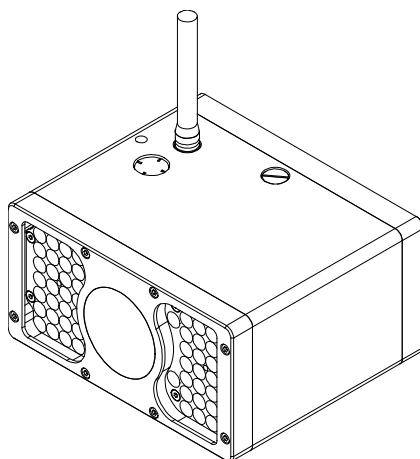


Figure 1-2 Type A Profile

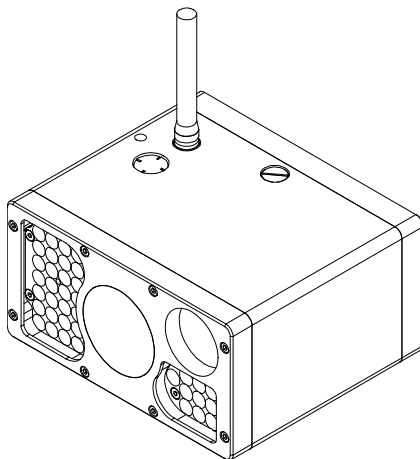


Figure 1-3 Type B Profile

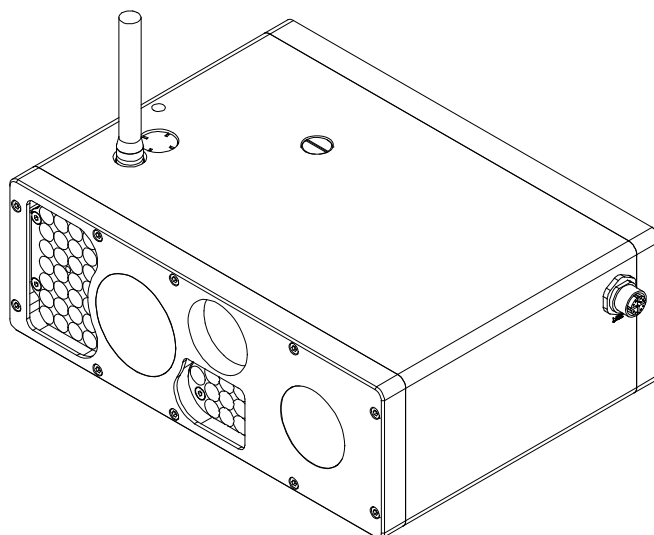


Figure 1-4 Type C Profile

Recommended Part Number

Lizard1 series railway smart cameras have powerful functions and also complex part number designation. For easy selection, the following part numbers are recommended.

Part Number	RSLZ1-21MEB4-A60W68-NM0W5-V4-NN
Description	2.8MP/174fps mono camera with type A IP67 full metal casing, 11-40mm 1/1.8" 3A lens (motorized zooming, focusing and iris control), 68 white (6000K) LEDs, beam angle 60 degrees, no embedded pantograph flame arc detector, no preinstalled SSD, embedded 5G Wi-Fi module with a waterproof antenna. Power supply is 48VDC. Note: IMX421LLJ/2.8MP/371fps version coming soon
Part Number	RSLZ1-70ME12-A60W68-NM0W5-V4-NN
Description	7.1MP/51.4fps mono camera with type A IP67 full metal casing, 12mm 1" 2A lens (motorized zooming, focusing), 68 white (6000K) LEDs, beam angle 60 degrees, no embedded pantograph arc detection, no preinstalled SSD, embedded 5G Wi-Fi module with a waterproof antenna. Power supply is 48VDC.
Part Number	RSLZ1-21METS-AA0W68-NM0W5-V4-NN
Description	2.8MP/174fps mono camera with type A IP67 full metal casing, 3.8-16mm 1/1.8" 2A lens (motorized zooming, focusing), 68 white (6000K) LEDs, beam angle 100 degrees, no embedded pantograph arc detection, no preinstalled SSD, embedded 5G Wi-Fi module with a waterproof antenna. Power supply is 48VDC.

