



# Yateks P-UV Series Industrial Videoscope 3.9mm UV output and resolution measurements

14 JAN 2021

Stephen Evans

## Abstract

The Yateks P-UV Scope is a portable UV video scope with an 8-inch monitor and 360° (4 way) articulation. The scope is 3.9 mm diameter x 1 m length and has a UV LED at the tip. The UV output at 1.0" distance to target is 1143  $\mu\text{W}/\text{cm}^2$ . At 0.75" a UV indication of 0.005" on a Transparent Crack Comparator is clearly visible.

## Introduction

This study measured the UV output and resolution of the model P-UV articulated flexible borescope at various distances. The UV output was measured in 0.25" increments from 0.25" to 1.25". Tam Panels and 1951 USAF Resolution Test Target were used for determining the resolution of UV indications.



## Table of Contents

<b>Apparatus .....</b>	<b>3</b>
<b>Results.....</b>	<b>4</b>
Yateks Scope UV Output .....	4
UV Indicator Resolution .....	5
<b>Equipment .....</b>	<b>12</b>



## Apparatus

Fig 1. Bench Top Setup

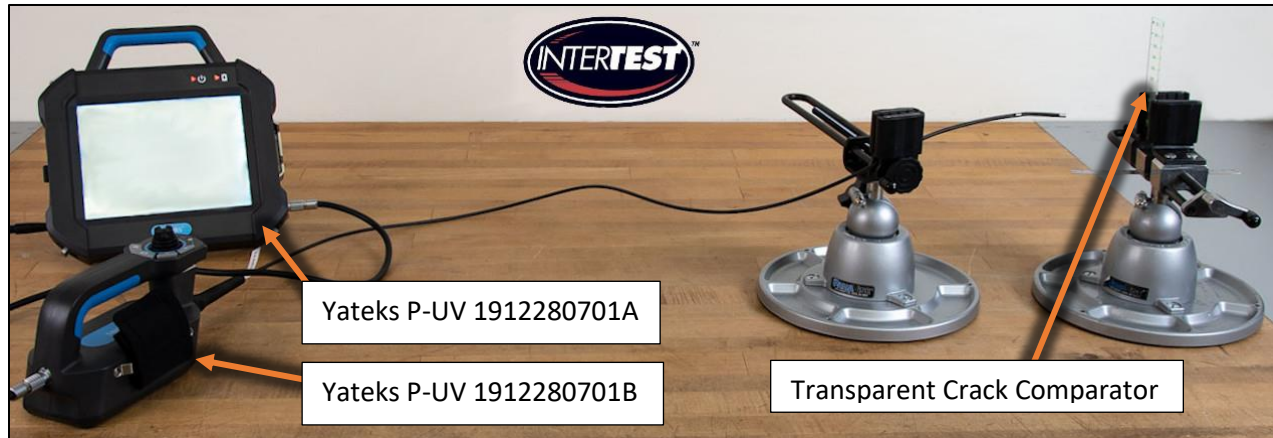
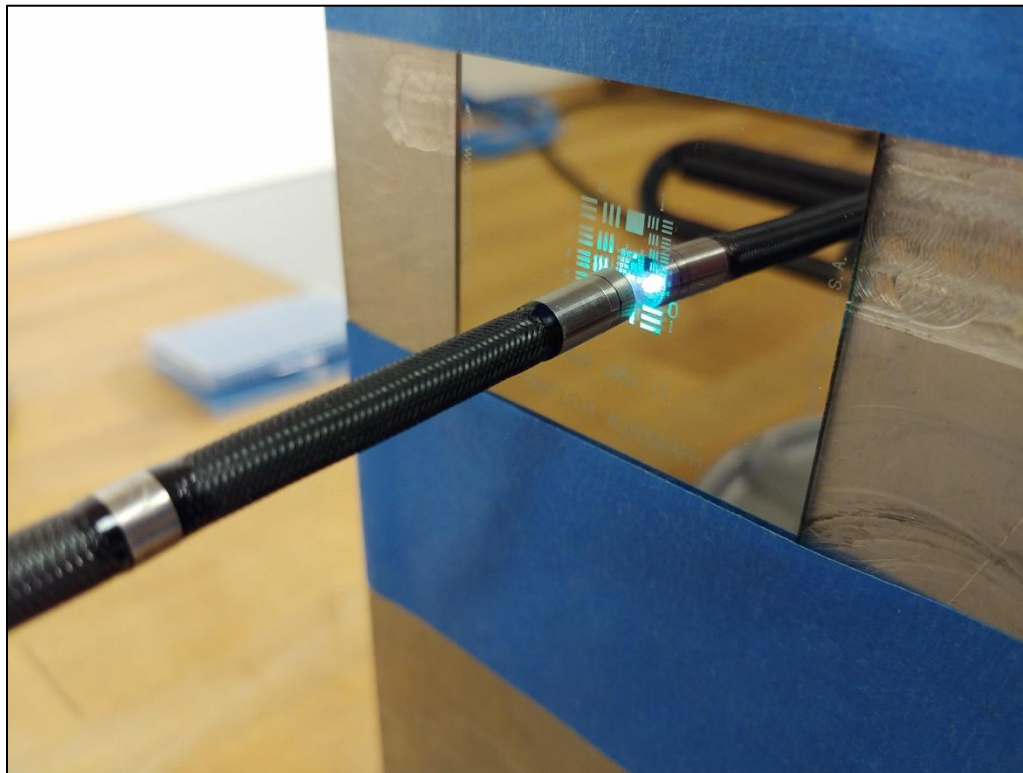


