

Ultra-high-Resolution Spectrometer

ATP3034

Features:

- Built-in xenon lamp synchronized triggering circuit control
- Spectral Range: 200-1100 nm;
- Resolution: 0.07-5nm;
- Optical path structure: M-type;
- Detector: 4096pixels;
- Integration time: 0.1ms-256s;
- Power supply: DC 5V USB;
- ADC bit-depth: 16bits;
- ADC sampling rate: 2MHz;
- Data output port: USB Type-C;
- 30 bins extended interface;

Application

- Plasma lighting measurement
- Water Quality Analysis
- UV smoke analyzer
- LED sorter;
- Color detector
- Micro, fast spectrophotometer;
- Spectral analysis, radiation spectrophotometer, spectrophotometric analysis
- Fluorescence spectrometer;
- Reflectance, Transmittance measurement
- Raman Spectroscopy;

Description:

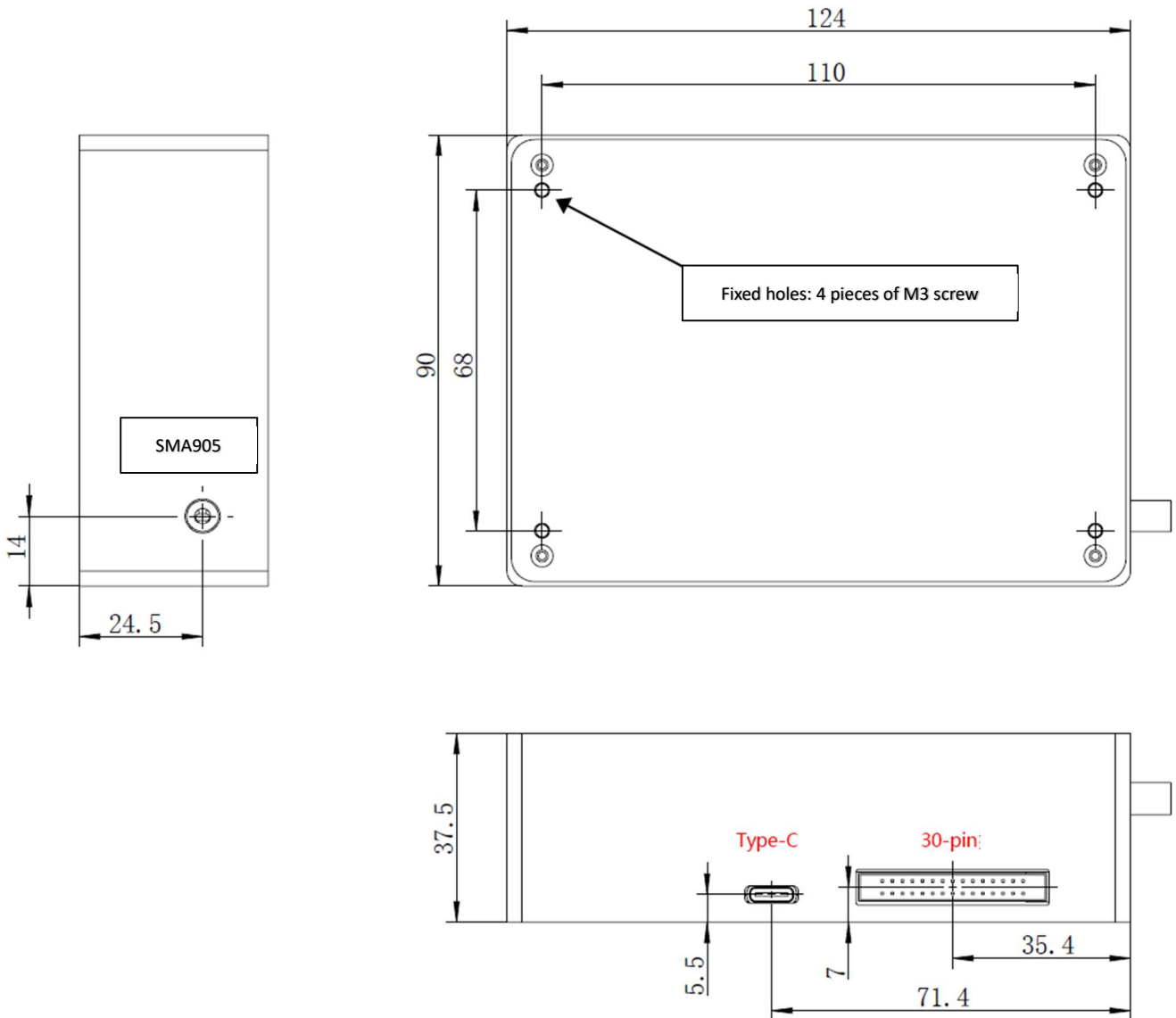
ATP3034 is designed ultra-high-resolution spectrometer, the highest resolution can reach to 0.07nm. And it suits to various application requiring high resolution solution. It employs high reliability, ultra-high speed, low cost, high performance-to-price. It can widely apply to various functions in a wide application.



