

TB 9-4935-552-50-2

CHANGE 2

HEADQUARTERS, DEPARTMENT OF THE ARMY, WASHINGTON, DC
17 September 1990

TECHNICAL BULLETIN FOR INTENSITY TEST SOURCE 11154040 (TA-114) AND IR PROBE 10684700 (TA-437) (LAND COMBAT SUPPORT SYSTEM)

TB 9-4935-552-50-2, dated 10 October 1985, is changed as follows:

1. Remove old pages and insert new pages as indicated below. New or changed material is indicated by a vertical bar in the margin of the page. Revised illustrations are indicated by a letter suffix adjacent to the identification number. Added or completely revised sections, paragraphs, tables, etc., are indicated by a vertical line by the title.

Remove pages

11 and 12

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2. This transmittal sheet should be filed in the front of the publication for reference purposes.

By Order of the Secretary of the Army:

CARL E. VUONO
General, United States Army
Chief of Staff

Official:

THOMAS F. SIKORA
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-34C, Block 319, Calibration Publications Requirements for Land Combat Support System (LCSS).

PIN NO: 013158-002

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CHANGE 1

HEADQUARTERS, DEPARTMENT OF THE ARMY, WASHINGTON, DC

5 January 1990

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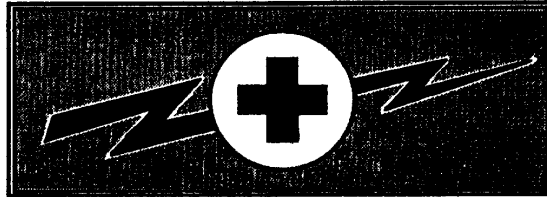
WILLIAM J. MEEHAN II
Brigadier General, United States Army
The Adjutant General

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PIN: 013158-001

WARNING



MI562272

DANGEROUS VOLTAGE

is used in the operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.

Whenever possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Be careful not to contact high-voltage connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through vital organs of the body.

WARNING

Do not be misled by the term "low voltage." Potentials as low as 50 volts may cause death under adverse conditions.

For Artificial Respiration refer to FM 21-11.

***TB 9-4935-552-50-2**

DEPARTMENT OF THE ARMY TECHNICAL BULLETIN

CALIBRATION PROCEDURE FOR INTENSITY TEST SOURCE 11154040 (TA-114) AND IR PROBE 10684700 (TA-437) LAND COMBAT SUPPORT SYSTEM (LCSS)

Headquarters, Department of the Army, Washington, DC
10 October 1985

REPORTING OF ERRORS

You can help improve this publication by calling attention to errors and by recommending improvements and stating your reasons for the recommendations. Your letter or DA Form 2028, Recommended Changes to Publications, should be mailed directly to Commander, U.S. Army Aviation and Missile Command, ATTN: AMSAM-TMD-EP, Redstone Arsenal, AL 35898-5400. You may also contact this office electronically. E-mail address is tmde@redstone.army.mil. FAX to DSN 788-2313 (commercial 256-842-2313). A reply will be furnished directly to you.

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*This technical bulletin supersedes TB 9-4935-552-50-2, dated 30 May 1984.

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**SECTION I
IDENTIFICATION AND DESCRIPTION**

1. Test Instrument Identification

a. This bulletin provides instructions for the calibration of intensity test source (ITS) 11154040 (TA114) and IR probe 10684700 (TA-437). Both items are portable test equipment in the test station of the Land Combat Support System (LCSS). Throughout the remainder of this bulletin, the item being calibrated will be referred to as the test instrument (TI).

b. There is only one model of each of these TIs.

c. The time required for this calibration is approximately 3 hours using the IR technique.

2. Calibration Data Card. Forms, records, and reports required for calibration personnel at all levels are prescribed by TB 750-25. DA Form 2416 (Calibration Data Card) must be annotated for each calibration performed.

3. Calibration Description. Test instrument parameters and performance specifications which pertain to this calibration are listed in table 1.

Table 1. Calibration Description

Test instrument parameters	Performance specifications
INTENSITY TEST SOURCE	
Filament image focus	Edges definable to within ± 0.5 milliradians
Filament image intensity	25 ± 4 watts peak-to-peak steradian
Boresight alignment	Image centered to within ± 4 milliradians
IR PROBE	
Irradiance level	1.0×10^{-10} to 5×10^{-7} WATTS/CM ²

**SECTION II
EQUIPMENT REQUIREMENTS**

4. Equipment Required

a. Table 2 identifies the specific equipment used in this calibration procedure. This equipment, excluding LCSS equipment, is issued with secondary transfer calibration set AN/GSM-286.

b. Alternate items may be used when the equipment listed in table 2 is not available. Substituted items must bear evidence of current calibration and must meet or exceed minimum use specifications.