Ordering Information

The underlined option is the recommended option.

R S L Z 1 - 2 1 M E B 4 - A 6 0 W 6 8 - N M 0 W 5 - V 4 - N N
 aaaa b cc d e ff g hh jjj k mm nn pp qq

aaaa	<u>RSLZ</u>	Lizard1 series all-in-one vehicle smart camera
b	generation	
	<u>1</u>	the 1st generation, based on Intel® ATOM™ E3950
cc	sensor type of grabbing camera	
	<u>21</u>	SONY 2.8MP 2/3" global shutter CMOS IMX421LLJ, max 371.8fps
	<u>70</u>	SONY 7.1MP 1.1" global shutter CMOS IMX428LLJ, max 51.4fps
	<u>71</u>	SONY 7.1MP 1.1" global shutter CMOSIMX420LLJ, max 172fps
	<u>82</u>	SONY 8.9MP 1" global shutter CMOS IMX255LLR, max 88.7fps
d	color of grabbing camera	
	<u>M</u>	mono

	S	color
e		filter type of grabbing camera (refer to chapter 6 for details)
	E	No filter
	C	IR-cut filter
ff		lens type of camera
	12	focal length 12mm, 8MP, 1" size, motorized focusing, F1.4
	25	focal length 25mm, 8MP, 1" size, motorized focusing, F1.4
	35	focal length 35mm, 8MP, 1" size, motorized focusing, F1.4
	50	focal length 50mm, 8MP, 1" size, motorized focusing, F1.4
	B4	focal length 11-40mm, 8MP, 1/1.8" size, motorized zooming, focusing and iris control, F1.8
	TS	focal length 3.8-16mm, 8MP, 1/1.8" size, motorized zooming, focusing, F1.5
g		casing type
	A	type A
	B	type B
	C	type C
hh		beam angle of LED flash
	20	20 degrees, recommended for 5-9 meters object distance
	40	40 degrees, recommended for 3-5 meters object distance
	60	60 degrees, recommended for 1-3 meters object distance
	A0	100 degrees, recommended for 0.5-1 meters object distance
jjj		type of LED strobe
	W68	800W (pulsed) white strobe (6000K) for the type without pantograph arc detection
	W50	600W (pulsed) white strobe (6000K) for the type with pantograph arc detection
	N68	500W (pulsed) NIR strobe (850nm), for the type without pantograph arc detection
	N50	375W (pulsed) NIR strobe (850nm), for the type with pantograph arc detection
k		pantograph arc detector
	N	no pantograph flame arc detector
	A	embedded a pantograph flame arc detector
mm		embedded M.2 SSD capacity
	M0	No M.2 SSD (default)
	Mx	xTB M.2 SSD, MQ means 1TB, MH means 1TB, M1 means 1TB, M2 means 2TB
nn		Wi-Fi function
	W5	5G Wi-Fi (802.11ac) function with a waterproof antenna
pp		power supply voltage (inner isolated power module with EN50155 authentication)
	V2	9-36VDC power supply, 24VDC recommended, with isolated power module
	V4	45-50VDC power supply, 48VDC recommended, without isolated power module
	VB	43-160VDC power supply, 10VDC recommended, with isolated power module
qq		special function (optional)
	NN	no special function (default)

Power Port

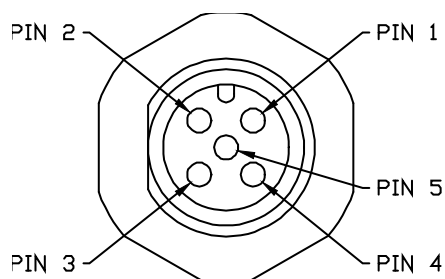


Figure 1-5 Power port of type B and C (M12 5-Pin Male)

