



Features:

Three laser beam profile models based on scanning of reflection scattering orders:

OSEPL/LBSI-I/2022 for 185 nm – 800 nm

OSEPL/LBSI-II/2022 for 185-900 nm

OSEPL/CMOS/2023 for 380-1680 nm

High precision measurements and analysis of Gaussian beam

Continuous and pulsed laser beams

Scanning speed of 1 Hz – 50 Hz onwards set through software

Connectivity to PC

Interference pattern of coherent beams can be measured

Spacing, width of interference measurement

For the Gaussian beams only

Principle of Operation:

A ratio of Gaussian laser beam width used for illumination of the measurement volume (MV) to Gaussian signal width of a scattered intensity amplitude from a precision sphere analogous to the spherical opaque particle. MV is created by a rotating reflecting surface – precisely ground stainless steel / glass ball/needle. The product was realized during the multiphase high speed flow measurements. The beam profile intensity amplitude is as shown in the adjoining figure.

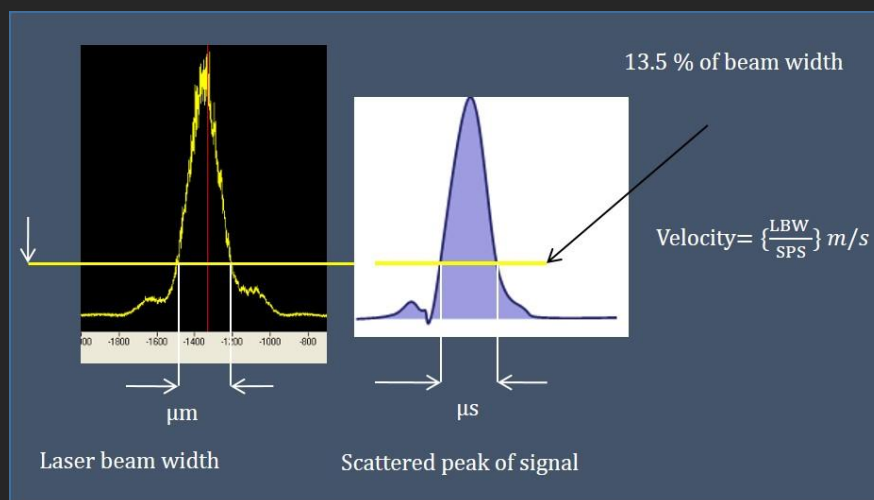


Fig. 1

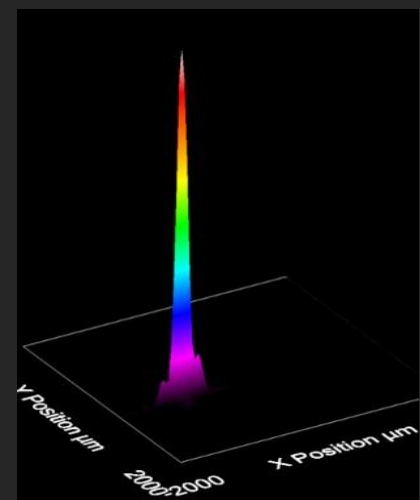
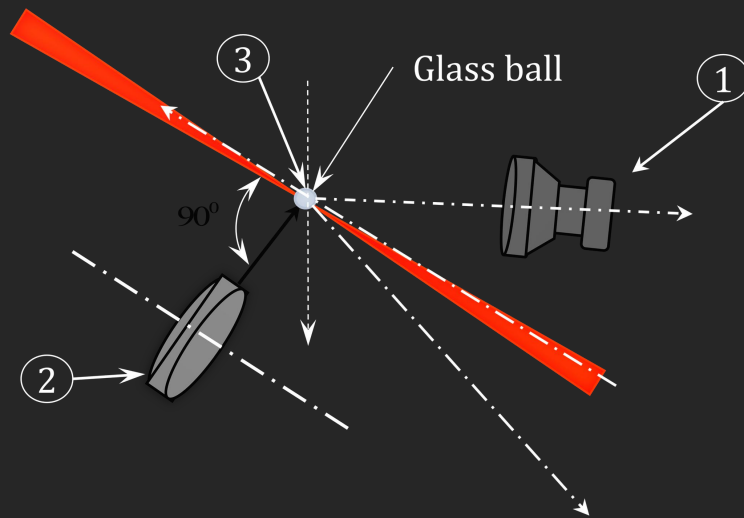


