Cost-effective Solution of 1550 nm Pulse Laser for LiDAR System

Shanghai B&A Technology Co., Ltd
Web site: www.baphoton.com

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LiDAR Source Applications

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Static LiDAR System

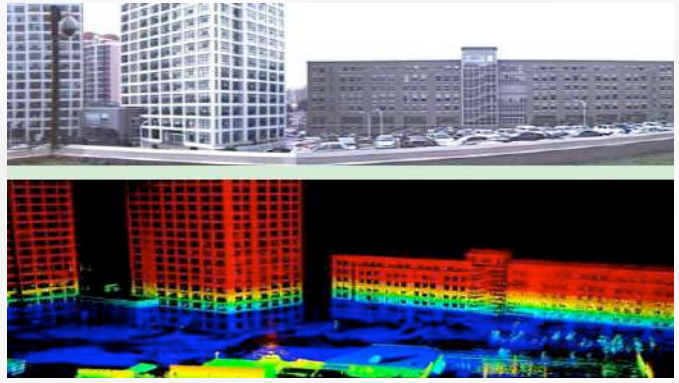
Spec	Parameter
Wavelength	1550 nm
Accuracy	2 cm
Distance	300 m

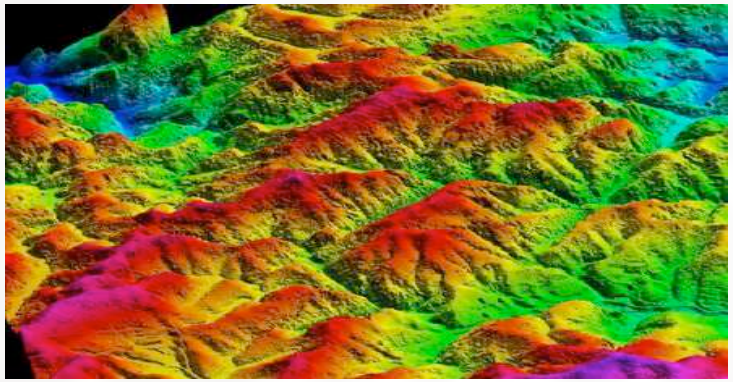
UAV LiDAR System

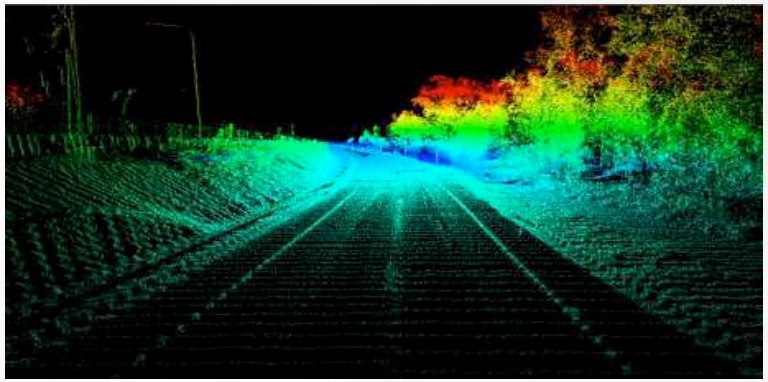
Spec	Parameter
Wavelength	1064 nm
Accuracy	10 cm
Distance	3 km

ADAS LiDAR System

Spec	Parameter
Wavelength	1550 nm
Accuracy	2 cm
Distance	350 m







3 Amplifier & LiDAR Source Modules

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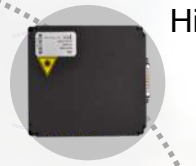
General Products

Mini Pulsed Source

High Power Pulsed Source



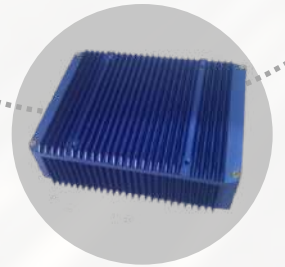
Pulsed LiDAR Source

EYDFA Module

EYDFA With Splitter

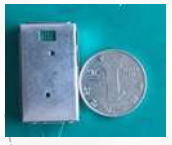
High Power EYDFA

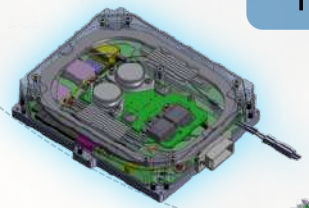
Dual EYDFA Module



Customized Products

- Super Mini EDFA
- Swept Source
- PM Pulse Source
- PM EYDFA
- PM EDFA
- PM Splitter