Table 2. Minimum Specifications of Equipment Required

Item	Nomenclature	Minimum use specifications	Manufacturer's model and part number
A1 ¹	OSCILLOSCOPE	Range: 5 mV/div to 10 V/div Accuracy: ±3%	Tek 453 AN/USM 273
A2 ²	RADIOMETER	AC irradiance from 10 ⁻¹¹ WATTS/CM ² to 10 ⁻⁵ WATTS/CM ² Accuracy: ±4 to 6.5%	TAI 9200
A3	SHUNT	Range: 14 to 20 amps Accuracy: ±0.1%	Guideline 9711 (7912323)
A4	DIFFERENTIAL VOLTMETER	Range: 14 to mV dc Accuracy: ±0.1%	Fluke 887AB
A5 ²	SYSTEM POWER SUPPLY	+ 5 V dc, + 15 V ac ± 2% -12 V dc ± 0.5%	Model 92

¹LCSS equipment

²Part of electro optics test set (EOTS), 4931-01-071-1646.

5. Accessories Required

a. Table 3 lists accessories required from secondary transfer calibration set AN/GSM-286.

b. Table 4 identifies accessory equipment required from test station AN/TSM-93.

Table 3. Accessories Required

Item	Nomenclature	Description	Part number
B1 ²	RADIOMETER RING ADAPTER		7916245
B4	CABLE (2)	High current cable	7911541-3
B6	ADAPTER	Female BNC to binding post	MS 90578-1441
B7 ¹	ITS EXTENDER CABLE		7916247
B8	ELECTRICAL LEAD	Single banana plug to single banana plug (black) 24 in. long	7907498
B9	ELECTRICAL LEAD	Single banana plug to single banana plug (red) 24 in. long	7907497
B14 ²	ALIGNMENT STAND		

¹LCSS

²Part of EOTS, 4931-01-071-1646

Table 4. Equipment from Test Station

Item	Nomenclature	Description	Part number
B2	TA-237	SHILLELAGH tracker adapter	10681908
B3		Asbestos glove	HHG450TY1CL2
B5	CA-135	LCSS cable	11152056 or 11157204
B10	PB-109	Patchboard	11156521 or 11153155

Table 4. Equipment from Test Station - Continued

Item	Nomenclature	Description	Part number
B11	CA-319	LCSS cable, passive probe extender	10684119
B12	CA-127	LCSS cable, coaxial	11154531
B13	CA-320	LCSS cable, DMM probe extender	10684120

**SECTION III
PRELIMINARY OPERATIONS: ITS**

NOTE

If no ITS is to be calibrated, proceed to section V.

6. Preliminary Instructions

a. Personnel should become familiar with the entire bulletin before beginning the calibration procedure.

b. Equipment used in this calibration is referenced in the procedure by name and item numbers. See tables 2, 3, and 4.

WARNING

Dangerous voltage is used in the connections of this equipment. Death or injury on contact may result if personnel fail to observe proper safety precautions. Care should be exercised in the connections between equipment.

c. LCSS electro optic assemblies are calibrated inside the shelter. Suggested placement of standards are:

Radiometer standard - as required

Oscilloscope - in front of operator console

Shunt and voltmeter - back wall fold down table

d. Ensure that the test station has been operating for at least an hour before beginning the calibration.

NOTE

Ensure that the LCSS self-test reference 1A7 has been calibrated or bears a valid DA Label 80 prior to initiating this procedure.

- e. The ITS and IR probe will be calibrated in sections IV and VI respectively.

NOTE

The following paragraphs are divided into performance checks and adjustments. Make adjustments only when performance checks are out of tolerance. If no adjustment is specified and the performance check is out of tolerance, correct the deficiency before continuing.

7. Equipment Setup

- a. Request assistance of an experienced LCSS technician to operate and program the LCSS test station.

NOTE

The alignment test stand is part of the EOTS, 4931-01-071-1646.

- b. Assemble the alignment test stand in the ITS configuration and mount the radiometer A2 and TI as shown in figure 1.

