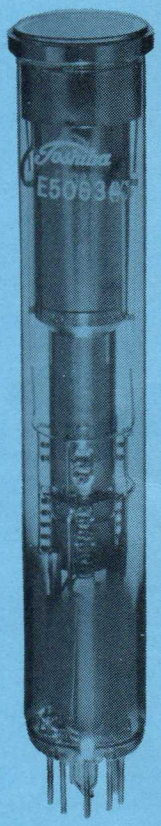
TOSHIBA

TOSHIBA CAMERA TUBE CHALNICON

FOR X-RAY TV CAMERA SYSTEM IN MEDICAL AND INDUSTRIAL FIELDS

Chalnicon has excellent performance characteristics suitable for picking up the output image of image intensifier or other object in the X-ray TV systems.

Type	Sensitivity (times)	Dark uniformity	Quantum noise	Picture contrast	Resolution	Burn-in	Picture uniformity	Lag
E5001(X)	3.5	excellent	a little	excellent	excellent	negligible	excellent	adequate
E5063(X)	3.5	excellent	a little	excellent	excellent	neglibible	excellent	short
(ref.) vidicon	1	fairly good	a little	fairly good	excellent	remarkable	fairly good	adequate
(ref.) PbO vidicon	2.3	good	remarkable	excellent	good	a little	good	negligible



E5063 (X)

Interchangeable to 1 inch vidicon 8451 for X-ray TV camera

As the tube design of E5001(X), E5063(X) is same as that of 8541 except the target structure, you could replace 8541 with Chalnicon E5001(X) or E5063(X) so as to obtain good quality picture if you only adjust the signal electrode voltage to the optimum value refering to the value noted on the individual test sheet.

High sensitivity

Sensitivity of Chalnicon to the phosphor P-20 of image intensifier output screen is approximately 1.5 times higher than that of pbo vidicon and 3.5 times of vidicon. It is, therefore, possible to reduce the X-ray exposure dose on the patient considerably. At the same exposure dose as required for vidicon, it is possible to reduce the aperture of the relay lens system between the image intensifier and Chalnicon thus avoid the use of expensive lens system.

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No burn-in

At the optimum signal electrode voltage, permanent burn-in which is usually observed in conventional vidicons, is never seen at all even when the direct radiography is taken with high X-ray expo exposure dose.

Adequate image lag

Since the lag characteristics is nearly equal to that of vidicon under the same signal current, the graineous picture of the image intensifier caused by random noise of X-ray photon is adequately smoothened by the integration effect due to the lag and good quality picture can be obtained. Improvement of the lag, however, is possible by employing the bias light when taking a fast moving object such as cardinal catheterization. (Signal current by the bias light is suited to 20 nA through 50 nA)

High contrast

Gamma value of light transfer characteristics is nearly equal to unity. Thus the video picture is obtainable with good contrast.

Good picture uniformity

Shading, which is usually observed in conventional vidicons, is not seen in the Chalnicon On account of the saturated signal current-voltage characteristics of the Chalnicon no uniformity of signal output current is observed throughout the scanning area.

High resolution

Chalnicon has so high resolution that satisfys the requirement of the X-ray TV system.

Long life

Chalnicon target is very tough and stable. Increase of dark current or decrease of light sensitivity which is seen with the conventional vidicon and growth of white spots with pbo vidicon are seldom ocurred. The cause of life end is ordinarily the decrease of the cathode emission which seems same as the decrease phenomena of that of pbo vidicon.

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2-1, 5-chome, Ginza-Nishi, Chuo-ku, Tokyo, Japan

VP-1/9-74 Printed in Japan