Fig 2. 1951 USAF Resolution Test Target

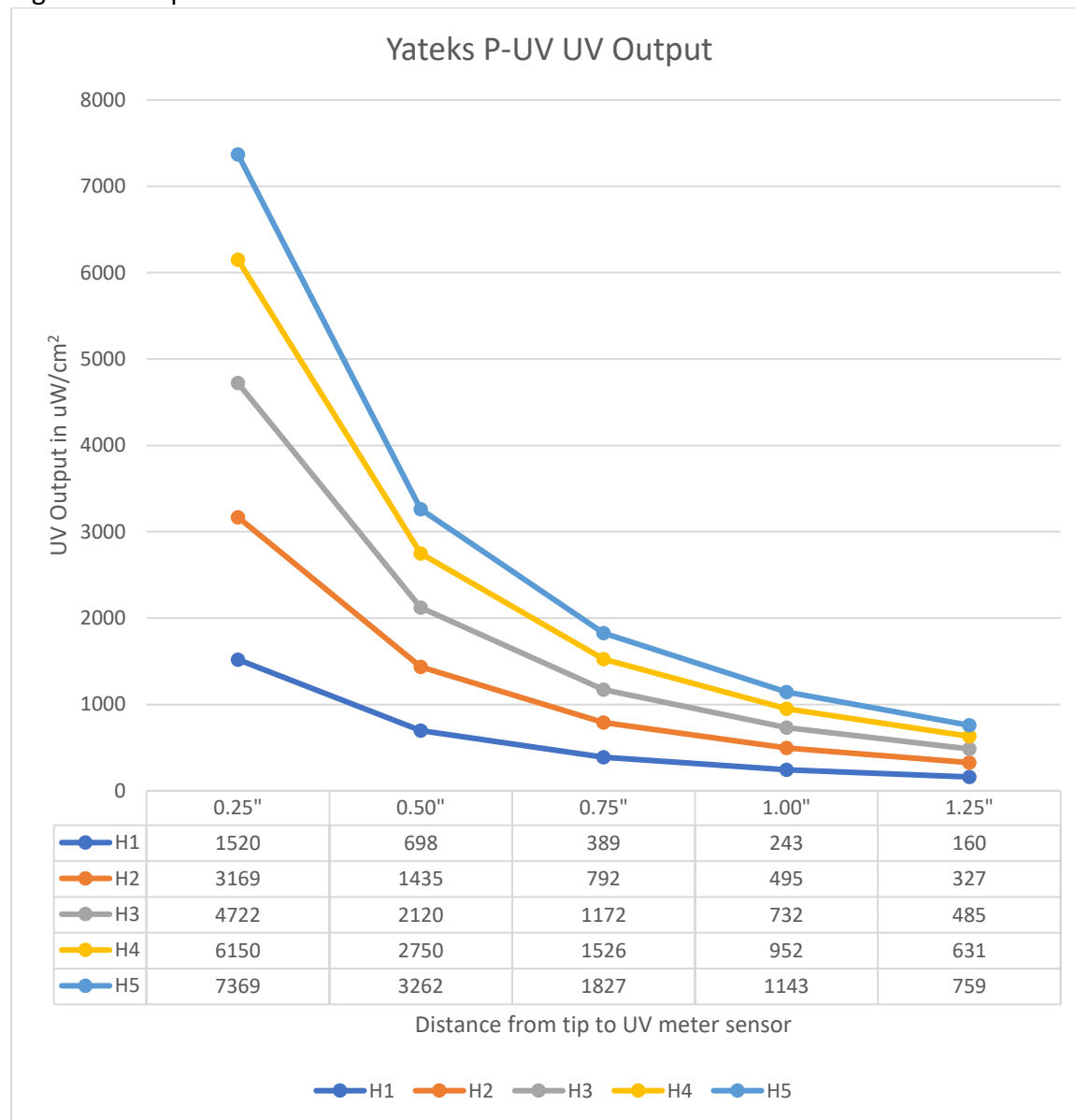




## Results

The following chart and table show UV Output in  $\mu\text{W}/\text{cm}^2$  of the Yateks scope at its 5 different UV Output settings.

Fig 3. UV Output at Distance



Note: H1 through H5 are the 5 UV power settings on the scope.