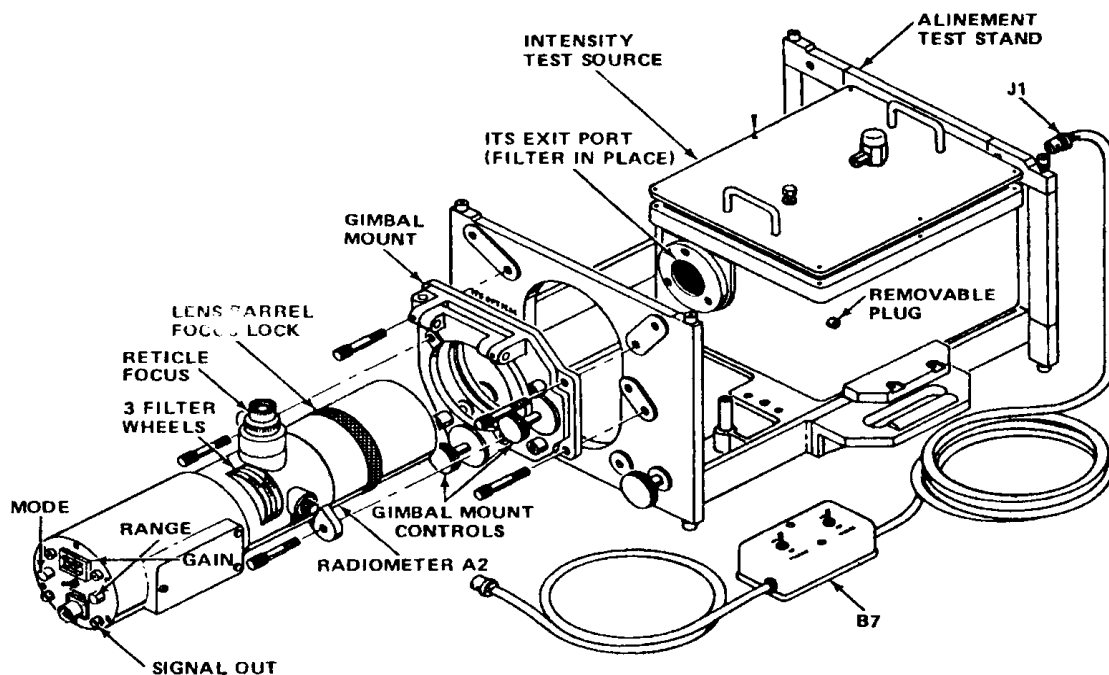
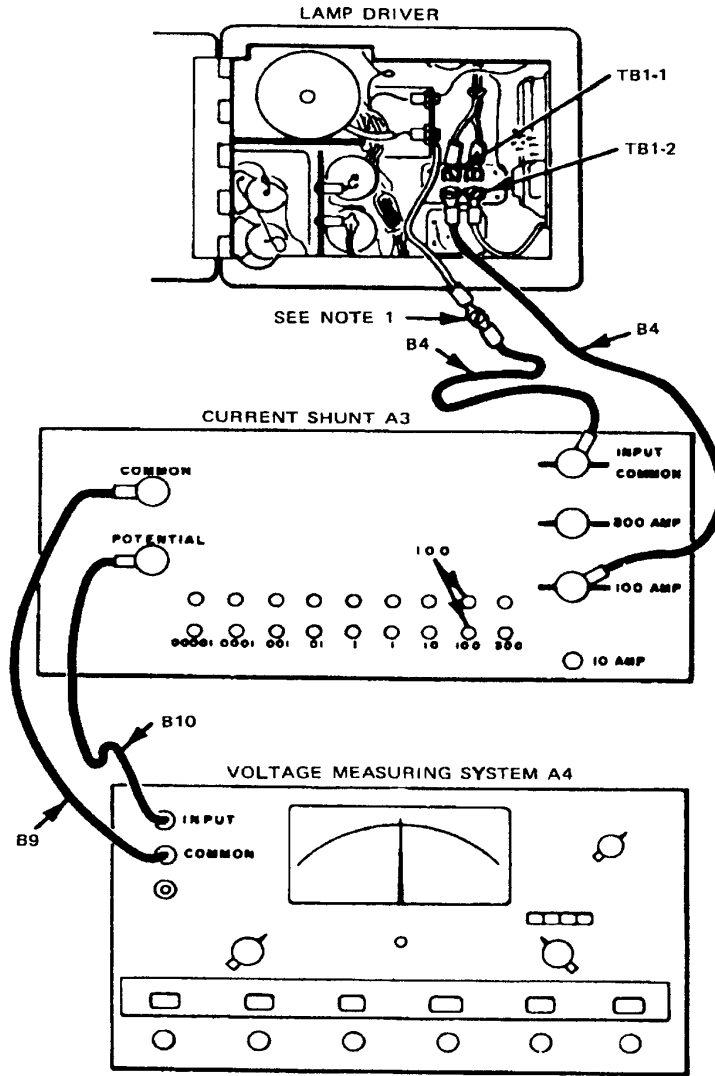


Figure 1. Intensity test source - equipment setup.

- c. Connect the radiometer A2 to system power supply A5 using cable provided.
- d. Deenergize circuit breakers on source/detector adapter power supply 2A1A1.

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e. Open test station lamp driver door and momentarily short terminals, TB1-1 and TB1-2, figure 2.



