4807, 4807/V1, 4807A, 4807A/V1

Image Isocon Camera Tubes

For High-Resolution, Real-Time, "Low-Light-Level" TV Systems

For High-Resolution, Real-Time,
"Low-Light-Level" TV Systems

- Choice of "Flying Lead" or Permanent Base Types
- Flat Fiber-Optic Faceplate Allowing Excellent Coupling
- Extremely Simple Set-Up Procedure
- No Background Shading
- Single Non-Critical Beam-Current Adjustment
- Very High Signal-to-Noise Ratio
- Extremely High and Uniform Resolution
- Sturdy Target Highly Resistant to Intense Bursts of Light
- Low Lag
- Ruggedized
- Designed for Use With P20 Phosphor-Screen Image Intensifier
- Large Intrascene Dynamic Range Capability
- Especially useful for Coupling With an Image Intensifier
- Types 4807 and 4807A Differ Only in Certain Aspects of Performance Specifications
- Types 4807/V1 and 4807A/V1 Are Permanent Base Versions of Types 4807 and 4807A, Respectively

General Data

Direct Interelectrode Capacitance:

Anode to all other electrodes (output capacitance):

Potted . . . . 24 pF

Non-Potted (including tube base) . . . . 12 pF

Target-to-Mesh Spacing (Nominal) . . . . 0.02 in (0.5 mm)

Spectral Response (See Figure 10) . . . . Modified S-20

Photocathode, Semitransparent:

Material . . . . Na-K-Cs-Sb (Multialkali)

Useful Size of Image:

Maximum target diagonal . . . . 1.4 in (35 mm)

Maximum photocathode diagonal . . . . 1.4 in (35 mm)

Note: The size of the optical image focused on the photocathode should be adjusted so its maximum diagonal does not exceed the specified value. The corresponding electron image on the target should have a size such that the corners of the rectangle just touch the target ring.

Orientation: Proper orientation is obtained when the vertical scan is essentially parallel to the plane passing through the center of the faceplate and the index position of the shoulder base. The horizontal and vertical scan should start at the corner of the raster between the unused lead positions 2 and 3 of the shoulder base. See RCA-AJ2206 yoke assembly bulletin for proper tube-yoke orientation.

Image Surface:

Material .... Dark-Clad Fiber-Optics

Pitch (nominal center-to-center spacing) .... 6 μm

Flatness .... Within 0.5 μm

Focusing Method .... Magnetic

Deflection Method .... Magnetic

Shoulder Base .... Annular 3-leads (See Dimensional Outline)

End Base (4807, 4807A) .... Semiflexible leads potted in silicone rubber (See Dimensional Outline)

Element Decoupling .... See Footnote a

Associated Scanning-and Focusing-Coil Assembly .... RCA Type AJ2206, or Equivalent

Operating and Storage Position .... Any

Weight (Approx.) .... 1.5 lbs (680 kg)

Maximum and Minimum Ratings, Absolute-Maximum Values[b]

Voltages are with respect to thermionic cathode unless otherwise specified. All ratings are maximum unless otherwise stated.

Faceplate:

Irradiance[c] .... 25 W/m^2 (watts/square meter)

Illuminance[c] .... 50 lm/ft^2 (fc) / 500 lm/m^2 (lux)

Temperature:

Any part of bulb[d] .... 65 °C

Temperature Difference:

Between target section and any part of bulb hotter than target section .... 5 °C

Heater, for Unipotential Thermionic Cathode:

AC or DC current (pin No. 1 and pin No. 20 or lead No. 16 and 17) .... 0.63 A / 0.57 min. A

Peak Heater-Cathode Voltage:	
Heater negative with respect to cathode	125 V
Heater positive with respect to cathode	10 V
Photocathode Voltage (E_{pc})	−1000 V
Grid-No.6 Voltage (E_{g6})	−750 V
Target Voltage (E_t):	
Positive value	10 V
Negative value	10 V
Grid-No.5 (Field-Mesh) Voltage[e] (E_{g5})	600 V
Grid-No.4 Voltage (E_{g4})	600 V
Grid-No.3 Voltage (E_{g3})	600 V
Grid-No.2 Voltage (E_{g2})	450 V
Grid-No.1 Voltage (E_{g1})	−150 to −40 V
Steering-Plate Voltages:	
Plate SX_1 (E_{sx1})	600 V
Plate SX_2 (E_{sx2})	600 V
Misalignment-Plate Voltages:	
Plate SY_1 (E_{sy1})	600 V
Plate SY_2 (E_{sy2})	600 V
Anode Voltage (E_b)	1800 V
Voltage Between Adjacent Dynodes[f]	600 V

Typical Operating Values[g]

Regulation of power supply and divider network circuitry should be such that the operating values specified below are held within the limits shown.