Fig. 2



Description: Figure 1 shows the laser beam width used to illuminate the MV, on a glass ball. A reflection scattering order signal displayed next to it. Their ratios yield velocity of the ball or needle. Figure 2 is the XY plot of scanned laser Beam. Figure 3 displays a precise spherical glass ball or steel

is mounted on a needle. Needle is mounted on a small rotating spindle and MV is illuminated by a laser beam. The reflection scattering orders falling on the PMT detector are converted into signal. Glass ball mounted on needle is at least more than 3 times the size of the beam.

Observable:

2D and 3D views of the beam profile on XY plot
 Top view of the beam profile
 Gaussian circular corona

Operation Range:

Applicability of the LBSI series ranges from 185 nm - 1100 nm. Maximum size of the instrument in LWH is as given in the specification sheet based on RCA 931A housing. With PMT size the housing size reduces. Beyond this wavelength range, CMOS series has been used where three CMOS sensors are mounted on beam splitter units. Additional attachment has to be used to obtain the beam image in front of the sensor (not shown here).

LBSI series

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Specifications		LBSI series I	LBSI series II	CMOS series
		R636-10	R2658	C5 Model*
01	Wavelength(λ)	185-800 nm	185-900 nm	300-1700 nm
02	Zone 1: λ progressive	185-300 nm	(-) 400-900 nm	NA
03	Zone 2: λ constant/peak	300-800 nm	400 nm	380-1680 nm
04	Item weight	< 500gms	< 500 gms	< 500 gms
05	Item dimensions (mm)	176×50×112.50	176×50×112.50	C5 dimension
06	Sensor Material	GaAs(Cs)	InGaAs(Cs)	--
07	Model number	LBSI/280222	LBSI/010322	LBSI/020322
08	Supply (bet ⁿ anode & cathode)	1500 VDC	1500 VDC	--
	(bet ⁿ anode & last dynode)	250 VDC	250 VDC	--
09	Operating Current	0.001 mA	1 μ A	--
10	Receiver type	PMT	PMT	CMOS
11	Gain	4.5×10 ⁵	1.6×10 ⁵	--
12	Wire dimensions	1.5 m	1.5 m	1.5 m
13	Collimating lens	yes	yes	yes
14	Scan rate	> 1 Hz – 50Hz	> 1 Hz – 50Hz	FPS
15	Beam dimensions at MV	2 μ m - 3 mm**	2 μ m – 3 mm**	3× pix – < 10 mm
16	Beam divergence	0 - 0.5	0.0 - 0.5	--
17	Operating temperature range	-10 °C -- +50 °C	-30 °C -- +50 °C	-10 °C -- +50 °C
18	Housing	SS, CCA, Al, glass	SS, CCA, Al, glass	SS, CCA
19	Calibration	Half Yearly	Half Yearly	Half Yearly
20	Software OSEPL	Yes	Yes	Yes
21	Server based DAQ	On request	On request	On request
21	Warranty	1 year	1 year	1 year

* C5 model can be found in one of our products catalogues. ** Size limited by area of sensing on PMT unit.

The module has an integrated optic, laser diode and APC driver circuit. Spot-size maintains the MV dot while temperature fluctuates between 14°F ~122°F. (-30 °C to +50 °C).

APC driver circuit enables constant Laser output power.

ONC Series

Laser Beam Scan Instrument (LBSI)

Analogue Sensing



Contents of brochure can be changed anytime without prior notice if required.