

Preliminary Specification

REFERENCE

February 24, 2025

Near infrared Cooled Spectrometer Golden Bullet Series

GB6884

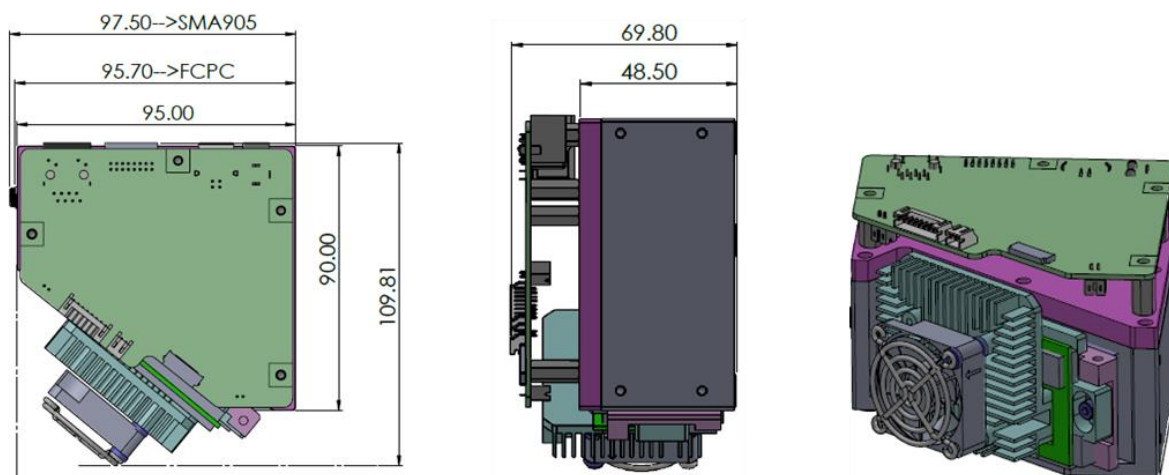
GB6934

PRODUCT SPECIFICATION

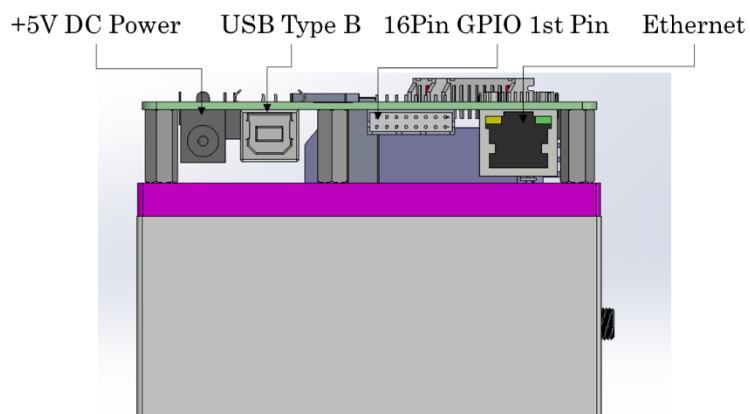
PARAMETER	GB	
	GB6884ES	GB6934ES
Image Sensor	256-pixel InGaAs sensor	
Wavelength Range	Customizable range within 900-1700nm	Customizable range within 900-2200nm
Optical system characteristics	f/#: 4.17, NA: 0.12, Focal Length (R1-R2): 26-25.5 Recommendation: the inlet numerical aperture (NA) of the user's design should be higher than that of the spectrometer	
Slit	50um	
Resolution (average)	5.4nm@ slit 50um (900-1700nm)	7.3nm@slit 50um (1130-2200nm)
Stray Light	<0.2%	
Integration Time	6us~24s	
Dark Noise	<8 @1x gain <10@10x gain <13@20x gain <19@58x gain	<8 @1x gain <10@10x gain <13@20x gain <35@58x gain
SNR(@0 ° C/ -20 ° C)	5000 @1x gain 3000@10x gain 2500@20x gain 1600@58x gain	5000 @1x gain 3000@10x gain 2500@20x gain 1500@58x gain
Dynamic range(@0 ° C/ -20 ° C)	8200 @1x gain 6500@10x gain 5000@20x gain 3400@58x gain	8200 @1x gain 6500@10x gain 5000@20x gain 1800@58x gain
Dimension	109.8(L)*97.5(W)*69.8(H)mm	
Fiber Optic Interface	SMA905, FC/PC	

