

## Specifications NBX-6050/NBX-6050A

Laser Wavelength	1550 ±2 nm				
Distance Range	50m, 100m, 250m, 500m, 1km, 2.5km, 5km, 10km, 25 km				
Measurement Frequency Range	9~13 GHz				
Range of Strain Measurements	-30,000 to +40,000 $\mu\epsilon$ (-3% to +4%)				
Measurement Frequency Scan Step	1, 2, 5, 10, 20, 50 MHz				
Readout Resolution	5 cm (default), 1 cm (minimum)				
Sampling Points	600,000 (default), 3,000,000 (maximum)				
Average Count Settings	2 <sup>5</sup> ~2 <sup>24</sup> times (inc. Hardware Average Count 2 <sup>16</sup> )				
Pulse Width	0.5 ns	1 ns	2 ns	5 ns	10 ns
Spatial Resolution	5 cm	10 cm	20 cm	50 cm	100 cm
Dynamic Range <sup>(1)</sup>	---	1 dB	2 dB	3 dB	6 dB
Max. Measurement Distance <sup>(2)</sup>	0.2 km	1 km	5 km	10 km	20 km
Optical Budget <sup>(1)(5)</sup>	2 dB	5 dB	7 dB	8 dB	10 dB
Measurement Accuracy ( $\sigma$ ) <sup>(3)</sup>	7.5 $\mu\epsilon$ / 0.35 °C				
Repeatability ( $\sigma$ ) <sup>(3)(4)(5)</sup>	2.4 $\mu\epsilon$ / 0.1 °C				
Measurement Speed <sup>(6)</sup>	NBX-6050	5 seconds (minimum)			
	NBX-6050A	0.1 seconds (minimum)			
Signal Terminal	Signal Fiber	SM optical fiber			
	Fiber Connector	FC-APC / SC-APC (factory option)			
Suitable Fiber	SM fiber				
Power Supply	AC100~240V 50/60Hz 250VA				
Laser Class	Class 1 (IEC60825-1: 2001)				
Dimensions / Weight	approx. 456 (W) × 485 (D) × 286 (H) mm / 30 kg				
Operating Temperature	10~35 °C, Humidity below 85% (no dew condensation)				
Storage Temperature	0~50 °C				
Place of Production	Japan				

- (1) Based on 2<sup>15</sup> average cycles.  
 (2) Based on average fiber loss of 0.3 dB/km using SM fiber.  
 (3) Based on the measurement of strain-free, UV-coated fiber.  
 (4) The standard deviation range of measurement value for 5 consecutive measurements for 100 consecutive points.  
 (5) Within the allowable range being adjusted by the optical power, except the case of nonlinear phenomena.  
 (6) Within the setting of 50 m range, 2<sup>14</sup> count settings, 41 scan steps except the time of Pre-Pump Adjustment.  
 (1) - (6) are all based on a frequency scan step of 5 MHz and with Pre-Pump Adjustment and Auto Frequency Adjustment on.

\*Specifications are subject to change without notice.

**Give you a feel<sup>®</sup>**  
 When every point of the optical fiber is a sensor

## Neural Optical Fiber Scope

# NEUBRESCOPE NBX-6050 / NBX-6050A <sup>NEW</sup>

Pulse- PrePump Technique in BOTDA to measure strain and / or temperature

Now operated from  
 laptop computer  
 for easy in-the-field use



Spatial resolution: **5 cm**

Repeatability of strain measurement: **2.4  $\mu\epsilon$**

Repeatability of temperature measurement: **0.1 °C**

Measurement speed (up to 2,000 sampling points): **10 Hz**

### Contact Address

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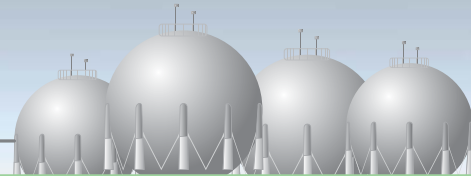
Tel: +81-78-335-3510 Fax: +81-78-335-3515

[www.neubrex.com](http://www.neubrex.com)