## UV Indications

### USAF 1951 Resolution Chart

Fig 4. USAF 1951 Resolution Chart at 0.062"

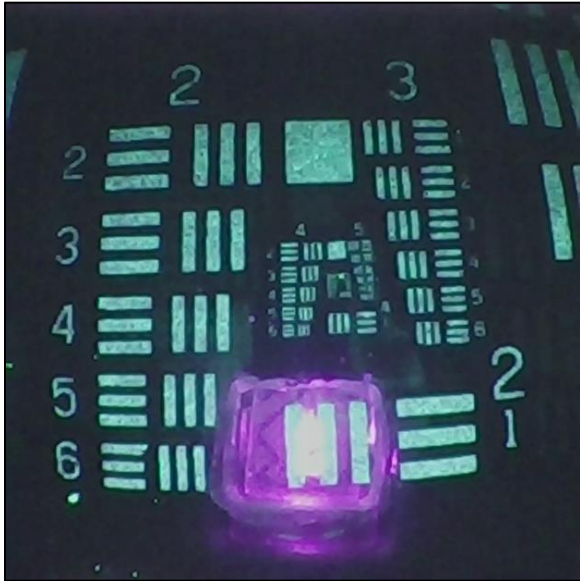


Fig 5. USAF 1951 Resolution Chart at 0.25"

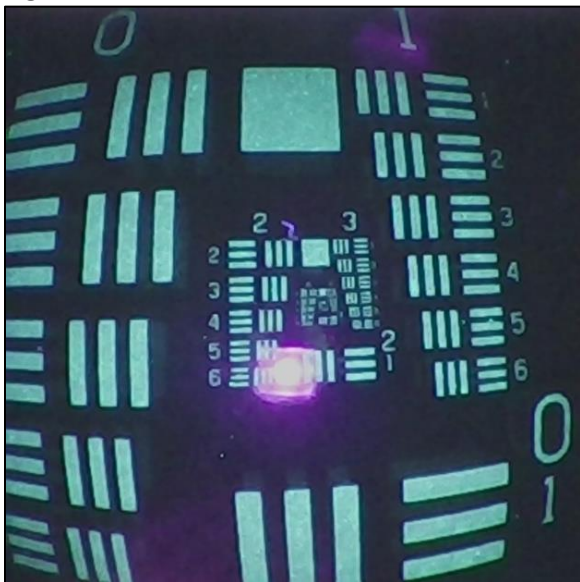




Fig 6. USAF 1951 Resolution Chart at 0.50"

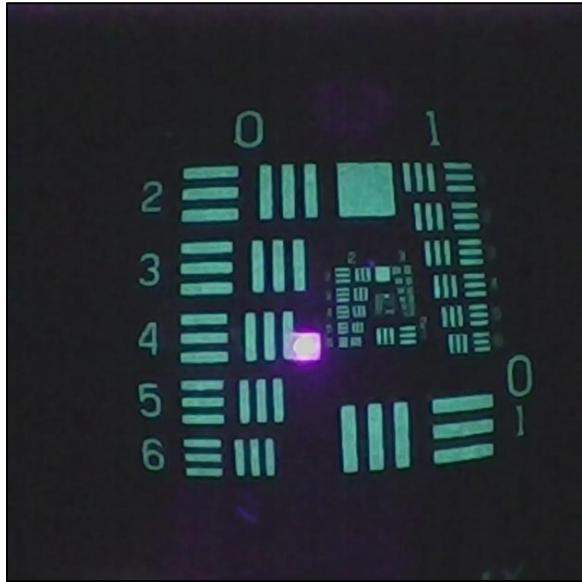


Fig 7. USAF 1951 Resolution Chart at 0.75"