NOTE 1: **WARNING**
SHOCK HAZARD EXISTS WITH EXPOSED LEADS. WRAP WITH INSULATING TAPE FOR PERSONNEL AND EQUIPMENT SAFETY. USE ANY APPROPRIATE AND AVAILABLE BOLT AND NUT COMBINATION FOR THIS CONNECTION.

Figure 2. Lamp driver current - equipment setup.

WARNING

Wrap connected leads with insulating tape for personnel safety.

f. Disconnect lower lead from TB1-1. Connect equipment as shown in figure 2. Set the shunt range contacts to the 100 AMPERES position.

g. Set the differential voltmeter POWER to BAT OPR.

h. Set and adjust radiometer A2 controls as follows:

VIEW/DETECT to VIEW.

CAL/OP to OP.

MODE to position 1.

GAIN to ITS value shown on calibration data

RANGE to position 5.

NOTE

Ensure filter wheels are properly seated in detents.

Position the filter selector controls as follows:

NOTE

Auxilliary filter selector control (red markings) is permanently locked in position.

(1) Spectral filter consul (yellow markings) to 7-69 position.

(2) Field of view (FOV) control (white markings) to 2MR position.

Focus objective lens to infinity position.

i. Plug system power supply A5 directly into 120V/400Hz outlet J3 on the test station. Energize power supply A5.

j. Set B7 remote control POWER and PRISM switches to OFF. Connect extender cable B7 to the TI.

k. Connect TI extender cable B7 directly to J1 in the optics bench connector well.

l. Press POWER ON switch on the test station monitor panel and install PB-109 (B10).

m. Connect one CA-135 (B5) as follows: P2 to test adapter J4, P1 to lamp driver J9.

n. Set monitor panel TEST MODE switch to MANUAL and press START TEST switch.

o. Set source/detector adapter power supply circuit breakers to ON in the following sequence: 28 VDC, 208 VAC, LAMP DRIVER.

p. Program: SRSA00002@SPS2028@A.

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q. Set remote control POWER switch on extender cable B7 to **ON**, and allow 30 minutes warm-up before performing the intensity calibration in paragraph **9**.

**SECTION IV
CALIBRATION PROCEDURES: ITS**

8. Optical Focus and Boresight

WARNING

When the TI is operating as an open unit, physical injury can result if technician inadvertently touches the 110 VAC terminals, high speed rotating chopper, or the hot lamp.

CAUTION

Do not remove TI cover under extremely dusty conditions. Contamination may cause excessive wear and degradation of performance

- a.** Depressurize the TI.
- b.** Remove the cover using a 9/64 internal wrench to remove the 8 screws from the TI case.
- c.** Adjust A2 reflex sight lens control so reticle is in sharp focus.
- d.** Manually rotate the TI prism so that the filament image is parallel to the vertical axis of the reticle sight.
- e.** Adjust the gimbal mounts control on the alignment test stand until the filament image is centered on the vertical axis of the reticle, figure 3.

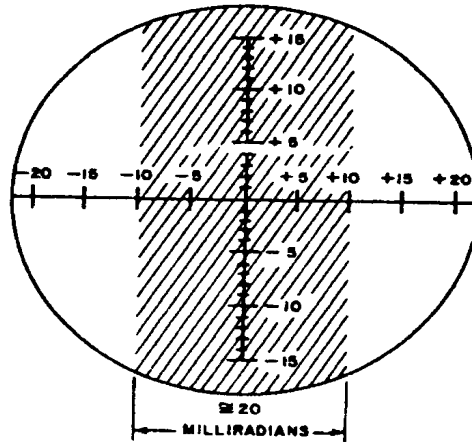


Figure 3. Vertical filament image.

f. Manually rotate the TI prism until the filament is horizontal, figure 4. Adjust the gimbal mounts control to recenter the image as required.

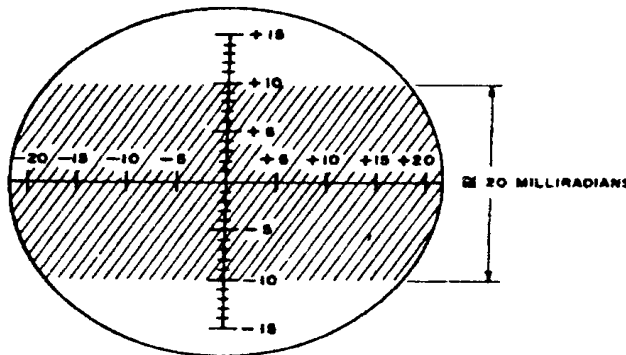


Figure 4. Horizontal filament image.

g. Observe the filament image. The filament image should be defined clearly enough to be readable to within $\frac{1}{2}$ reticle division. If the image needs focusing, go to **10a(1)**.

h. Position the top edge of the image at +10 on the reticle, figure 4.

i. Manually rotate the filament image 180 degrees cw and record the reticle position of the top edge of the image.

j. Repeat step **i** three times. Each recorded value shall be between +6 and +14. If out of tolerance, proceed to step **10b(1)**.

