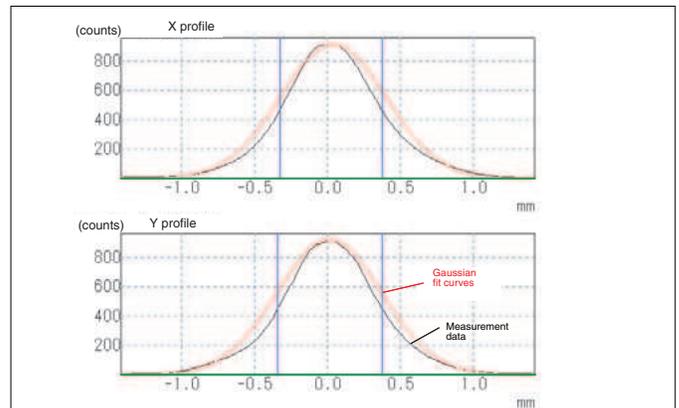
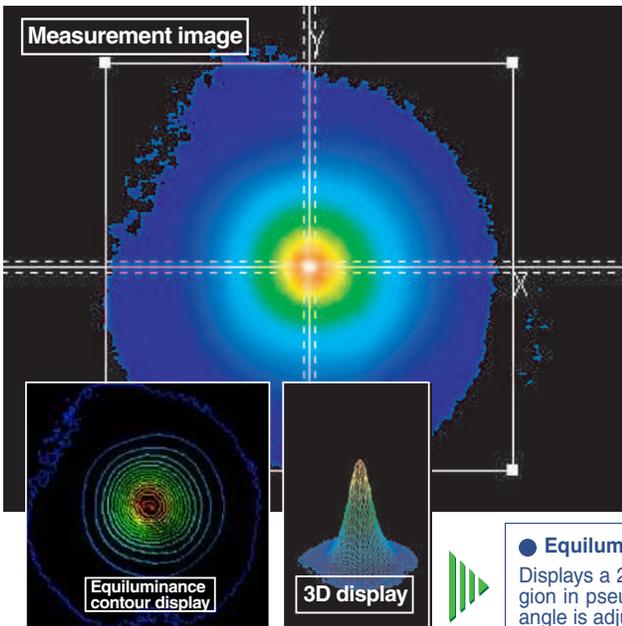


High power laser measurement system

Measures beam characteristics of high power lasers up to 100 watts such as machining YAG lasers, by using a beam splitter to greatly attenuate the laser beam.



A high power laser measurement system is equipment capable of measuring the beam shape of high power lasers. This system combines the A6503-06 for attenuating high power beams with the A6503-04 or -07 for measuring the beam shape at any spatial position. The A6503-06 has two internal beam splitters that attenuate the output of a high power laser down to 1 % or less of the original power. The attenuated light then enters the A6503-04 where its light intensity is further reduced. Specifically the light intensity is reduced to 10 % or less by the first-stage beam splitter and further reduced up to 6 orders of magnitude by the next-stage neutral filter. The original power is consequently attenuated by a total of 9 or more orders of magnitude. If the beam diameter is relatively large, for example 5 to 10 mm, then the A6503-07 should be used instead of the A6503-04.



● XY profile display

Displays an XY profile of a specified region. Overlays not only measurement data but also gaussian fit curves (red line). XY profile can be zoomed by mouse operation. The cursors appear on graph, and data can be read directly at any desired position.

● Equiluminance display and 3D display

Displays a 2D or 3D profile of a specified region in pseudocolor. The 3D display viewing angle is adjustable.

● Beam parameter display

Analyzes and displays various beam parameters of a specified region. The slicing levels used for analysis are FWHM, 1/e, 1/e², and any other two points specified by the user.

