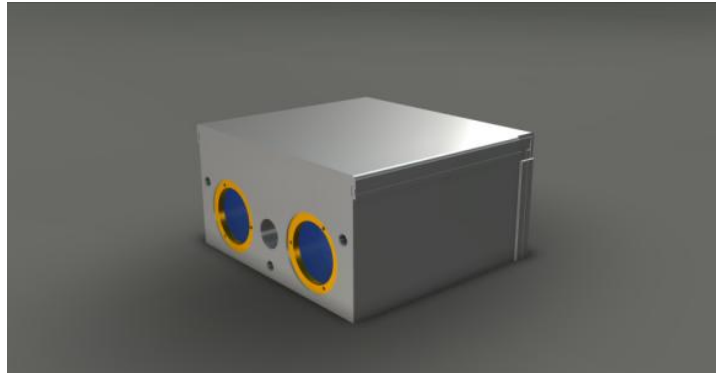
**Features OEM micro laser module ALTM 120M**

- \* Range 2-120 meter
- \* Resolution 1 cm and accuracy 5 cm
- \* Speed 12 Hz
- \* Weight only 43 gram
- \* 37x39x19 mm in dimensions
- \* IP 40 rugged design
- \* USB interface for PC or processors
- \* Time of flight laser technology
- \* Ideal for small electrical helicopters and airplanes
- \* Low cost in high volumes



The Micro Laser Module Rangefinder is designed as an OEM module for range measurement to passive targets.

The Micro Laser Module works in a mode where it acquires and processes several returns and outputs the range data to the target.

It is important that the instrument temperature should lie between  $-10^{\circ}\text{C}$  and  $+60^{\circ}\text{C}$  when the instrument is switched on.

Never apply force or shock to the lenses or to the housing of the instrument. As with other optical instruments, the Micro Laser Module should be protected from being shaken, knocked or dropped.

The lenses when necessary should be gently cleaned using a suitable lens cleaning fluid (*e.g. pure ethylene alcohol*).

The Micro Laser Module makes use of sensitive optical, electronic and mechanical components. The Micro Laser Module requires appropriate handling. Operators should remember that direct sunlight or a similarly intensely radiating source of light looking directly into the instrument lenses must be avoided.

When power is applied to the laser it will go through a start up routine and then start to take range measurements and output range data. A range measurement consists of a number of laser pulses, the received signal from the pulses is processed and the corresponding range data is transmitted via USB.

The number of range returns, the range data in centimetres and an indication of signal strength are transmitted in a variable length ASCII format data string terminated by the linefeed character. Each field is separated by a space character.

A sample data string would be: **4 238 187<lf>**

**The range reference point is the front plate of the laser.**

The following commands are available to the user:

- **#** - serial number, the laser transmits it's serial number as a string terminated by the linefeed character in the form: **10601011001<lf>**
- **1** - Single shot, data output rate 12Hz
- **2** - 4 shot average, data output rate 3Hz
- **3** - 12 shot average, data output rate 1Hz
- **A** - Appends the temperature measurement to the output data:

**4 238 187 25.5<lf>**

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- **F** – Fire; fire the laser for a single reading. If the laser is running it will return one more result and stop transmitting.
- **P** – Toggle the red dot pointer on and off if fitted
- **R** - Run; start the laser running making continuous measurements. A maximum of 3 results are returned each second.
- **S** – Stop; stop the laser firing and power down the transmit and receive circuits.

The Micro Laser Module is supplied with a USB lead.

The Micro Laser Module is powered via a host USB port.

The Micro Laser Module appears as a virtual com port. The laser data is transmitted at 115200 baud, 8 data bits, no parity and 1 stop bit.

<b>Laser</b>	
Type	GaAs Laser Diode
Wavelength	905 nm ( typical )
Beam Divergence	9 x 0.6 mrad
Range	1.0 m to 120 m
Accuracy	10 cm ( typically )
Resolution	1 cm
Measuring Rep Rate	3 Hz
Eye Safety	Class 2 ( visible and invisible )
<b>Communication</b>	
Data Output	Virtual com port at 115200 baud
<b>Connection</b>	
	USB lead
<b>Power</b>	
	Via USB connection
<b>Environmental</b>	
Operating Temp	-10°C to +60°C
Storage Temp	-30°C to +70°C
Protection Class	IP40
<b>Physical</b>	
Construction	Aluminium
Dimensions ( L x W x H )	37 mm x 39 mm x 19 mm
Weight	43g

ALTM 120 M is a special design for unmanned small UAV units that need a small sensor with low power consumption.