Heater Current	±5	%
Focus Coil Current (The values of currents to which this regulation requirement applies are contained in the data sheet describing the magnetic component, e.g., AJ2206	±0.3	%
Grid-No.4 Voltage (As adjusted)	±0.2	%
Other DC Voltages (Fixed or as adjusted)	±1.0	%
Beam Blanking Pulse Voltage	+50	%
	−0	%

Voltages are with respect to thermionic cathodes unless otherwise specified. For circuit design purposes, nominal electrode currents are 10 μA or less, including leakage, except where otherwise noted.

Heater for Unipotential Cathode (Between Pins 1 and 20):			
Current	0.6		A
Voltage (nominal, for current of 0.6 A)	6.3		V
Photocathode Voltage (Image focus)[h]	−900 to −650		V
Grid-No.6 Voltage (Accelerator – approximately 63% of cathode voltage)[j]	−570 to −410		V
Target Voltage[k]	3.5		V
Grid-No.5 (Field-mesh) Voltage[e]	E_{g4} + 12		V
Grid-No.4 Voltage[m]	400 to 440		V
Grid-No.3 Voltage (Max. output)	E_{g4} + 120		V
Grid-No.2 Voltage	400		V
Current	200		μA
Grid-No.1 Voltage for Picture Cutoff	−120 to −60		V
Steering Plate Difference Voltage (Center voltage same value as grid No.4):			
$E_{sx1} - E_{sx2}$	0 to +60	max.	V
Misalignment Plate Difference Voltage (Center voltage same value as grid No.4):			
$E_{sy1} - E_{sy2}$	0 to +60	max.	V
Dynode-No.1 Voltage	375		V
Dynode-No.2 Voltage	700		V
Dynode-No.3 Voltage[n]	750 to 1050		V
Dynode-No.4 Voltage	1350		V
Dynode-No.5 Voltage[p]	1650		V
Anode Voltage	1700		V
Current	25		μA
Target Temperature Range	30 to 50		°C
Beam Blanking Voltage (Applied to grid No.1):			
Peak-to-peak	30		V
Field Strength at Center of Focusing Coil (Approx.)[q]	70		G

Performance Characteristics Range Values

With conditions shown under Typical Operating Values, picture highlights at 2 x 10^{-3} lm/ft^2 at the photocathode, 525 line scanning, interlaced 2:1, frame time 1/30 second, and 1.4" photocathode diagonal with 4 x 3 aspect ratio.

	Min.	Typ.	Max.	
Photocathode Radiant Responsivity at 440 nanometers	–	60	–	mA/W
Photocathode Luminous Responsivity (2854° K tungsten source)[w]	130	160	–	µA/lm
	2.6	3.2	–	mA/W-2854° K
Signal-Output Current (Peak-to-peak)	3	5	–	µA
Photocathode Illuminance at 2854° K Required to Reach "Knee" of Transfer Characteristic	–	.001	.002	lm/ft^2
Photocathode Irradiance at 440 Nanometers Required to Reach "Knee" of Transfer Characteristic[s]	–	–	5.7x10^{-5}	W/m^2
Signal-To-Noise Ratio:[t]				
Signal to noise-in-signal for highlights:				
4807A, 4807A/V1	26	30	–	dB
4807, 4807/V1	30	32	–	dB
Highlight signal-to-dark current noise	40	46	–	dB
Amplitude Response (Contrast transfer) at 400 TV Lines Per Picture Height (Percent of response to large-area black to large-area white transition)[u]	70	80	–	%
Limiting Resolution:				
At center of picture	1000	1100	–	TV Line
At corner of picture	850	900	–	TV Line
Geometric Distortion	–	1	–	%
Lag-Percent of Initial Signal Output Current 1/20 Second After Illuminance is Removed	–	–	3% at 2x10^{-3}	fc
	–	–	10% at 5x10^{-4}	fc

Shading (Uniformity):[v]

Black level:

Variation of output current with tube capped (Percent of maximum highlight signal):

4807A, 4807A/V1	–	2	5	%
4807, 4807/V1	–	1	2	%

Shading (Uniformity):[v]

White level:

Variation of highlight signal (Percent of maximum highlight signal):

4807A, 4807A/V1	–	15	30	%
4807, 4807/V1	–	12	15	%

a See figure showing Suggested Tube End-Base Decoupling Networks.

b A description of the Absolute Maximum Rating is given in the General Section, titled Rating Systems for Electron Tubes.