TEC Cooling		One Stage TEC (Default : 0 ° C at Ambient of 25 ° C)	Two Stage TEC: (Default : -20 ° C at Ambient of 25 ° C)
Power Specification		DC Jack : 2000mA at 5VDC	DC Jack : 2800mA at 5VDC
Data transfer interface		USB2.0 480Mbps & Ethernet 100Mbps	
Environmental requirements	Storage temperature	-30°C to +70°C	
	Operating temperature	0°C to +50°C	
	Relative humidity	0% - 90% (non-condensing)	

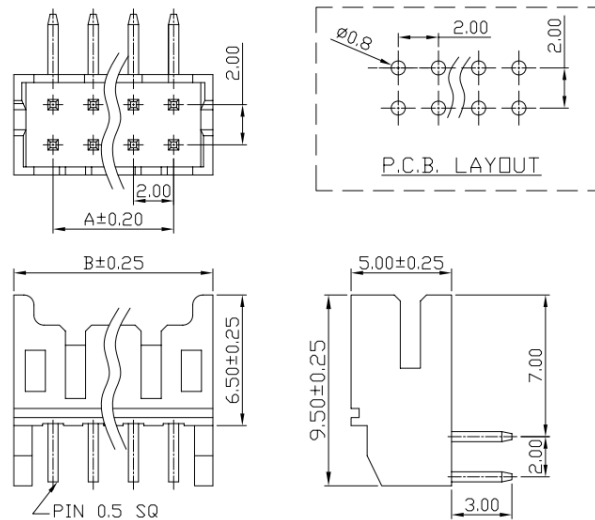
Mechanical Drawing



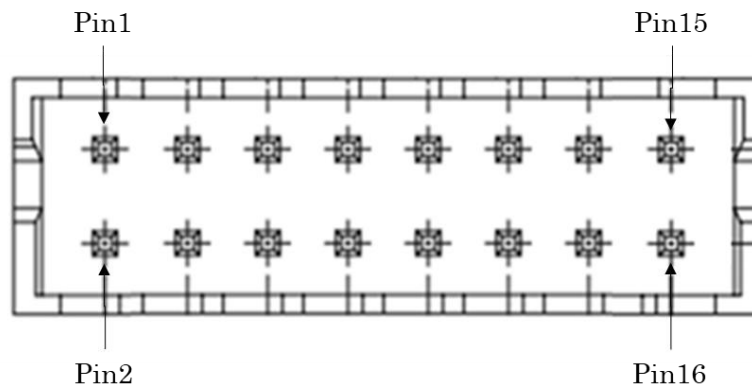
External Ports



GPIO Drawing



PIN CONNECTION



Pin Number	I/O direction	Pin Name	Description
1	Input /Output	5V	5V Power. Connect to DC Jack 5V power input. But it is still recommended to use DC Jack for whole system power input.
2	Input	PWR Reset	Reset the device
3	Output	TX	UART TX. TX is the output from the RISC Spectrometer microcontroller
4	Input	PWM1	Pulse-width modulation
5	Input	RX	UART RX. RX is the input to the RISC Spectrometer microcontroller
6	Input	PWM2	Pulse-width modulation
7	Output	GPO	General purpose output
8	Output	GPO(S1+)	General Purpose Output #1 (Positive Signal)

9	Output	GPO	General purpose output
10	Output	GPO(S1-)	General Purpose Output #1 (Negative Signal)
11	Output	LS_ON	Lamp on
12	Output	GPO(S2+)	General Purpose Output #2 (Positive Signal)
13	Input	Trigger_IN	External trigger in signal
14	Output	GPO(S2-)	General Purpose Output #2 (Negative Signal)
15	GND	GND	Ground
16	GND	GND	Ground

NOTE

This document is a tentative version, and the specification data is for reference only. Please check the latest version of the spec sheet, as it may change in the future.