

From the backside of the chip, you can see through the silicon substrate to the patterns of the chip by means of an infrared light. A newly developed infrared CCD camera is used to inspect pattern images more clearly and easily than ever before.

The C2955 is an IC internal inspection system incorporating an infrared microscope and an infrared CCD camera. Use of a newly developed infrared CCD camera enables a high sensitivity approximately ten times that of conventional systems (in comparisons by HAMAMATSU), at a wavelength of $1.0\ \mu\text{m}$, making it possible to obtain sharp, clear images with high resolution. Using an infrared light which is transmitted through the silicon substrate enables observation of the interconnect lines in the IC, the wire bonding status, and the die bonding conditions, along with the diffusion zone conditions, without damaging the part under observation. Observation can be done from the back side, when the sample is prepared by scraping away the molding on the side opposite the surface of the silicon substrate. Because the metal wiring is never touched in the inspection process, precise testing can be carried out under optimum conditions, making it possible to inspect the condition of the diffusion zones, the multilayer interconnect lines, the Al-Si nodules wire bonding interfaces, and die bonding details.

- **Best suited for flip-chip evaluation**
- **No damage to part under observation**
- **High sensitivity, high resolution**
- **Built-in contrast enhancement function**
- **Shading correction function**

SPECIFICATIONS

● Infrared CCD Camera (camera head, camera control unit)

Imaging device	2/3-inch infrared CCD
Spectral response	400 nm to 1200 nm
No. of pixels	380,000
Effective photocathode size	6.3 × 4.7 mm
Power consumption	20 VA

● Video Monitor

CRT	12-inch/Black and white, high-resolution model
Resolution (horizontal center)	900 TV lines min.
Power consumption	38 VA

● Infrared Microscope

Optical path switching	100 : 0 / 0 : 100 (eyepiece/camera)
Stage travel area	153 × 153 mm
Epi-illuminated light source	12 V, 100 W halogen lamp
Revolver	5 holes
Infrared objectives	10 ×, 20 ×, 50 × (optional: 5 ×, 100 × 1)

● Environmental Conditions

Ambient operating temperature range	0 to +40°C
Ambient storage temperature range	-10 to +50°C
Ambient operating/storage humidity	90% max. (with no condensation)
Line voltage	100 VAC ± 10%, 50/60 Hz

COMPONENTS

- Infrared CCD camera
- Camera control unit
- Video monitor
- Infrared microscope (including light source dimmer transformer*)

- Cables: 1 set

* Specify the line voltage at ordering.

APPLICATIONS

- Inspection of flip-chip and other packaged IC devices
- Testing for abnormalities (defects, failures) in metal and polysilicon wiring
- Observation of wire bonding
- Observation of various types of die bonding zones
- Simultaneous inspection of Al-Si nodules and multiple patterns
- Observation of pattern diffusion into substrate
- Identification of ESD failure locations

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HAMAMATSU PHOTONICS K.K., Systems Division
812 Joko-cho, 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. and Canada: Hamamatsu Photonic Systems: 360 Foothill Road, Bridgewater, N.J. 08807-0910, U.S.A., Telephone: (1)908-231-1116, Fax: (1)908-231-0852

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

France: Hamamatsu Photonics France S.A.R.L.: 8, 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

United Kingdom: Hamamatsu Photonics UK Limited: Lough Point, 2 Gladbeck Way, Windmill Hill, Enfield, Middlesex EN2 7JA, United Kingdom, Telephone: (44)208-367-3560, Fax: (44)208-367-6384

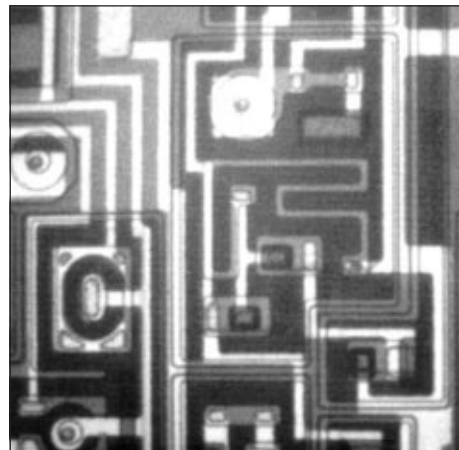
North Europe: Hamamatsu Photonics Norden AB: Smidesvägen 12, SE-171-41 Solna, Sweden, Telephone: (46)8-509-031-00, Fax: (46)8-509-031-01

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

OPTIONS

- C7103 IC Backside Polishing System

IMAGE EXAMPLE



Homepage Address <http://www.hamamatsu.com>

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