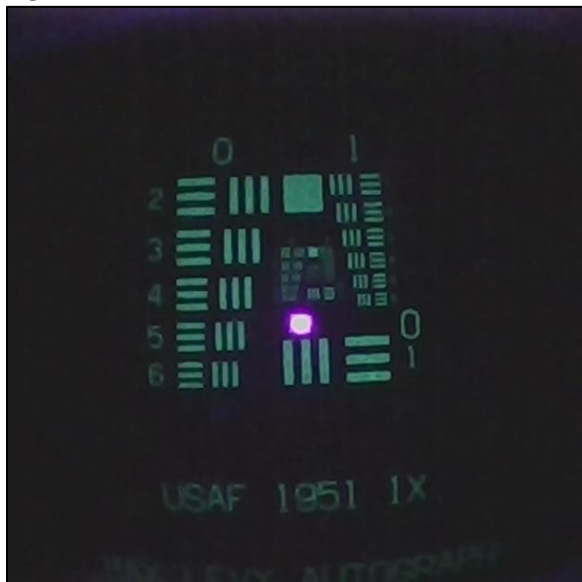




Fig 8. USAF 1951 Resolution Chart at 1.00"





## Tam Panels

All screenshots of the UV indications were taken at max UV Output setting (H5).

Fig 9. Transparent Crack Comparator 0.005" indication at 0.25" distance



Fig 10. Transparent Crack Comparator indications at 0.50" distance







Fig 11. Transparent Crack Comparator indications at 0.75" distance



Fig 12. Transparent Crack Comparator indications at 1.00" distance

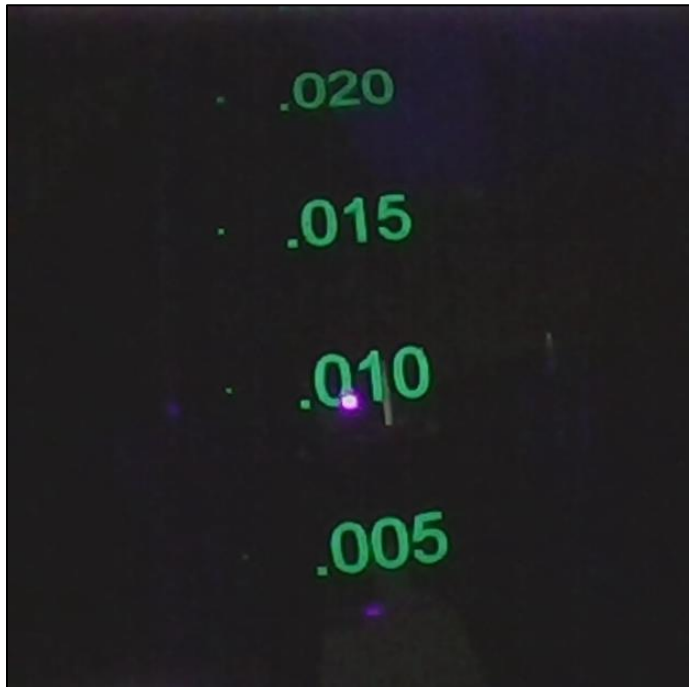