Table 1-1 Power port of type B and C

Pin No.	Function	Direction	Wire Color
			Cable P/N: LZ1-M05A-F05A-08P26N-xxx
1	PWRIN+	IN	White/Orange and Orange
2	PWRIN-	IN	White/ Green and Green
3	ISO_IN1	IN	White/Brown
4	ISO_OUT1	OUT	Brown
5	ISO_GND	NA	White/Blue

Ethernet Port

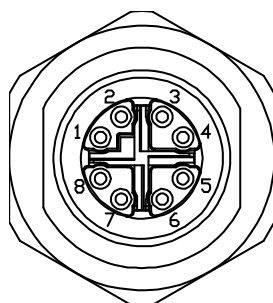


Figure 1-6 Ethernet port (M12 8-Pin Female)

Table 1-5 Ethernet port

Pin No.	Function	Direction	Wire Color
			Cable P/N: RW1-M08X-M08X-08P26N-xxx
1	DATA-P0	IN/OUT	White/Orange
2	DATA-N0	IN/OUT	Orange
3	DATA-P1	IN/OUT	White/Green
4	DATA-N1	IN/OUT	Green
5	DATA-P2	IN/OUT	White/Broun
6	DATA-N2	IN/OUT	Broun
7	DATA-P3	IN/OUT	White/Blue
8	DATA-N3	IN/OUT	Blue

Dimensions

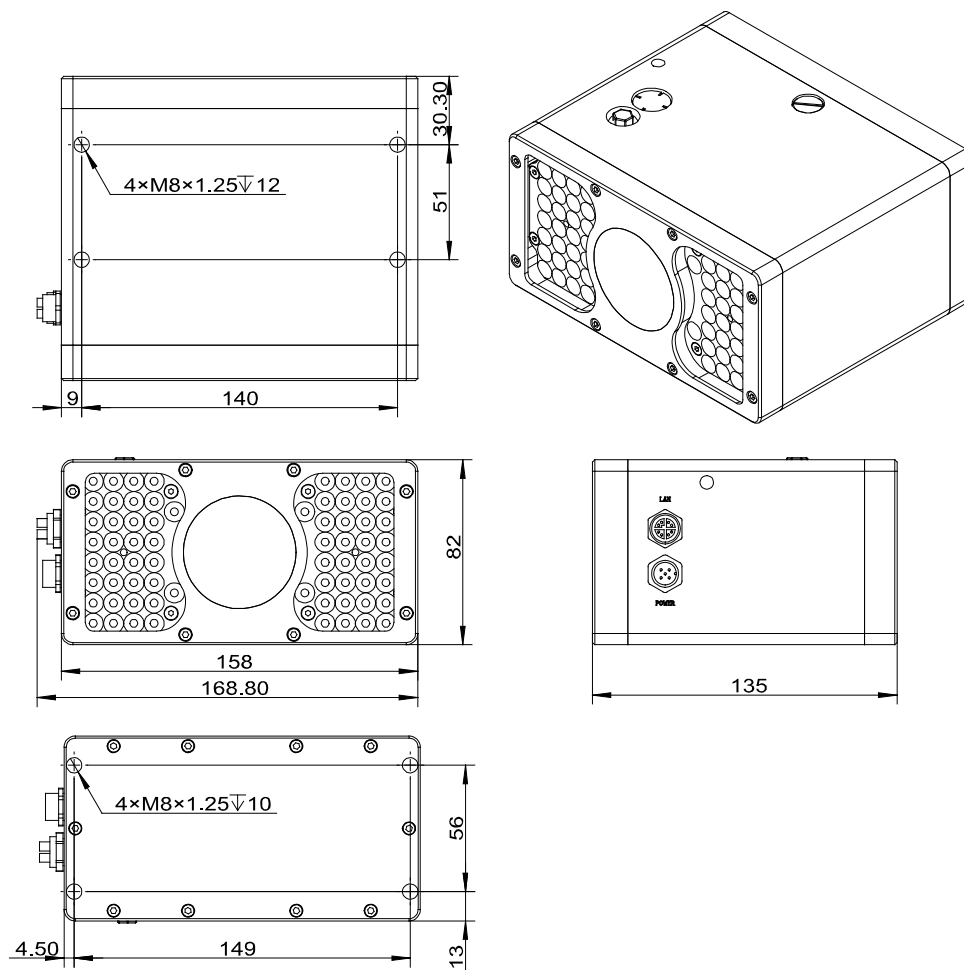


Figure 1-7 Dimensions of Type A and B

Note:

- [1] Unit: mm
- [2] Materials: aluminum alloy with anodizing process
- [3] Color: silver

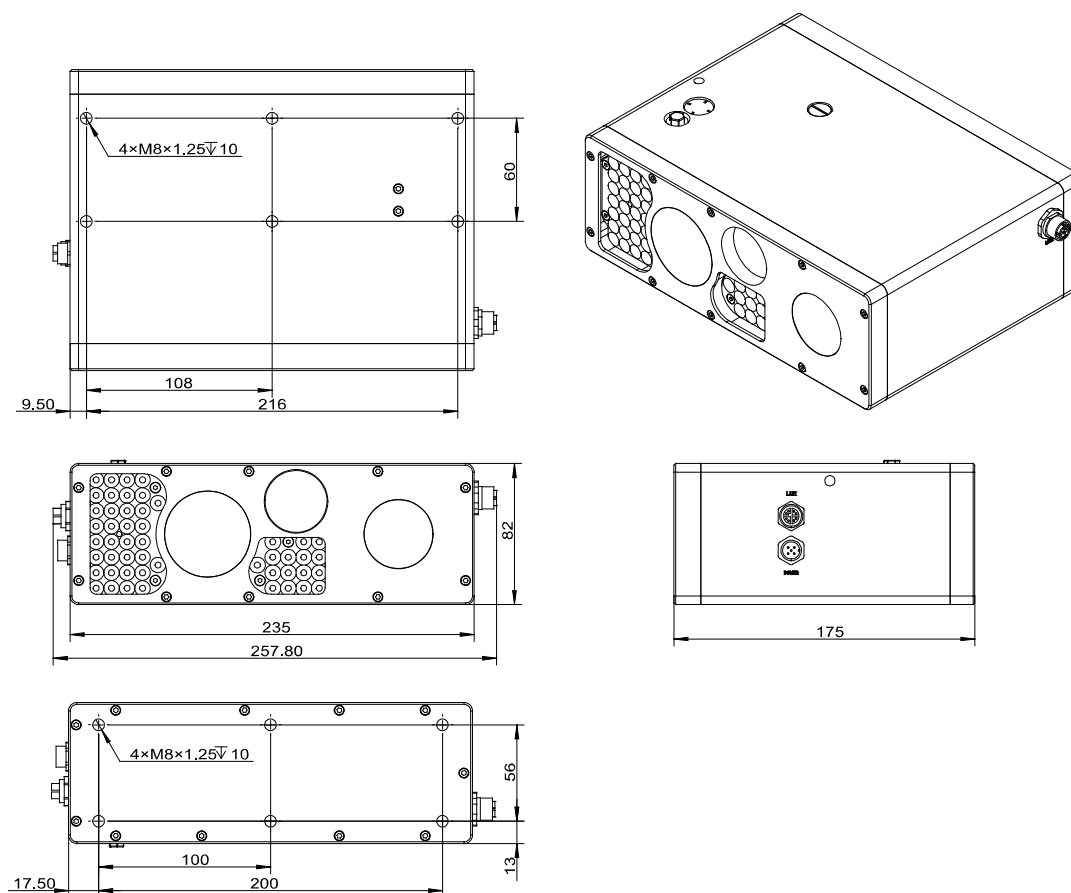


Figure 1-8 Dimensions of Type C

Note:

- [1] Unit: mm
- [2] Materials: aluminum alloy with anodizing process
- [3] Color: silver