9. Intensity

NOTE

Do not proceed until the TI and the radiometer A2 have warmed up at least 30 minutes.

a. Recenter the filament image, if necessary, and set cover back on TI. Do not tighten cover screws.

b. Connect passive Probe A to self-test reference 1A7 (7 VAC left/right). Program SMPV12@K.

c. Test results display (TRD) shall indicate 19.80 ± 65 VPP.

d. If TRD is less than 19.15 or greater than 20.45 VPP, record the percent correction and apply to the TRD VPP indications produced hereafter.

e. Connect radiometer A2 OUT to waveform converter using passive probe A and extender cable B11, figure 5.

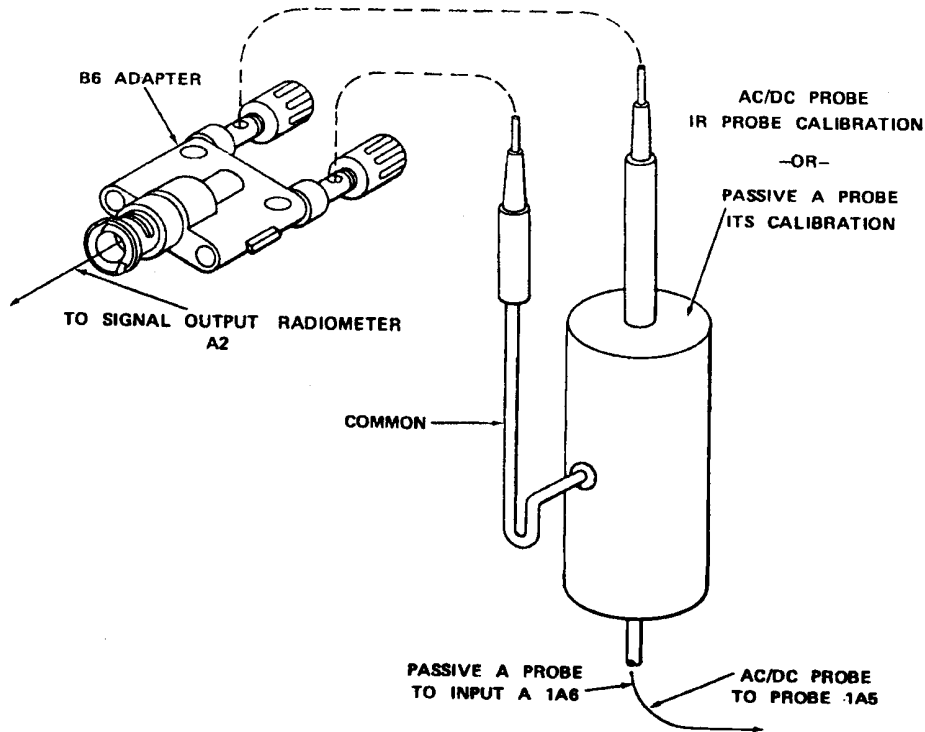


Figure 5. AC/DC and passive probe A.

- f.** Without disturbing the alignment, set VIEW/DETECT control to DETECT position.
- g.** Taking into account the percent deviation indicated in **d**, the TRD shall indicate between 1.92 and 2.08 VPP. If not, proceed to **10c**(1).
- h.** Press HALT on test station monitor panel.
- i.** Deenergize and disconnect TI and B7 extender cable. Disconnect passive probe A from radiometer A2. Do not deenergize radiometer A2.
- j.** Secure TI cover. Request the LCSS technician to nitrogen purge and repressurize the TI to 3.0 ± 1.0 psi.
- k.** In accordance with TB 750-25, annotate and affix DA Label 80. When the TI cannot be adjusted within tolerance, annotate and affix DA Form 2417.

10. Adjustments

a. Focus Adjustment

- (1) Set POWER switch on extender cable B7 to OFF.
- (2) Loosen focus lock screw, figure 6.