c Faceplate illuminance is limited to 50 lm/ft^2 continuously. An exposure of 10^4 lm/ft^2 for a maximum period of 5 seconds can be tolerated provided the duty cycle limits the average value to 50 lm/ft^2. See **Figure 4** for time-illuminance relationship for continuously illuminated scenes.

d Operation outside of the recommended target temperature range shown under Typical Operating Values will not damage the 4807 series tubes provided the maximum temperature ratings of the tubes are not exceeded. Optimum performance, however, is only obtained when the tube is operated within the recommended target temperature range.

e With respect to grid No.4. Grid-No.5 (field mesh) voltage must never be less than that of grid No.4.

f Dynode-voltage values are shown under Typical Operating Values.

g With the isocon within a RCA-AJ2206 scanning and focusing-coil assembly.

h Adjust for best focus. Nominal value is –750 V. This value is dependent upon the location of the tube within the yoke assembly with respect to the end of the focusing field.

j Nominal value is –470 V. This voltage should be obtained by means of a voltage-divider network between photocathode and "ground". The resistance values should be chosen to set the grid-No.6 voltage at the recommended 63% of photocathode voltage which provides best focus.

k Normal setting of target voltage is +3.5 volts from thermionic cathode potential. Target cutoff is normally within one volt of thermionic cathode potential. The target supply voltage should be adjustable from –3 to +5 volts. The target connection must never be interrupted while the tube is operating.

m Adjust for best focus. The focusing current of the associated assembly, e.g., AJ2206, should be adjusted to keep grid-No.4 voltage within its recommended voltage range.

n Adjust for required signal current.

p The gain of the electron multiplier may be varied to obtain the signal output current from a given tube most suitable for the associated video amplifier. Gain can be controlled by adjusting the voltage on one or two ot the latter dynode stages; dynode No.3 is the preferred stage. To increase the range of gain control, the voltages on dynode Nos. 3 and 5 may be simultaneously adjusted. Overall multiplier gain varies approximately as the 3rd power of anode voltage.

q Direction of current must be such that a north-seeking pole is attracted to the image end of the focusing coil.

r Dynode-No.3 voltage is adjusted for maximum signal output (approximately 1050 volts).

s The photocathode irradiance at 440 nanometers (the peak of photocathode responsivity) is related to photocathode illuminance at 2854° K by the factor 0.02865 (1/35) derived as follows:

$$\frac{\frac{1\ \mathrm{lm}}{\mathrm{ft}^2} \times 10.76\ \frac{\mathrm{ft}^2}{\mathrm{m}^2} \times 160\ \frac{\mu\mathrm{A}}{\mathrm{lm}}}{60\ \frac{\mathrm{mA}}{\mathrm{W}}} = 0.02865\ \frac{\mathrm{W}}{\mathrm{m}^2}$$

When the photocathode is irradiated at some wavelength other than 440 nanometers, the factor will differ as the relative photocathode responsivity.

t The values shown are measured under the following conditions using a Video Noise Meter, Model UPSF (North American Version), or equivalent. This meter is manufactured by Rohde and Schwarz, Munich, West Germany.
Noise Meter: Video pass band is shaped by means of self-contained 100 kHz high-pass and 4.2 MHz low-pass filters.
Signal to noise-in-signal for highlights is measured with lens uncapped viewing a uniform white field; highlight signal to dark current noise, with the lens capped.

u Measured using an RCA test pattern style P200 with the frequency response of the video amplifier systems (essentially "flat") adjusted for uniform response to all scan-generated video frequencies. Substantially identical measurements will be obtained by using a "multi-burst" test pattern with an amplifier having flat (± 0.1 dB) frequency response to at least 14 MHz.

v Variation of responses over scanned area.

w The unit, watts-2854° K, is used to designate the total radiated power in watts, integrated over all wavelengths, from a tungsten-filament lamp operated at a color temperature of 2854° K. This unit is directly converted into lumens by the following relationship: 1 watt-2854° K = 20 lumens. From this relationship, responsivity can be expressed in units of either amperes/lumen or amperes/watt-2854° K.

For example, a responsivity of 160 μA/lm is equivalent to a responsivity of

$$\frac{160\ \mu A}{lm} \times \frac{20\ \text{lumens}}{\text{watt-2854}^\circ K} = 3.2\ \text{mA/watt-2854}^\circ K$$

Also an illuminance of 1 lm/ft^2 (fc) is equivalent to an irradiance of

$$\frac{1\ lm}{ft^2} \times \frac{\text{watts-2854}^\circ K}{20\ \text{lumens}} \times \frac{10\ ft^2}{M^2} = 0.5\ \text{watt-2854}^\circ K/\text{meter}^2$$

Therefore, all references to illuminance in lm/ft^2 may be converted to watts/meter^2-2854° K by multiplication factor 0.5.

