

DEPARTMENT: Public Works

By: Michael Edwards  
Public Works Director

966-5356

RECOMMENDED ACTION AND JUSTIFICATION: (Policy Item: Yes \_\_\_ No X)

Resolution authorizing Public Works Director to waive formal bid procedure and authorize sole source purchase of field retroreflectometer for monitoring traffic sign reflectivity.

According to vendors providing sign materials to the County, the field retroreflectometer is manufactured solely by Advanced Retro Technology Inc. The item was originally estimated at under \$3,000, however, the current price is higher:

Field retroreflectometer	\$ 3,275
Tax	\$ 238
Shipping	\$ 46
TOTAL	\$ 3,559

The equipment will be used for sign inventory along County roads, mainly when signs are being replaced or repaired. It will decrease the need for night studies and overtime, improve employee roadside safety concerns and will improve traffic safety by assisting the traffic and sign crew to determine proper reflectivity.

BACKGROUND AND HISTORY OF BOARD ACTIONS:

The Board approved purchase of the reflectivity meter and two other fixed assets on June 6, 1995, as part of a \$7,000 transfer within the Transportation Planning budget from available savings. Subsequent to this action, the price was found to be higher than originally anticipated.

LIST ALTERNATIVES AND CONSEQUENCES OF NEGATIVE ACTION:

If the item is not purchased, Public Works staff will not be able to measure the reflectivity of County Road signs and will need to assign more hours to night inventories of signs.

COSTS: ( ) Not Applicable

A. Budgeted current FY	\$7000 <u>3000</u>
B. Total anticipated costs	\$3559
C. Required additional funding	\$0
D. Internal transfers	\$

SOURCE: ( ) 4/5th Vote Required

A. Unanticipated revenues	\$
B. Reserve for contingencies	\$
C. Source description: <u>Transportation Planning</u>	

Balance in Reserve Contingencies, if approved: \$

SPECIAL INSTRUCTIONS:  
List the attachments and number the pages consecutively:

1. Information on the field retroreflectometer (2 pages)

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\_\_\_\_\_

\_\_\_\_\_

CLERK'S USE ONLY

Res. No.: 95-314 Ord. No. \_\_\_\_\_

Vote - Ayes: 4 Noes: \_\_\_\_\_

Absent: \_\_\_\_\_ Abstained: 1

( ) Approved ( ) Denied

( ) Minute Order Attached ( ) No Action Necessary

The foregoing instrument is a correct copy of the original on file in this office.  
Date: \_\_\_\_\_  
ATTEST: MARGIE WILLIAMS, Clerk of the Board  
County of Mariposa, State of California

ADMINISTRATIVE OFFICER'S RECOMMENDATION:  
This item on agenda as:

Recommended

Not Recommended

For Policy Determination

Submitted with Comment

Returned for Further Action

Comment: \_\_\_\_\_

AM



ADVANCED RETRO TECHNOLOGY, INC.

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# MODEL 920

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# FIELD RETROREFLECTOMETER

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## Features

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- PHOTOPIC CORRECTED DETECTOR AND SOURCE "A"
- MEETS LS-300C, ASTM, CIE & DIN SPECIFICATIONS
- SINGLE RANGE MEASUREMENT TO 0.1 cd/lux-m<sup>2</sup>
- FIXED GEOMETRY AT 0.2°, -4° or 0.33°, +5°
- REFERENCE STD'S & INCLUDED
- NEWEST SOLID STATE ELECTRONICS
- DAYTIME MEASUREMENT OF SIGNS
- DIGITAL LIQUID CRYSTAL DISPLAY
- READ AND HOLD FEATURE
- LONG BATTERY LIFE
- EASE IN READ-OUT



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## Description

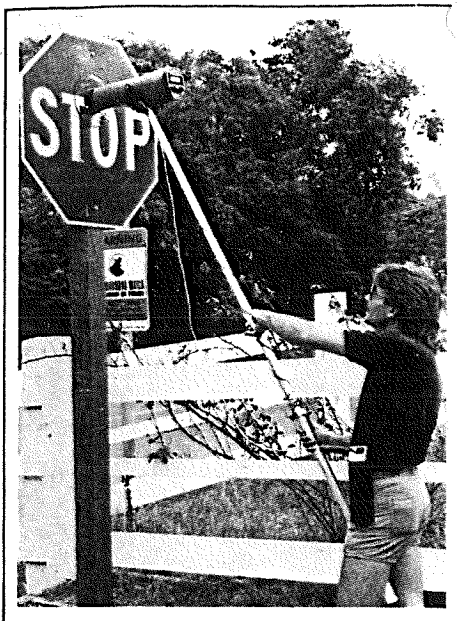
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The Model 920 utilizes the latest solid state electronics with the advantage of compactness. The entire light source, detector, amplifier and digital readout is enclosed in a Optical Head. The power supply is a rechargeable 12 volt high capacity battery for longer operating life packaged in a leather case which can be clipped onto the belt. Power is furnished to the 920 via a simple phono cord. An important feature is the hold trigger located in the handle or on the extension pole when one is used. Depressing these switches holds the last measurement for recording purposes. The Model 920 is designed primarily for the measurement of traffic signs in the field.