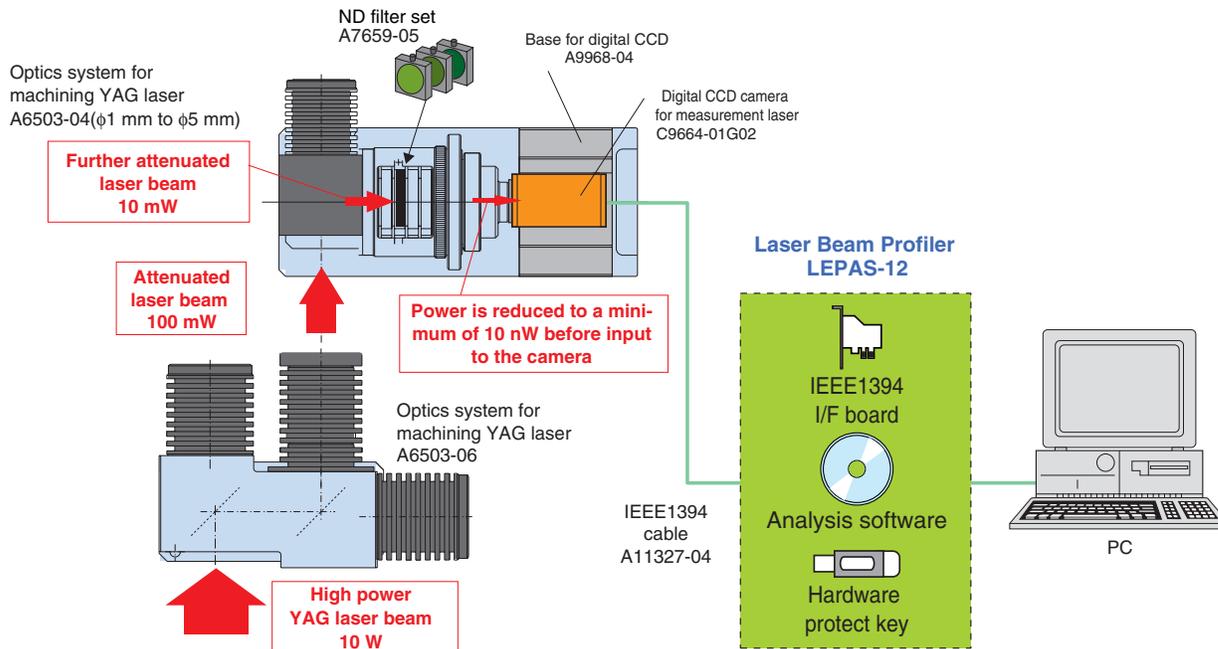
	FWHM	1/e	1/e ²
Peak intensity (counts)	922		
Peak position (μm)	-104.13, -65.08		
Total beam energy (counts)	3979099		
Gravity position (μm)	-130.17, -78.10	-117.15, -78.10	-104.13, -78.10
Beam width (μm)	702.89, 715.91	872.11, 846.07	1366.74, 1353.72
Beam gauss width (μm)	859.06, 859.09	1015.29, 1015.29	1457.85, 1431.82
Beam area (μm ²)	397482.84	593343.95	1495219.97
Beam energy (counts)	1560681	2018080	3113516
Average energy (counts)	665.25	576.26	352.81
Dispersion (%)	20.51	29.52	61.13
Tilt (°)	140.26	143.01	135.21
Ellipticity (%)	105.43	104.77	102.44

High power laser measurement system



System configuration

1 mm to 5 mm diameter, 10 watt YAG laser measurement system



Specifications

Optics specifications

Optics type	A6503-04	A6503-07	A6503-06
Wavelength range	523 nm to 532 nm, 1047 nm to 1064 nm		
Beam splitter reflectance	2 % to 10 %		0.04 % to 1 %
Measurement beam diameter	φ1 mm to φ5 mm	φ5 mm to φ13 mm	-
Input opening	φ26 mm		
Spatial resolution	7 μm	100 μm	-
Maximum input power	125 mW/mm ² (max 100 W)		78 W/mm ² (max 100 W)
Damage level	50 J/cm ²		
Lens mount	C mount		
Optical axis height	80 mm ±1 mm		

Neutral density filter set for YAG optical system A7659-05

The A7659-05 is designed for insertion into an optical system series used for machining YAG lasers. Insert the filter in this neutral density filter to match the measurement beam intensity, in order to avoid saturating the output of the camera connected to the optical system. If you need neutral density filters for other than the standard specifications, please consult our sales office.

Wavelength	523 nm to 532 nm, 1047 nm to 1064 nm
Transmittance	1/2, 1/5, 1/10, 1/20, 1/50, 1/100, 1/200, 1/500, 1/1000

The transmittance is an approximate value at a wavelength of 1064 nm

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HAMAMATSU PHOTONICS K.K. www.hamamatsu.com

HAMAMATSU PHOTONICS K.K., Systems Division

812 Joko-cho, Higashi-ku, Hamamatsu City, 431-3196, Japan, Telephone: (81)53-431-0124, Fax: (81)53-435-1574, E-mail: export@sys.hpk.co.jp

U.S.A.: Hamamatsu Corporation, 360 Foothill Road, P. O. Box 6910, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-0960, Fax: (1)908-231-1218 E-mail: usa@hamamatsu.com

Germany: Hamamatsu Photonics Deutschland GmbH: Arzbergerstr. 10, D-82211 Herrsching am Ammersee, Germany, Telephone: (49)8152-375-0, Fax: (49)8152-2658 E-mail: info@hamamatsu.de

France: Hamamatsu Photonics France S.A.R.L.: 19, Rue du Saule Trapu, Parc du Moulin de Massy, 91882 Massy Cedex, France, Telephone: (33)1 69 53 71 00, Fax: (33)1 69 53 71 10 E-mail: infos@hamamatsu.fr

United Kingdom: Hamamatsu Photonics UK Limited: 2 Howard Court, 10 Tewin Road Welwyn Garden City Hertfordshire AL7 1BW, United Kingdom, Telephone: 44-(0)1707-294888, Fax: 44(0)1707-325777 E-mail: info@hamamatsu.co.uk

North Europe: Hamamatsu Photonics Norden AB: Thorshamnsgatan 35 SE-164 40 Kista, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01 E-mail: info@hamamatsu.se

Italy: Hamamatsu Photonics Italia: S.R.L.: Strada della Moia, 1/E, 20020 Arese, (Milano), Italy, Telephone: (39)02-935 81 733, Fax: (39)02-935 81 741 E-mail: info@hamamatsu.it

China: Hamamatsu Photonics (China) Co., Ltd.: 1201 Tower B, Jianning Center, 27 Dongsanhuan Road North, Chaoyang District, Beijing 100020, China, Telephone: (86)10-6586-6006, Fax: (86)10-6586-2866 E-mail: hpc@hamamatsu.com.cn

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