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Pulsed LiDAR Source

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■Features：

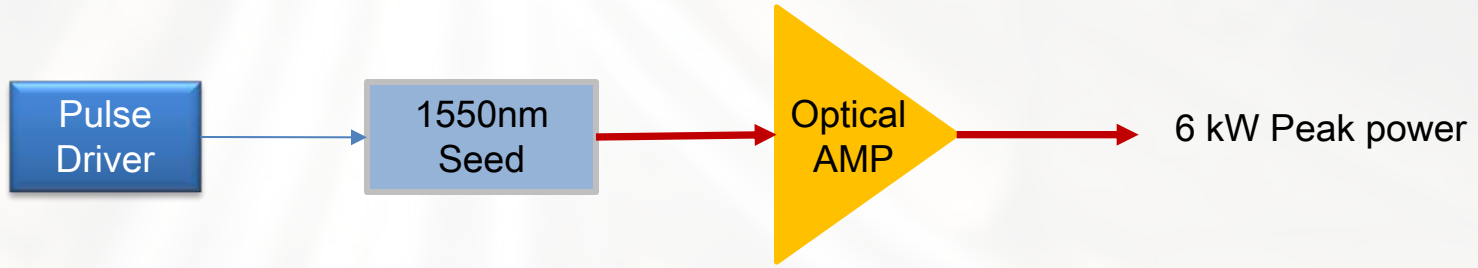
- ✓ Compact Size
- ✓ High Power
- ✓ High Beam Quality
- ✓ Low Power Consumption
- ✓ Low Cost
- ✓ High Stability

■Application：

- ✓ TOF LiDAR

Parameter	Symbol	Min	Typical	Max	Unit
Wavelength	λo	1540	1550	1565	nm
Average Power	Pavr	------	1.3	------	W
Peak Power	Ppek		6		kW
Pulse Width	PW	------	2	------	ns
Repetition Rate	RF	80	130	1000	kHz
Operating Temperature	T	-40	-------	+85	℃
Power Consumption	Pc			15	W

* Custom-design services are available



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Mini Pulsed LiDAR Source

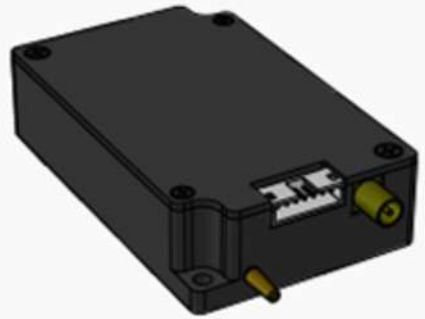
B&A Technology

■Features：

- ✓ Compact Size
- ✓ High Power
- ✓ High Beam Quality
- ✓ Low Power Consumption
- ✓ Low Cost
- ✓ High Stability