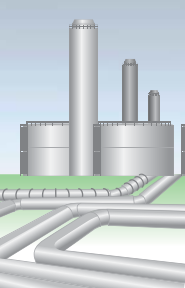




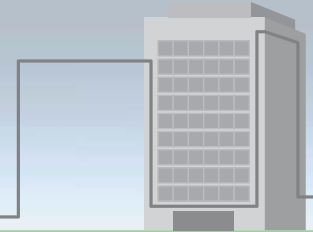
Segment 1



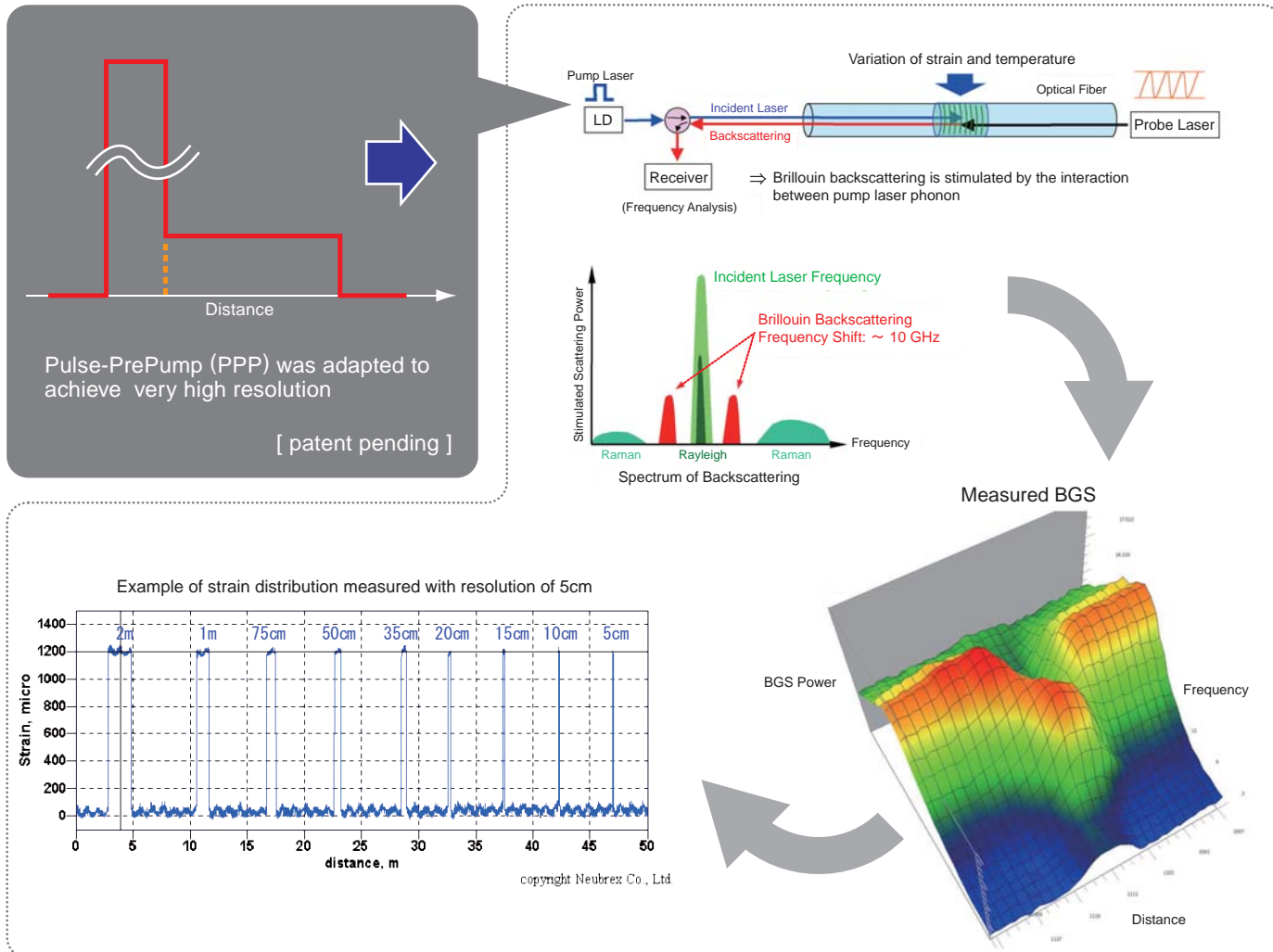
Segment 2



Segment 3

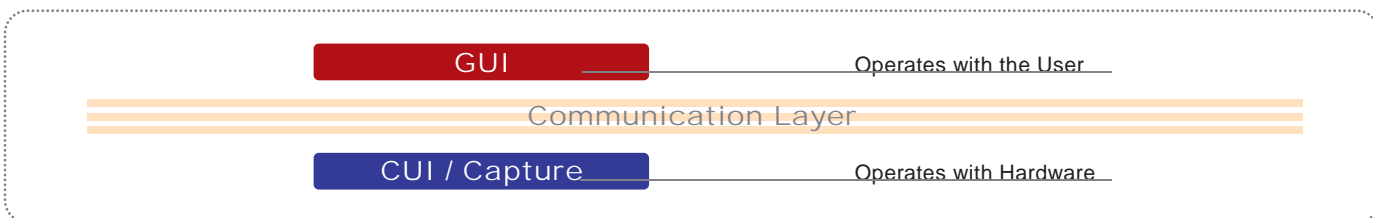


## Principle of PPP-BOTDA



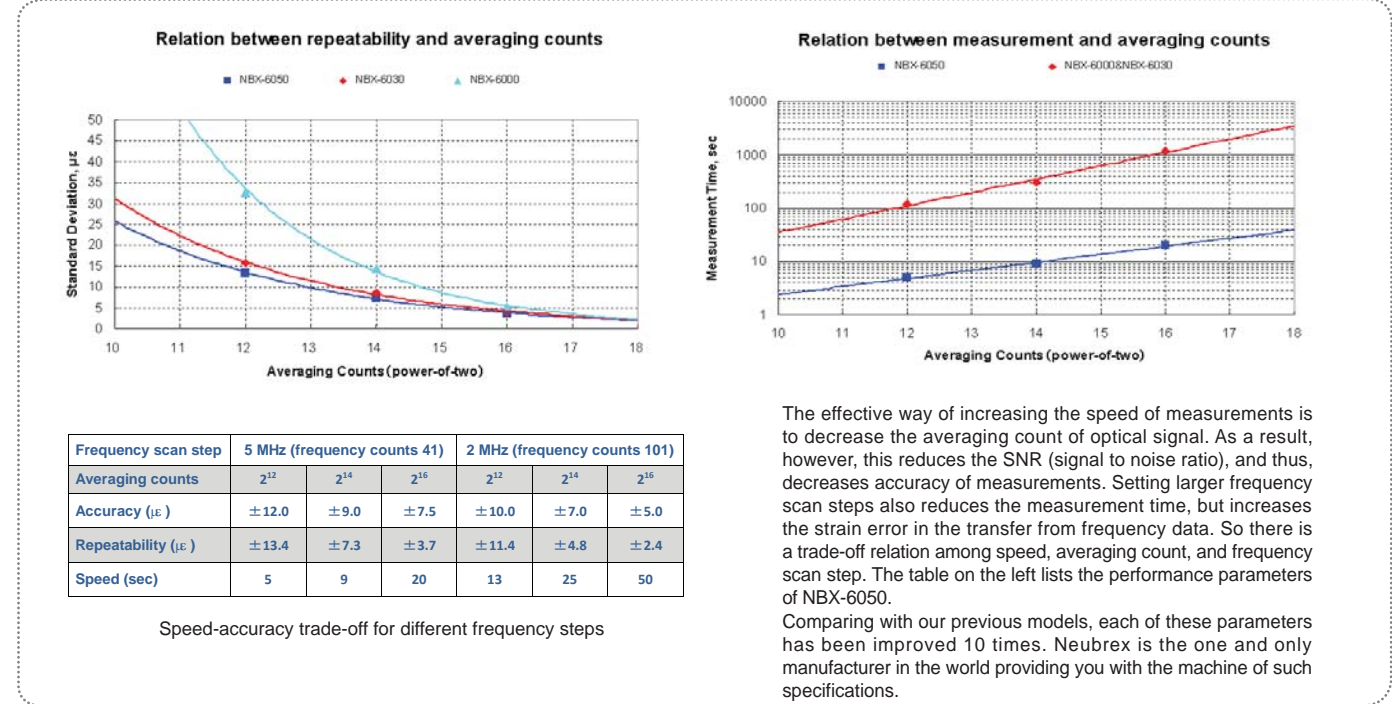
Neubrex technology of PPP-BOTDA successfully increases the spatial resolution and strain accuracy one-order higher than previous products. This is the only one technology in the world.

## Open Architecture



- Open Architecture (OA), allows User to customize, automate, and extend the standard capabilities of NEUBRESCOPE software
- .NET Remoting in communication layer

## Accuracy



## Fast Mode (NBX-6050A)