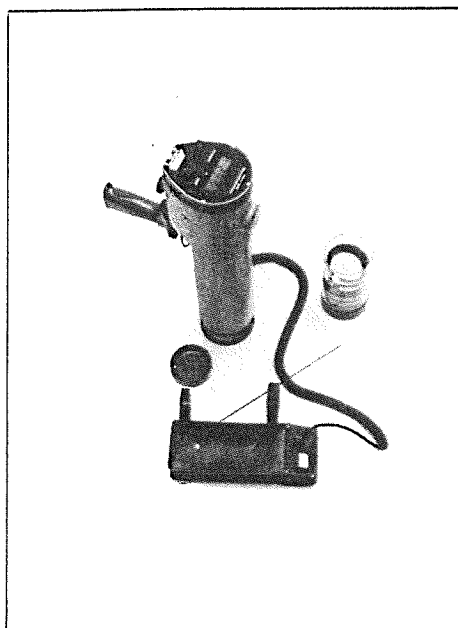
A plunger switch at the end of the barrel of the 920,

turns the light source on when the instrument is pressed against the material under test, thus extending the useful battery life. The geometry of the Model 920 is fixed at either an entrance angle of -4° or the DIN +5° (Model 920D). If incoming inspection of new material or signs is required at various geometries then the Model 930B system is recommended.

The Model 920 is a complete system including a foam lined rugged case and eight reference standards of engineering and high intensity sheeting material. The extension pole kit for the 920 (Model 907-20) contains a pole mounted hold switch and cable as well as a clear plastic disc for aid in alignment.



*Model 920 mounted on the extension pole kit (907-20) with the hold switch fixed to the pole.*



*End view of LCD Digital Panel Display measuring High Intensity Sheeting material. Reference standard cap is nearby.*



*Stylish carrying case with eight reference standards, instrument, battery, cable and recharger.*

## Specifications

### GEOMETRY

OBSERVATION ANGLE =  $0.2^\circ$  OR  $0.33^\circ$  (D)  
 ENTRANCE ANGLE =  $-4^\circ$  OR  $+5^\circ$  (D)  
 LIGHT SOURCE ANGULAR SUBTENSE =  $0.1^\circ$   
 RECEPTOR ANGULAR SUBTENSE =  $0.1^\circ$  (annular)  
 MEASUREMENT AREA = APPROX. 1 inch. (2.8 cm)

### ELECTRICAL CHARACTERISTICS

MEASUREMENT RANGE = 0.1 TO 1,999.9  
 RESOLUTION =  $4\frac{1}{2}$  DIGITAL LIQUID CRYSTAL  
 CONTROLS = ZERO (DARK), CALIBRATE, HOLD SWITCH  
 DETECTOR/LIGHT SOURCE = SILICON PHOTODIODE  
 WITH PHOTOPIC FILTER COMBINED WITH LIGHT  
 SOURCE AT CIE ILLUMINANT "A" (2856K)  
 POWER SUPPLY = RECHARGEABLE BATTERY 12 VDC,  
 WITH RECHARGER FOR 110 VAC OR 220 VAC  
 LOW BATTERY INDICATION

### CALIBRATION

REFERENCE STANDARDS = ENGINEERING GRADE,  
 WHITE, GREEN, YELLOW, RED  
 HIGH INTENSITY GRADE, WHITE, GREEN, YELLOW  
 AND RED

### PHYSICAL PARAMETERS

SIZE WITHOUT HANDLE = 18 inches (45.7 cm)  
 X 4.3 inches (10.9 cm)  
 WEIGHT = 4.5 lbs. (2.04 kg) WITH HANDLE  
 BATTERY SIZE = 10 x 3 x 1.5 inches  
 (25.4 x 7.6 x 3.8 cm)  
 BATTERY WEIGHT = 2 lbs. (0.9 kg)  
 TEMPERATURE RANGE = 0 -  $50^\circ\text{C}$   
 HUMIDITY = 5-90%  
 0 - 95% NON-CONDENSING