Amperes/watt-2854° K responsivity to the entire spectral output of a tungsten-filament lamp at a color temperature of 2854° K should not be confused with the unit of responsivity at a single wavelength, amperes/watt.

Spurious Signal (Blemish) Tests

This test is performed using a uniformly diffused white test pattern that is separated into three zones as shown in **Figure 1**. The tubes are operated under the conditions specified

Set-Up Procedure

The set-up procedure described below should be followed carefully to obtain optimum performance. Before the specified voltages shown under Typical Operating Values are applied to the tube, the scanning coil, tube filament, and focusing coil should be energized. Focusing coil current, using the RCA assembly AJ2206, should be adjusted to 600 milliamperes. The following steps should then be followed sequentially.

Step 1: Light should be admitted to provide a nominal faceplate illumination of 0.01 to 0.1 lumen/ft^2 (footcandle). This is a very important step for all image orthicons and image isocons. Control of target potential may be lost if the tube is started without light on the photocathode. To regain control, turn off the beam and apply light to the photocathode (all voltages applied) for 20 to 30 seconds, then resume normal operation.

Step 2: The voltage values specified under Typical Operating Values may then be applied to the tube with the exception that the steering-plate and misalignment plate differential voltages are set to the voltage values supplied with the tube or to +25 volts.

Step 3: Grid-No.1 voltage is adjusted to provide a small amount of beam current so that video information appears on the monitor.

Step 4: To center the image on the target, adjust the deflection circuits so that the beam will "overscan" the target. Note that overscanning the target results in a smaller-than-normal picture on the monitor. After centering the image, return to normal scan size.

Step 5: Grid-No.1 voltage is readjusted to fully discharge the target.

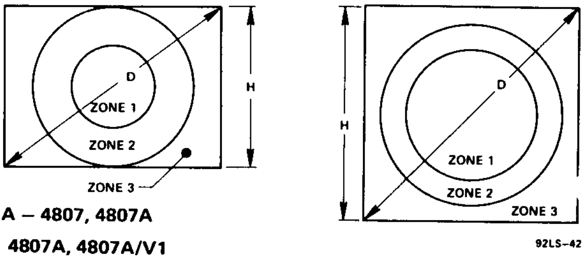
Step 6: Optical elements, photocathode voltage (image-section focus), and grid-No.4 voltage (scanning-under Typical Operating Values. The tubes are adjusted to provide maximum picture resolution. Spurious signals are evaluated by size which is represented by equivalent numb of raster lines in a 525 TV line system. Allowable spots si... for each zone is shown in Table I. To be classified as a spot, a contrast ratio of 1.5:1 must exist for white spots and 2:1 for black spots.

Table 1

Equivalent Number of Raster Lines	Zone 1 Allowed Spots	Zone 2 Allowed Spots	Zone 3 Allowed Spots
Over 6	0	0	0
6 but not including 4	0	0	4
4 but not including 1	2	6	6
1 or less	Spots of this size are allowed unless concentration causes a smudged appearance.		

Minimum separation between any 2 spots greater than 1 raster line is limited to 16 raster lines.

Spurious Signal Zones



A – 4807, 4807A

B – 4807/V1, 4807A/V1

4807A, 4807A/V1

D: Active Target Diameter
H: Raster Height (4 x 3 Aspect Ratio)
Zone 1: Diameter - H/2, Area ≈ 15%
Zone 2: Diameter = H, Area ≈ 45%
Zone 3: Area ≈ 40%

4807, 4807/V1

D: Active Target Diameter
H: Raster Height (1 x 1 Aspect Ratio)
Zone 1: Diameter = .62H, Area ≈ 30%
Zone 2: Diameter = .87H, Area ≈ 30%
Zone 3: Area ≈ 40%

section focus) are adjusted to provide best focus. The proper setting for grid No.4, about 420 volts, is that value providing best resolution regardless of picture polarity.

Step 7: Increase positive $E_{sx1} - E_{sx2}$ to picture cut-off and back off to best picture.

Step 8: Reduce target voltage to cut-off and set $E_{sx1} - E_{sx2}$ to the minimum positive value that eliminates bright edges.

Step 9: Increase target voltage to 3.5 volts and adjust $E_{sy1} - E_{sy2}$ for best uniformity. Use the minimum value which provides acceptable performance. Readjust beam if necessary.