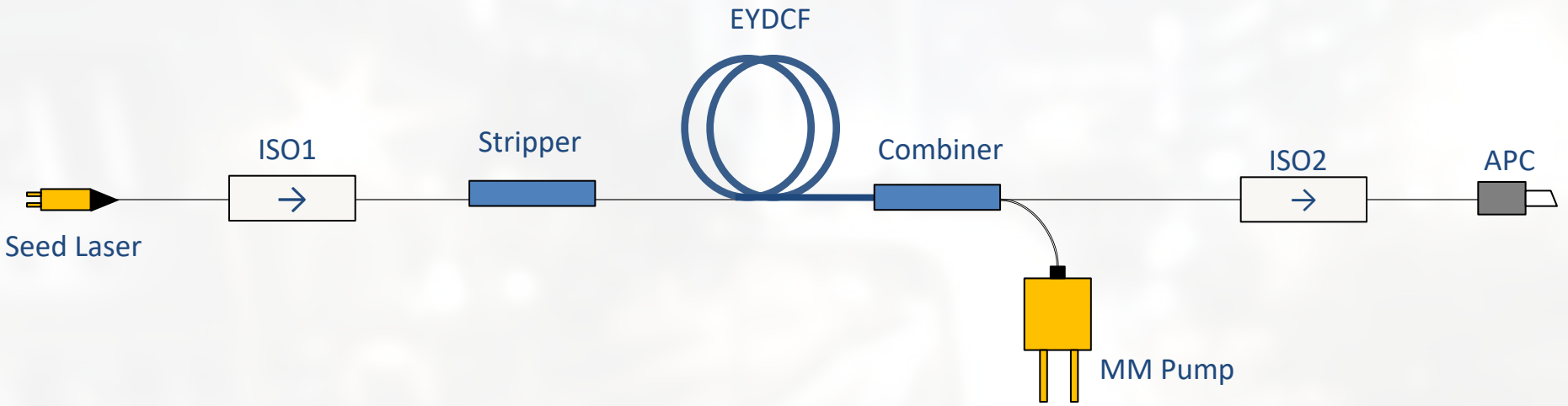
■Application：

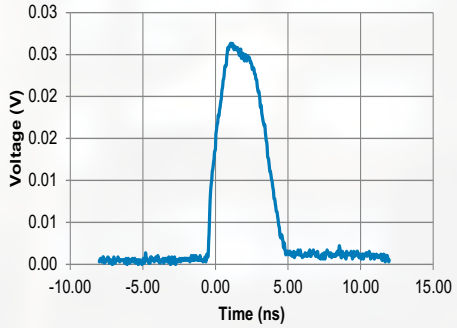
- ✓ TOF LiDAR



Parameter	Symbol	Min	Typical	Max	Unit
Wavelength	λo	1540	1550	1565	nm
Average Power	Pavr	------	1	------	W
Peak Power	Ppek	600	------	------	W
Pulse Width	PW	2	4	------	ns
Repetition Rate	RF	200	500	2000	kHz
Operating Temperature	T	-40	------	+105	℃
Power Consumption	Pc			10	W
Dimension	D	80×50 ×20			mm

