

Introduction

Redwave Labs' AD300 is a compact and affordable single-photon detector module with a **built-in counter**. Our fiber-coupled InGaAs offering detects photons in the NIR region up to 1600 nm. The AD300 features active quenching and full digital temperature control. A separate power supply is provided as standard. Can be integrated into a standard 1U rack mount.



Specification

Features	Tunable temperature of the diode (down to -40°C) Low dark and after pulsing rates Software included Integrated counter	
Applications	QKD, TCSPC, FLIM, LIDAR / Time-of-Flight Measurements, Spectrophotometry & Optical Metrology, Single-Molecule Detection, Telecom and Fiber-Optic Testing	
Specifications	Parameter	Value
Power	Single	+12V
	Wavelength	1100 nm - 1600 nm
Photodiode	Breakdown Voltage	60 V - 80 V
	Quantum Efficiency	up to 80% at 1550 nm
Photon Detection Efficiency		1% - 22%
Dark Count Rate		675 cps @10% 1000 cps @15% 1500 cps @20% from 100 cps with min PDE*
Deadtime		The detector's dead time is adjustable. Value is $1\mu\text{s}$ - 1ms
Output pulse		25 ns
Connectors	Power	Molex 2 PIN
	Output	SMB
	USB	USB TYPE C
	Timing Gate	SMB
Weight		350 g
Dimensions (WxHxD)		127.1 x 76.2 x 41.28 mm
Storage Temp		-40 to 85 C
Operating Temp		-40 to 30 C

*All measurements are publicly available on the company's website.

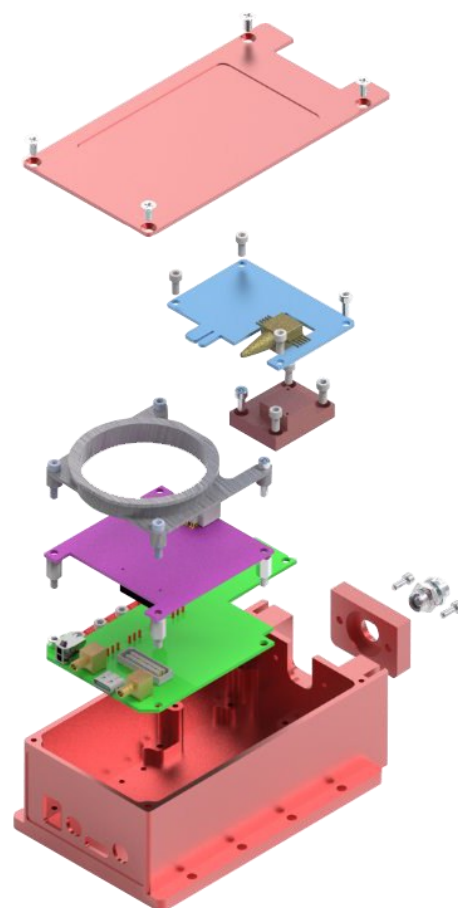
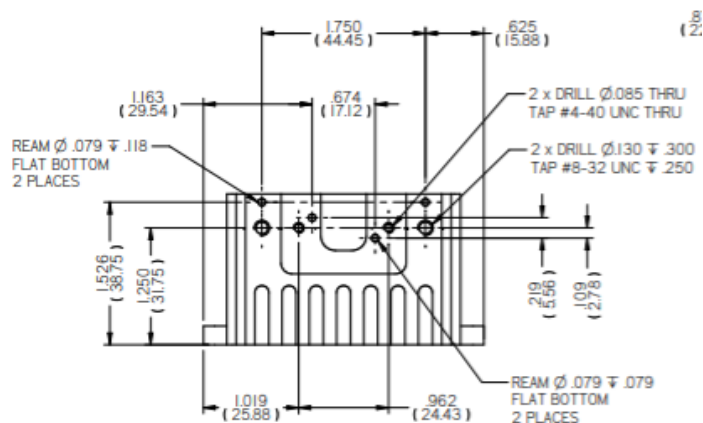
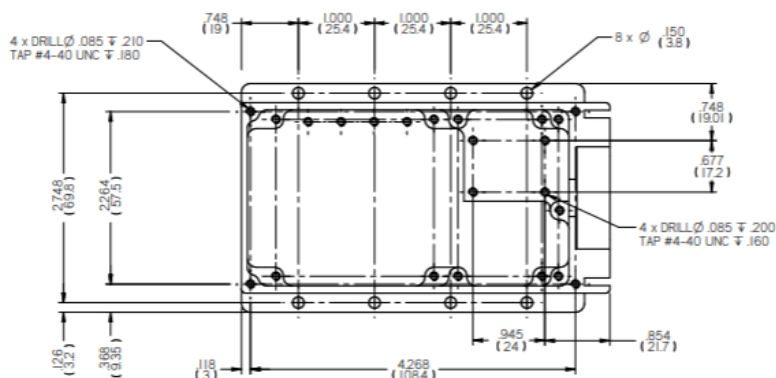
** Each model is delivered with test data specifying the module's actual DCR, dead time, PDE, afterpulsing, and time jitter.

*** RedWave Labs Ltd keeps improving its products and therefore some specifications can vary.

Absolute Maximum Ratings

Symbol	Parameter	Ratings	Unit
V_{dd}	Supply Voltage	+12	Volt
T_{op}	Operational Temperature	-40 to 45	Deg C
T_{st}	Storage Temperature	-40 to 85	Deg C

Mechanical Information



Parameter	Value	Unit
Length	5.004 (127.1)	Inch (mm)
Width	3.000 (76.2)	Inch (mm)
Height	1.625 (41.28)	Inch (mm)
Weight	350	gram