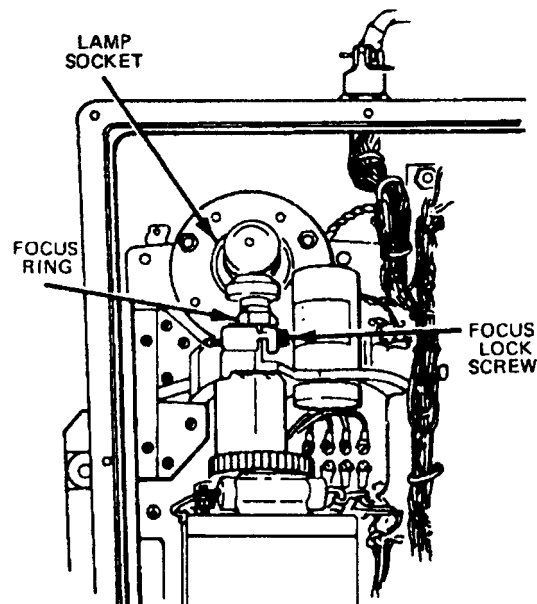


Figure 6. ITS focus and alignment points.

NOTE

Do not allow lens barrel to touch lamp envelope during or after focus adjustments.

(3) Energize TI and rotate the focus ring to obtain optimum filament focus. Filament image should be defined clearly enough to be readable within $1/2$ reticle division.

(4) If the image is within tolerance, deenergize the TI. Tighten the focus lock screw. Energize the TI.

(5) Proceed to step **8h**.

b. Bore-sight Alignment

(1) Using asbestos glove B3, carefully reseal lamp in socket, figure 6, until image is centered to within ± 2 reticle divisions upon 180 degree image rotation.

(2) Proceed to step **8g**.

c. Intensity Adjustment

(1) Remove the right side plug from TI.

(2) Attempt to adjust potentiometer inside TI to produce a TRD indication between 1.96 and 2.04 VPP.

(3) If the potentiometer cannot be adjusted to give an indication between 1.89 and 2.11 VPP, annotate and affix DA Form 2417.

(4) If in tolerance, proceed to **9h**.

SECTION V

PRELIMINARY OPERATIONS: IR PROBE

11. Preliminary Instructions

a. Personnel should become familiar with the entire bulletin before beginning the calibration procedure.

NOTE

Some of the following steps will have already been accomplished if an ITS was calibrated.

b. Ensure that the test station has been operating for at least an hour before beginning the calibration.

c. Ensure that LCSS maintenance personnel have run the maintenance calibration program (9007) if the AC or DC standards were adjusted during calibration of the self-test reference in TB 9-4935-552-50-3.

12. Equipment Setup

a. Deenergize circuit breakers on power supply of source/detector adapter.

b. Open test station lamp driver door and momentarily short terminals TB1-1 and TB1-2, figure 2.

WARNING

Dangerous voltage is present. Wrap connected leads with insulating tape for personal safety.

c. Disconnect lower lead front TB1-1. Connect equipment as shown in figure 2. Set the range contacts on shunt A3 to the 100 AMPERES position. Set POWER on differential voltmeter A4 to BAT OPR.

d. Press and release POWER ON switch on the test station monitor panel and install PB-109 (B10).

e. Connect CA-135 (B5) as follows: P2 to test adapter J4, P1 to lamp driver J9.

f. Set monitor panel TEST MODE switch to MANUAL and press and release START TEST switch.

g. Set source/detector adapter power supply circuit breakers to ON in the following sequence: 28 VDC, 208 VAC, and LAMP DRIVER.

h. Remove the shroud from the positioning table using a 5/32 inch internal wrench to remove the 6 screws.

i. Mount radiometer A2 optical head on TA-237 (B2) using alignment test stand screws. Mount TA-237 with radiometer attached on the positioning table.

j. Connect radiometer A2 to power supply A5 using cable provided.

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k. On the positioning table, release the azimuth and elevation brake levers and press the POWER ON/OFF switch to ON.

l. Program: SPS5028PGNRPGNAPGNP00625P GNW003125PGN + 05PGNSRSA1@A.

m. Rotate radiometer A2 optical head reflex sight lever to VIEW position. Adjust reticle focus as required to produce a sharp image of reticle crosshairs.

n. Loosen focus lens control on the barrel of radiometer A2 and adjust the lens barrel in and out to produce a sharp, parallax-free image of the source/detector adapter filament.

o. Center detector adapter image in radiometer A2 optical head reticle using positioning table controls.

p. Set and adjust radiometer A2 controls as follows:

CAL/OP to OP.

MODE to position 3.

GAIN to IR probe value shown on calibration data.

RANGE to position 3.

NOTE

Ensure filter wheels are properly seated in detents.

Position the filter selector controls as follows:

NOTE

Auxiliary filter selector control (red markings) is permanently locked in position.

(1) Spectral filter control (yellow markings) to 7-69 position.

(2) FOV control (white markings) to 5MR position.

q. Plug A5 directly into the 120V/400Hz outlet on the test station and energize A5.

r. Allow a 30 minute equipment warmup before performing the IR probe calibration.

