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HITACHI ELECTRON TUBE TECHNICAL DATA '77-2

HITACHI SATICON* H8397A

* Trade mark

The H8397A is the low lag type of the H8397.

 **HITACHI**

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Note: The information contained herein is tentative and may be changed without prior notice. It is therefore advisable to contact Hitachi before proceeding with the design of equipment incorporating this product.

1. INTRODUCTION

Recent developments in color TV broadcasting, especially in the fields of broadcast technology and program composition are quite remarkable. The penetration ratio of color TVs in Japan reached 90% in 1975 and that in the U.S. is reported to be 71%. Against this background the demand for small sized, highly mobile, low cost, highly stable TV cameras with superior picture quality has been increasing year after year. This fact is clearly evidenced by the increasing use of this type of equipment by TV news teams in the U.S..

In Japan also, the need for small, high performance TV cameras is growing, not only in the field of news gathering activities, but also for broadcasting sports events and dramas etc., in place of conventional 16 mm cinecameras. SATICON is the newly developed, revolutionary "third generation" camera tube which has made the development of such equipment possible. The main part of the SATICON target is a heterojunction photodiode of a novel amorphous chalcogenide semiconductor, which secures low dark current, fast response, well-balanced spectral sensitivity, high resolution and little flare. SATICON is the result of the cooperation between NHK (Japan Broadcasting Corporation) and Hitachi, Ltd. since 1965.

The 18mm(2/3-inch) diameter SATICON tube H8397 employing magnetic focus and magnetic deflection, has been adopted for many high-quality small sized color cameras.

Recently, NHK and Hitachi succeeded in development the new type H8397A with reduced lag characteristic.

This improvement through the modification of electron gun design is lowered an equivalent electron temperature.

All other excellent features of the H8397 are still maintained in the H8397A.

2. DESIGN DECISIONS

The basic concept in the design of the new small sized color cameras employing the newly developed SATICON camera tube is: firstly to get exactly the same picture quality as is obtained from standard TV broadcast color cameras.

Secondly to realize a camera which is highly mobile, easily operatable and easy to maintain. Fundamental requirements are evolved and objectives for SATICON small sized color camera are

- 1) High sensitivity: lens iris f4.0 (illuminated by a 200 foot-candle light).
- 2) Signal to noise ratio: more than 50dB.
- 3) Resolution (amplitude response at 400 TV lines): typical value 45%.
- 4) Residual signal after 50 msec: nearly zero with bias light.
- 5) Size and weight (small sized type): 14 lbs.
- 6) Quick set up procedure: easy adjustment of black balance and registration among three tubes.

Using an "H8397A", 18 mm(2/3-inch) type SATICON, the above requirements have been satisfied.