Pulsed LiDAR Source Solution

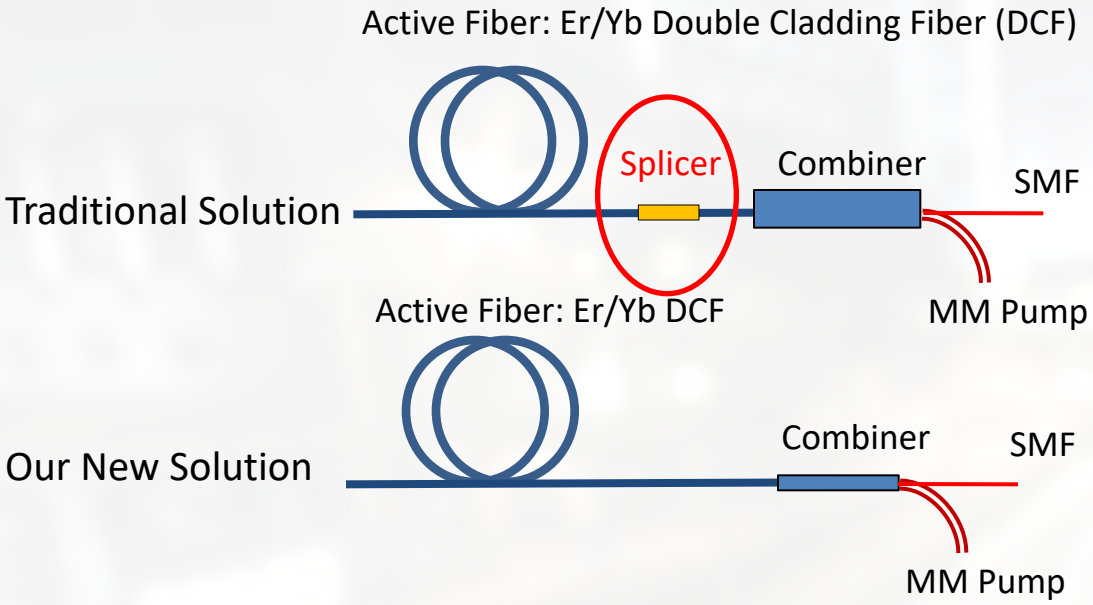


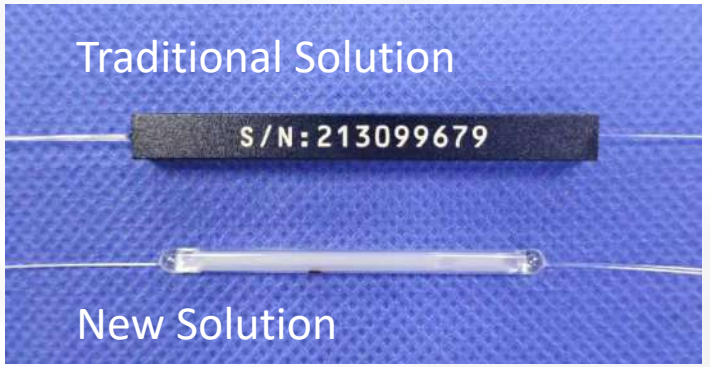


Key Technology

- Integrating Er/Yb DCF and Combiner
- Residual pump power stripping
- Custom-design of the seed laser pulse driver

Unique Device Technology





Size: 5 x 5 x 50 mm

Size: Dia 2.7 x 40 mm

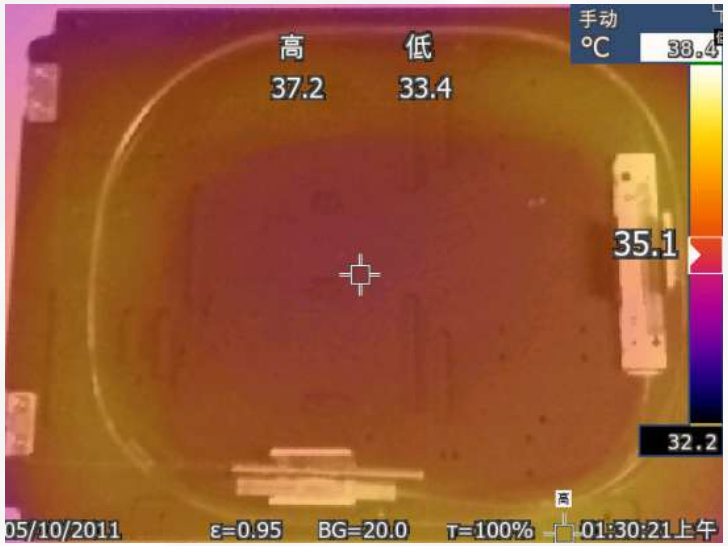
New Solution Highlights

- **No** fusion point between EYDCF and combiner
- **No** splice loss and **better** thermal dissipation
- **Lower** signal path insertion loss
- **Lower** pump path insertion loss
- **Compact** in device size

(1) A: Forward-Pump Schemes, B:Backward-Pump Schemes
(2) Pump wavelength: 940 nm, Input Signal power: 10 mw

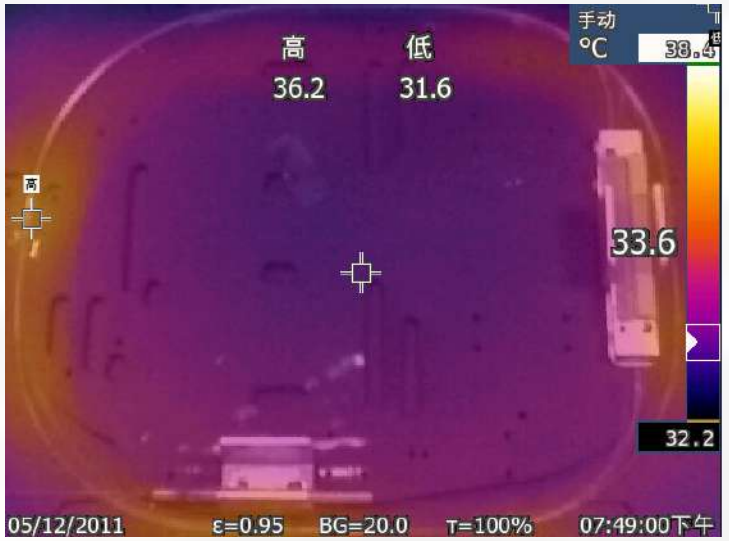
Parameter	Traditional Solution	Our New Solution
Wavelength	1550nm	1550nm
Pump Wavelength	800~1000nm	800~1000nm
O-O Efficiency (B)	>25%	>30 %
O-O Efficiency (A)	>18%	>20%
Power Handling	5 W	5 W