Step 10: Reduce target voltage to determine new cut-off value. Target cut-off voltage is changed by the adjustment of E_{sy1}-E_{sy2}. (It should not exceed +1.0 volt). Set target voltage to 3.5 ± 0.2 volts.

Principles of Operation

Similar to the conventional image orthicon, the isocon has three functional sections – an image section, a scanning section, and an electron-multiplier-type signal current amplifier section – as shown in **Figure 3**. Operation of both the image section and the multiplier section is identical to that of the conventional image orthicon. The behavior of the scanning beam of the image isocon, however, differs from that encountered in the image orthicon.

Scanning Operation

The charged target is scanned by a low-velocity electron beam produced by a conventional electron gun. The primary (outbound) beam receives the required amount of transverse energy and the proper trajectory to pass through the beam-separation structure by means of transverse fields established by the electrostatic alignment plates.

The beam emerging from the beam-separation structure is focused at the target by the magnetic field of the external focusing coils, the electrostatic field of the wall electrode (grid No.4), and the field mesh (grid No.5). Under the influence of these fields, each electron traverses a helical path; the paths converging at the target. The fields of the steering plates are used to deflect electrons of the primary and return beams to allow control over beam trajectory. Scanning is accomplished by transverse magnetic fields produced by the external scanning coils.

By proper adjustment of electrode voltages including those of the field mesh (grid No.5) and grid No.4, the beam, regardless of its lateral deflection, is caused to approach the target at a fixed angle with zero or nearly zero velocity. The beam deposits sufficient electrons to neutralize the positive charges accumulated during the preceding frame time. Beam electrons having insufficient energy to reach the target are specularly reflected and constitute part of the return beam. Beam electrons reaching the target at positively charged areas but not captured are scattered and also become part of the return beam.

The term scattered electrons applies exclusively to the non-specularly reflected electrons obtained when the beam interacts with the surface of the target and are thus distinguished from the remainder of the returning electrons which are termed reflected electrons. The number of scattered electrons obtained is at a maximum in the lighted portions (positively charged areas) and essentially zero in the dark portions of the target. (It is to be noted that although the total return beam is a minimum in the bright areas of the target where electrons are deposited, the number of scattered electrons is a maximum). The total return beam remains under the influence of the magnetic field of the focusing coil and the electrostatic field of grid No.4. The helices described by the scattered electron portion have greater diameters than those described by the reflected electrons. The return beam now comes under the influence of the field of the steering plates and is directed toward the beam-separation edge. The beam-separation edge passes the scattered electron portion of the return beam and captures the reflected electron portion. The scattered electrons accordingly strike the first dynode of the multiplier section. As a result, secondary emission occurs. The emitted secondaries, after multiplication, are collected by the anode as the signal output current.

Camera Design Notes

1. Unless otherwise noted, the specified voltage values are referenced directly to the thermionic cathode which is grounded. No significant impedances should be introduced between the cathode and power-supply return points ("grounds"). The resistance of normal circuit conductors is deemed insignificant.
2. Designers familiar with conventional image orthicon circuitry are urged to note the following differences when designing circuits for use with the isocon:
   a. Gun (beam) blanking is used instead of target blanking.
   b. The polarity (sense) of the isocon output video signal is the inverse of that of conventional image orthicons. Maximum light produces maximum anode current.
   c. A separate connection is provided for the "persuader" multiplier focus electrode G_3. Its design is such that it may be tied to G_4. Maximum output may require it to be more positive than G_4.
   d. The annular decelerator electrode, G_5, featured in most image orthicons is not used, nor provided in the 4807 series. The designator "G_5" has been reassigned to the field mesh.
   e. The insertion of shading signals is neither recommended nor necessary. This eliminates 2 or 4 controls.
   f. These tubes will NOT operate properly at any beam focus loop number other than that obtained by the application of the magnetic and electric focus fields shown under Typical Operation.
   g. Automatic beam control is not needed.
3. The gain of the electron multiplier output section is readily varied by adjustment of its operating voltages. Depending on the range of control required, the voltage on one or several dynodes may be made adjustable. The following precautions should be observed:

a. Do not vary dynode No.1 voltage for gain-control purposes.

b. Under most conditions, adjustment of only dynode No.3 voltage is the preferred gain control mode.

c. Under no circumstances should operation be attempted where the voltage on a given dynode is outside the range established by the two adjacent dynodes, i.e., $E_{dy(n-1)} \leqslant E_{dy(n)} \leqslant E_{dy(n+1)}$.

Operation outside of these limits will not damage the tube but will result in entirely unsatisfactory multiplier action. (This requirement is not unique to these tubes – the principle applies generally to electron multiplier equipped tubes).