Specifications

Detector	
Type	Linear array detector
Detectable range	200-1100 nm
Effective pixel	4096
Pixel dimension	7 μ m \times 200 μ m
Sensitivity	1300 V/(lx·s)
Dark noise	13 RMS @ 13 $^{\circ}$ C
Optical Parameter	
Wavelength range	200-1100 nm
Optical resolution	0.07-5 nm
Signal-to-noise	>600:1
Dynamic range	8.5 x 10 ⁷ (system); 2000:1 for a single acquisition
Stray light	<0.05% at 600 nm; <0.09% at 435 nm
Working temperature	-25-50 $^{\circ}$ C
Working humidity	< 90%RH
Optical Configuration	
Optical Design	M-type
Focal Distance	75mm
Incidence slit	50 μ m (25, 100 μ m are optional)
Incident Interface	SMA905 connector
Electrical Parameter	
Integration time	0.1 ms - 256 second
Interfaces	USB Type-C
A/D conversion resolution	16 bit
Supply voltage	DC4.5 to 5.5 V (type @5V)
Operating current	170mA@Typ.
Storage temperature	-30 $^{\circ}$ C to +70 $^{\circ}$ C
Operating temperature	-25-50 $^{\circ}$ C
Physics Parameter	
Dimension	124 \times 90 \times 37.5 mm
weight	0.5kg
Sealing	Anti-sweat

2 Mechanical Diagrams



3 Electrical Pin-out

Table 1 Electrical Characteristics

Parameter	Min	Typ	Max	Unit
Power Supply				
Operating voltage range	4.5	5	5.5	V
Operating current		170		mA
Logic Inputs(3.3V LVTTL, Five-volt tolerant)				
High level input voltage	1.7		3.6	V
Low level input voltage	-0.3		1.0	V
Logic Output(3.3V LVTTL)				
High level output voltage	2.4			V
Low level output voltage			0.4	V

The module is equipped with a 30-pin male angled box header(2x15, 2.00 mm pitch) and Type-C interface.

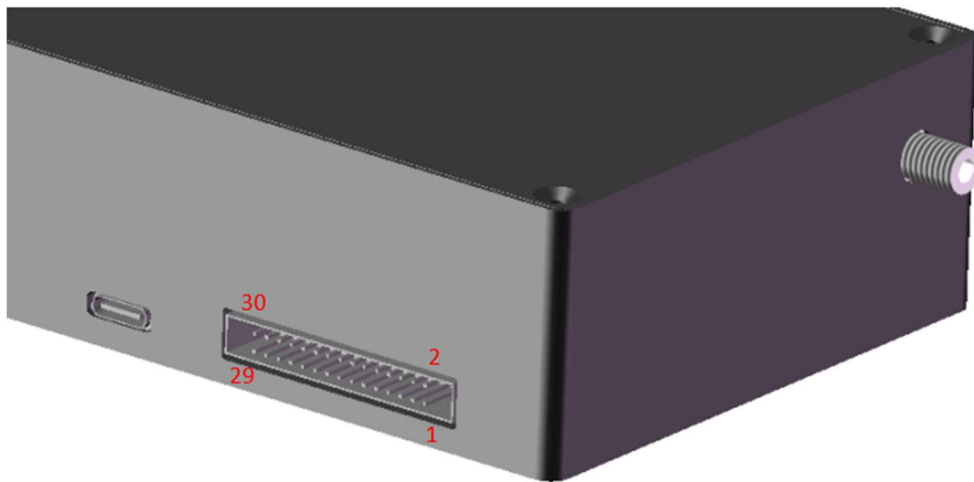


Table 2 Electrical Pin-Out

Pin	Description	I/O	Function Description
1	MCU_RX	/	LVTTL Transmit signal
2	MCU_TX	/	LVTTL Transmit signal
3	GPIO2	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
4	V5_SW	Output	Power Supply, 5V±0.5,
5	Ground	Input /Output	Ground
6	NC		
7	GPIO0	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.

8	NC		
9	GPIO1	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
10	External Trigger In	Input	LVTTL input the trigger signal. Falling edge trigger collection.
11	GPIO3	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
12	NC		
13	GPIO10	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
14	NC		
15	GPIO11	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
16	GPIO4	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
17	NC		
18	GPIO5	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
19	Ground	Input /Output	Ground
20	NC		
21	Ground	Input /Output	Ground
22	GPIO6	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
23	NC		
24	Analog Out (0-5V)	Output	The Analog Out is a 8-bit programmable output voltage with a 0-5 Volt range
25	Lamp Enable	Output	Enable the Lamp Enable Digital Output, LVTTL Logic.
26	GPIO7	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
27	Ground	Input /Output	Ground
28	GPIO8	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.
29	Ground	Input /Output	Ground
30	GPIO9	Input /Output	General Purpose Software Programmable Digital Inputs/Outputs, LVTTL Logic.

4 Order Guide

Order number Rules:

Model	Spectral region		Slit width	
ATP3034	Short wavelength	Long wavelength	Slit width	

For example:

What to buy ATP3034, spectral region: 200-1000nm, slit width is 50 μm , then the order no is:

ATP3034-200-1000-050

Order No	Spectral region	Slit	
ATP3034-200-400-###	200~400	10 μm	
ATP3034-200-850-###	200~850	25 μm	
ATP3034-200-1000-###	200~1000	50 μm	
ATP3034-340-850-###	340~850	100 μm	
ATP3034-600-1100-###	600~1100	200 μm	
ATP3034-###-###-###	Other	Other: _____ μm	