SECTION VI

CALIBRATION PROCEDURES: IR PROBE

13. Radiation Level

a. Program SMAC11@K.

b. Connect AC/DC probe to self-test reference 1A7 (7 VAC left/right).

- c.** If TRD is less than 6.97 or greater than 7.05 VAC, record the percent correction and apply to TRD VAC indications produced hereafter.
- d.** Connect AC/DC probe to radiometer A2 OUT, using extender cable B13, figure 5.
- e.** Rotate VIEW/DETECT control to DETECT position.
- f.** Carefully peak the indication of TRD using positioning table controls. Carefully peak indication of TRD by adjusting lens barrel in and out. Lock the focus lens control.
- g.** Open access door of radiometer A2. Carefully peak TRD by slowly adjusting the 2KHz trimmer. Close the access door.
- h.** Adjust lamp driver 2A3A8R7 until radiometer A2 produces an indication between 2.18 and 2.22 VAC on the TRD.
- i.** If 2A3A8R7 can be adjusted within tolerance reading, proceed to step **13n**. If 2A3A8R7 cannot be adjusted within tolerance reading, proceed to step **13j**.

WARNING

Do not touch lamp with bare hands. Serious burn injuries may result.

CAUTION

If lamp is touched with bare hands, contamination of light source will result.

- j.** Remove the lamp shield and cover. Slightly loosen screws holding lamp base.
- k.** Slowly move lamp base until position that produces a maximum TRD is reached.
- l.** Lock down screws in lamp base, taking care to maintain maximum display.
- m.** Adjust lamp driver 2A3A8R7 for a radiometer A2 reading of 2.20 ± 0.02 VAC. If a satisfactory adjustment can be made, proceed to step **n** below. If adjustment cannot be made, proceed to step **o** below. If adjustment cannot be made for the second time, return the system to LCSS maintenance personnel.

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n. Check the voltage across shunt A3, using differential voltmeter A4. If the voltage indication is between 0.0162 and 0.0174 VDC, proceed to step **t**. If out of tolerance, proceed to step **j**. If out of tolerance for the second time, proceed to step **o**. If out of tolerance for the third time, return the system to LCSS maintenance personnel.

o. Set source/detector adapter power supply LAMP DRIVER circuit breaker to OFF.

p. Remove the three screws securing the lamp shield and cover.

q. Allow 10 minutes for the lamp to cool. Press down firmly on the lamp top, rotate lamp ccw 90 degrees, and remove lamp.

r. Replace lamp, lamp cover, and shield. Energize LAMP DRIVER circuit breaker. Allow 15 minutes warmup.

s. Proceed to step **13h**.

t. Program: (Press RESET then ADVANCE switches) SPGNR@. Wait 10 seconds.

u. Program: SPS3028PS3APGNAPGNP0025PG NW00125PGN + 05PGNS@K.

v. Adjust radiometer A2 controls as follows:

Spectral filter (yellow markings) to OPEN.

MODE to position 5.

RANGE to position 4.

w. Open access door of radiometer A2. Carefully peak TRD by slowly adjusting 100 Hz trimmer. Close the access door.

x. Adjust radiometer A2 GAIN to produce 2.50 ± 0.02 VAC on TRD.

y. Program: (Press RESET then ADVANCE switches) SRSA2@K.

14. Filter Checks

NOTE

Complete this paragraph even if some of the indications are out of tolerance. Provide the LCSS maintenance personnel a copy of LCSS calibration data retrieval on all ND filters ND 0.477 through ND 3.000.

- a.** TRD shall read between 0.77 and 0.96 VAC. Record reading. No adjustment can be made. If out of tolerance, notify LCSS maintenance personnel that the ND 0.477 filter is faulty.
- b.** Program: (Press RESET then ADVANCE switches) SRSA4@K.
- c.** Set radiometer A2 RANGE to position 3.
- d.** TRD shall read between 2.33 and 2.88 VAC. Record reading. No adjustment can be made. If out of tolerance, notify LCSS maintenance personnel that the ND 1.000 filter is faulty.
- e.** Program: (Press RESET then ADVANCE switches) SRSA01@K.
- f.** TRD shall read between 0.77 and 0.96 VAC. Record reading. No adjustment can be made. If out of tolerance, notify LCSS maintenance personnel that the ND 1.477 filter is faulty.
- g.** Program: (Press RESET then ADVANCE switches) SRSA02@K.
- h.** Set radiometer A2 RANGE to position 2.
- i.** TRD shall read between 2.20 and 2.88 VAC. Record reading. No adjustment can be made. If out of tolerance, notify LCSS maintenance personnel that the ND 2.000 filter is faulty.
- j.** Program: (Press RESET then ADVANCE switches) SRSA04@K.
- k.** TRD shall read between 0.73 and 0.96 VAC. Record reading. No adjustment can be made. If out of tolerance, notify LCSS maintenance personnel that the ND 2.477 filter is faulty.
- l.** Program: (Press RESET then ADVANCE switches) SRSA001@K.
- m.** Set radiometer A2 RANGE to position 1.
- n.** TRD shall read between 2.12 and 2.88 VAC. Record reading. No adjustment can be made. If out of tolerance, notify LCSS maintenance personnel that the ND 3.000 filter is faulty.
- o.** Remove radiometer A2 from TA-237.