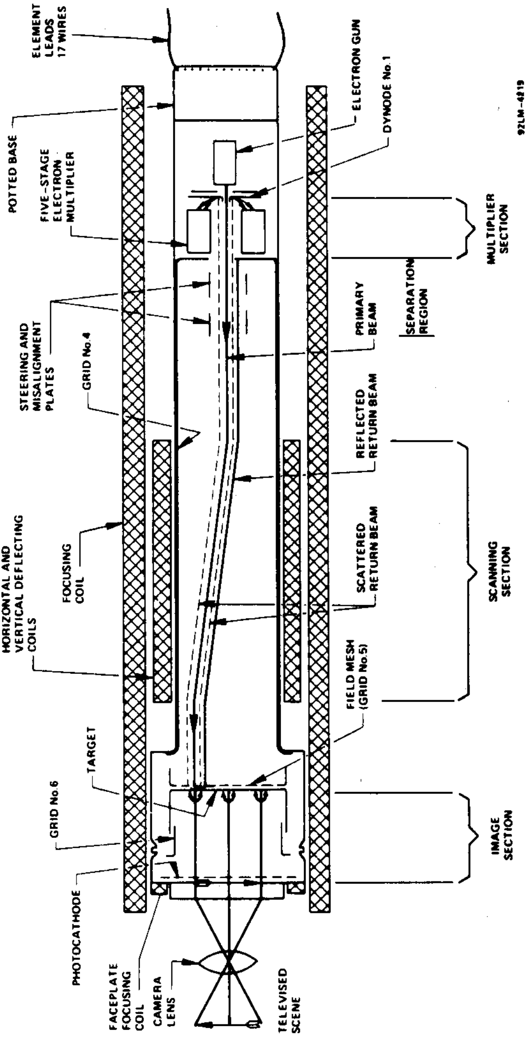
d. If several dynode voltages, including that of dynode No.5 are varied simultaneously, care should be taken to avoid allowing the voltage between dynode No.5 and anode to vary to the point where anode collection efficiency is reduced. A practical minimum voltage for $E_b - E_{dyn5}$ is 35 volts.

4. "Raster Zoom", at least 4:1, can be employed without damage to the tube. Resolution degradation can be expected to the same degree as the change in scan size.

5. Raster orientation (See Data) is extremely important. Vertical scan reversal is normally not recommended and should not be used without contacting your RCA field representative for factory recommendations concerning your system.

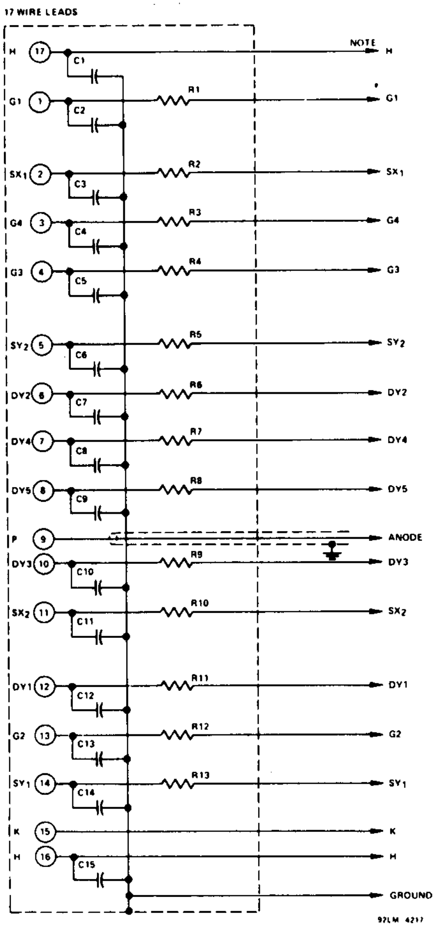
6. Scan-failure protection. Nothing elaborate is needed as long as grid No.1 voltage does not fall to zero. In this context, note that a normal shutdown of equipment could cause damage unless the coupling time constants are such that the (negative) G_1 voltage will decay more slowly than the (positive) voltages on G_2 and/or G_4.