Fig 13. Transparent Crack Comparator indications at 1.25" distance

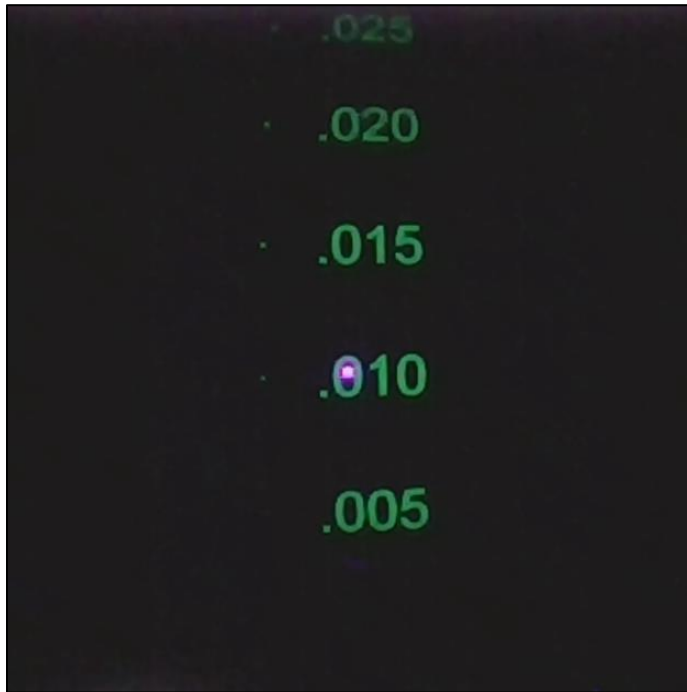


Fig 14. Transparent Crack Comparator indications at 1.00" distance

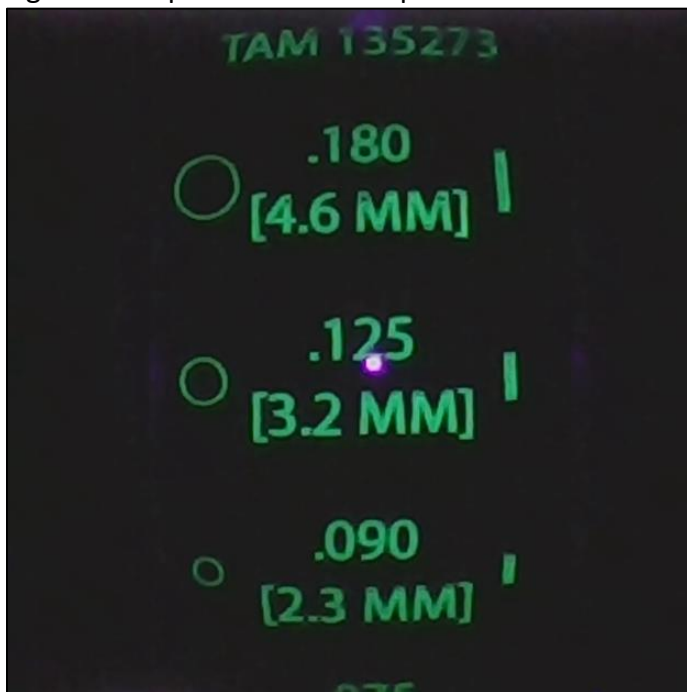
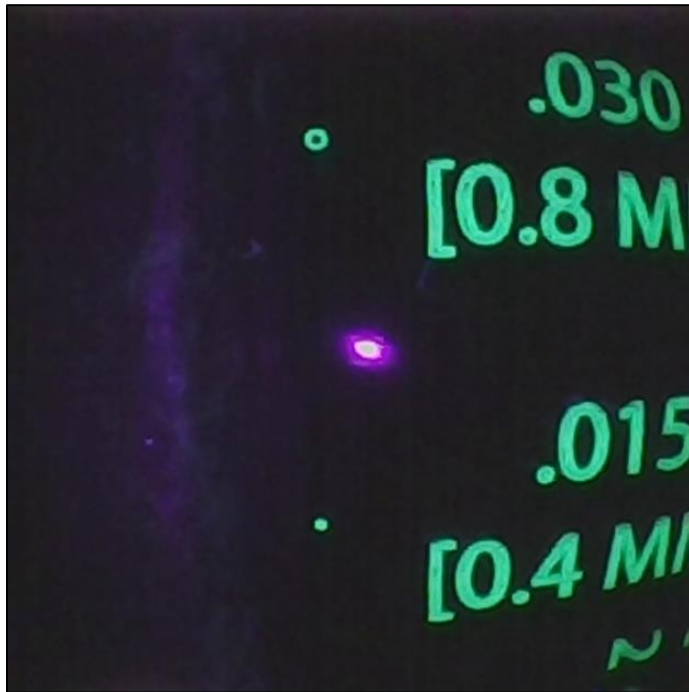




Fig 15. Transparent Crack Comparator indications 0.030" and 0.015" circles at 0.50" distance





## Equipment

Spectronics Corporation Spectroline XP-2000 Radiometer S/N: 1965534

Yateks P410FM-UV S/N: PUV1912280701AB

USAF 1951 Resolution Chart

Tam Panel 135273