15. IR Probe

- a. Ensure the IR probe mount has been raised to the vertical position.
- b. Install IR probe on TA-237 using radiometer A2 ring adapter (B1). Ensure that the IR probe adjustment A1R2 is accessible to the technician, figure 7.
- c. On the IR probe, set WATTS/CM² switch S1 to 10⁻⁷
- d. Ensure that the IR probe has warmed up for at least 15 minutes.

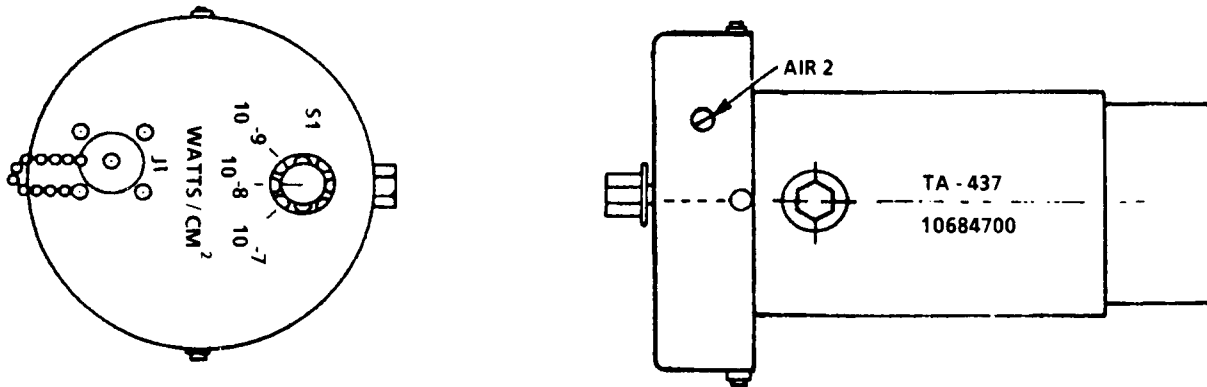


Figure 7. IR probe.

- e. Connect passive probe A to self-test reference 1A7 (7 VAC left/right). Program: (Press RESET then ADVANCE switches) SMPV12@K.
- f. TRD shall indicate 19.80 ±.65 VPP.
- g. If the TRD is less than 19.15 or greater than 20.45 VPP, record the percent correction and apply to TRD VPP indications produced hereafter.
- h. Program: (Press RESET then ADVANCE switches) SPG NR@. Wait 10 seconds.
- i. Program:SPS3RPGNAPGNP00625PGNW 003125PGN + 05PGNSTPA1414MPV-23RSA1@ AK.
- j. Position IR probe in azimuth/elevation for maximum TRD using positioning table controls. The TRD shall read between 1.470 and 1.630 VPP. If out of tolerance, adjust IR probe A1P2 to read as close to 1.55 VPP as possible.
- k. If the IR probe cannot be adjusted between 1.470 and 1.630, annotate and affix DA Form 2417.

l. Reinstall IR probe on probe mount and position in azimuth/elevation for maximum TRD indication. The TRD shall read between 1.470 and 1.630 VPP.

m. If the TRD does not read between 1.470 and 1.630 VPP, request the LCSS technician to replace the lamp within the collimator IAW **13o** through **r**.

n. Check to ensure TRD is between 1.470 and 1.630 VPP. If out of tolerance for a second time, slightly loosen the bolts holding lamp base. Slowly move lamp base until position that produces maximum TRD is reached.

o. Lock down screws in lamp base while maintaining maximum TRD.

p. Check to ensure TRD is between 1.470 and 1.630 VPP. If out of tolerance for a third time, return the IR probe to LCSS maintenance personnel.

16. Final Procedure

a. Disconnect all test equipment and return to storage.

b. Request the LCSS technician to run source/detector adapter program (9700).

c. Annotate and affix DA Label 80 in accordance with TB 750-25. When the TI cannot be adjusted within tolerance, annotate and affix DA Form 2417 (US Army Calibration System Rejected Instrument).

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By Order of the Secretary of the Army:

OFFICIAL:

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General, United States Army
Chief of Staff

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The Adjutant General

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