Schematic Arrangement of Type 4807 in AJ2206 Magnetics Assembly



Suggested Tube End-Base Decoupling Networks for 4807, 4807A

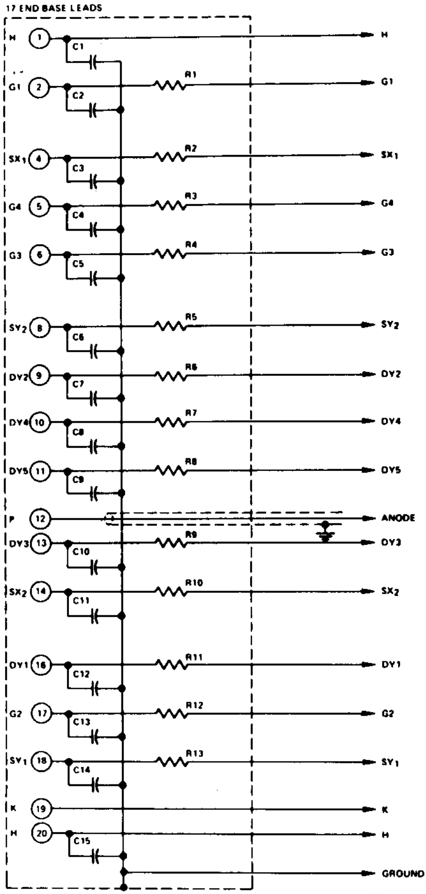
Each lead is identified. Leads are approximately 9" (230 mm) long.



C1, C15: 0.1 μF
C2 through C7: 0.01 μF, 1000 V
C8, C10: 0.01 μF, 1600 V
C9: 0.01 μF, 2000 V

Suggested Tube End-Base Decoupling Networks For 4807/V1, 4807A/V1

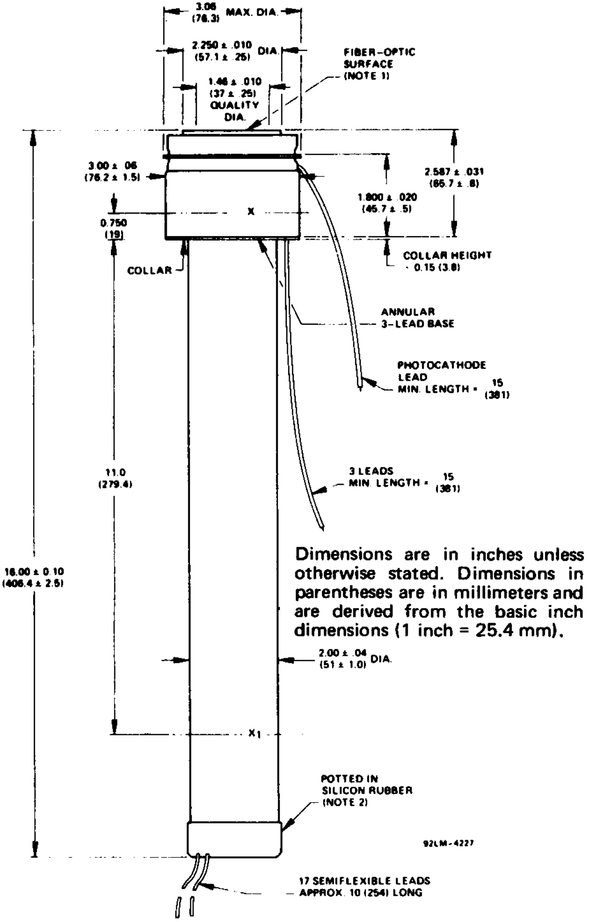
Each Lead is identified. Leads are approximately 9" (230 mm) long.



97LM 4232

C11 through C14:	0.01 μF, 1000 V	R12:	51 k, 1/4 W
R1 through R11:	100 k, 1/4 W	R13:	100 k, 1/4 W

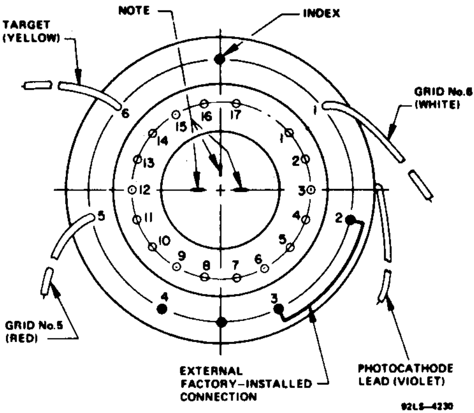
Dimensional Outline For Types 4807 And 4807A



Dimensions are in inches unless otherwise stated. Dimensions in parentheses are in millimeters and are derived from the basic inch dimensions (1 inch = 25.4 mm).

Note 1: Perpendicularity to fiber optic surface is 0.002" T.I.R. Centering is determined by holding and rotating at positions X-X_1 above.