Unique Fiber Coating Technology



Without coating

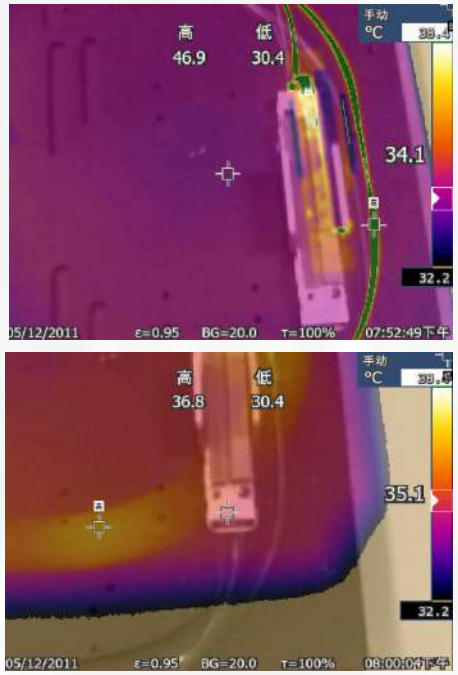
VS



With coating

- The fiber coating technology can improve the heat dissipation of the fiber.
- The optical convert ratio can be up to 35%.

Residual Pump Stripping Technology



Temperature

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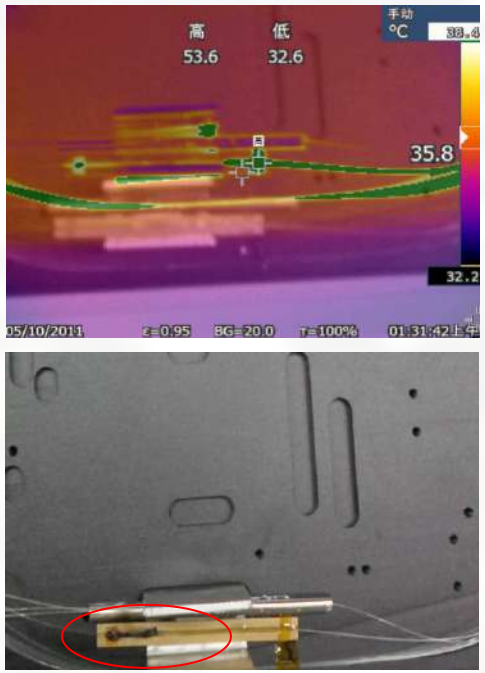


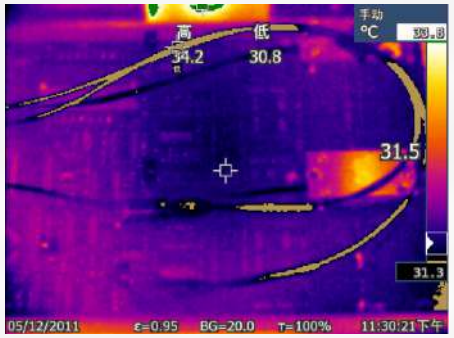
With pump stripping technology

Without pump stripping technology

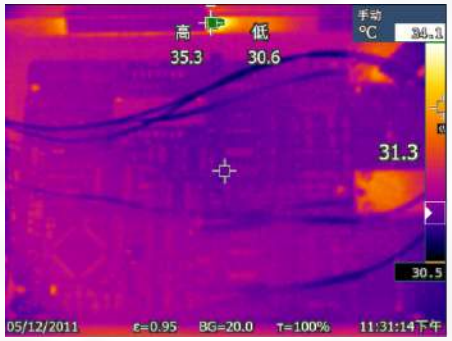
Patent

To strip the residual pump light in the active fiber to lower its temperature and improve the long-term reliability.

High Efficiency Pump Driving Circuit



Not Operation



In Operation

Patent

Advantages of B&A Solution

- Improve the pump current convert ratio up to 90%
- No extra heat dissipation
- High reliability
- Compact size

Cost

Reliability

Brand