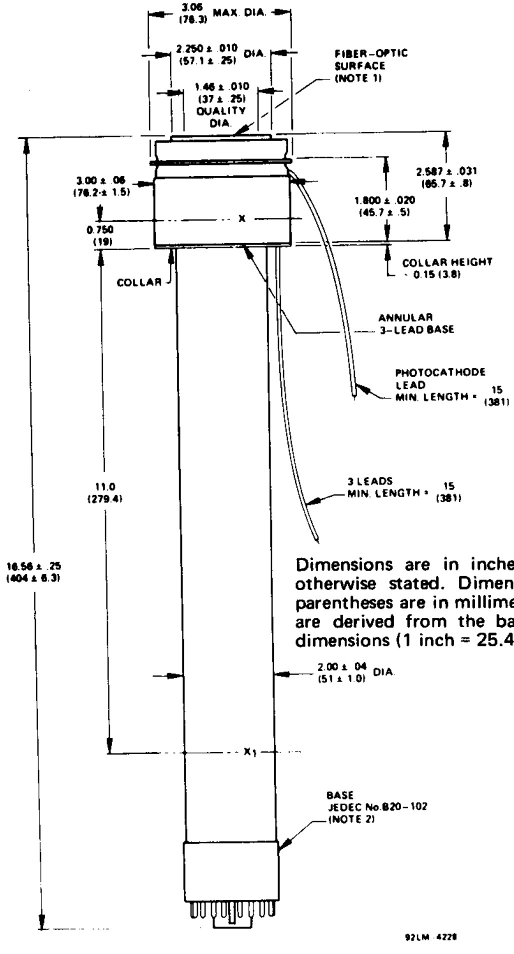
Enlarged Bottom View, Types 4807 And 4807A



Base Lead	Description	Color Code Body	Color Code Stripe
1	Grid No.1	Brown	1 Green
2	Steering Plate SX_1 (+)	Blue	–
3	Grid No.4	Brown	1 Red
4	Grid No.3	Brown	1 Orange
5	Misalignment Plate SY_2 (–)	Orange	–
6	Dynode No.2	Brown	2 Green
7	Dynode No.4	Brown	2 Orange
8	Dynode No.5	Brown	2 Red
9	Anode	Red	–
10	Dynode No.3	Brown	2 Yellow
11	Steering Plate SX_2 (–)	Green	–
12	Dynode No.1	Brown	2 Blue
13	Grid No.2	Brown	1 Yellow
14	Misalighment Plate SY_1 (+)	Yellow	–
15	Cathode	Brown	1 Blue
16	Heater	Brown	–
17	Heater	Brown	–

Note – Scribe marks on base for alignment in RCA-AJ2206 yoke assembly. Refer to bulletin AJ2206 for alignment procedure.

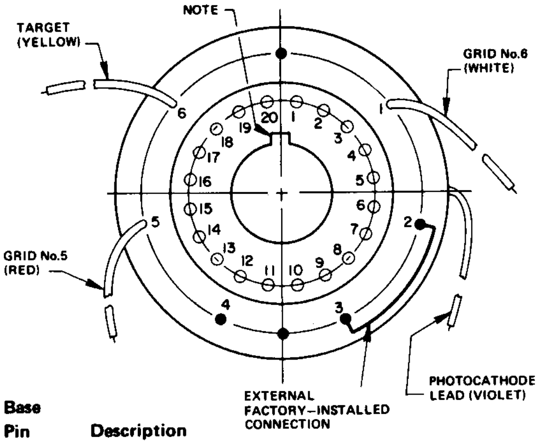
Dimensional Outline For Types 4807/V1 And 4807A/V1



Dimensions are in inches unless otherwise stated. Dimensions in parentheses are in millimeters and are derived from the basic inch dimensions (1 inch = 25.4 mm).

Note 1: Perpendicularity to fiber optic surface is 0.002" T.I.R. Centering is determined by holding and rotating at positions X-X_1 above.

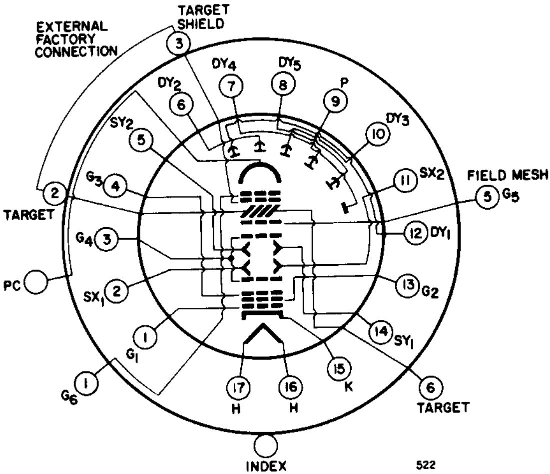
Enlarged Bottom View, Types 4807/V1 And 4807A/V1



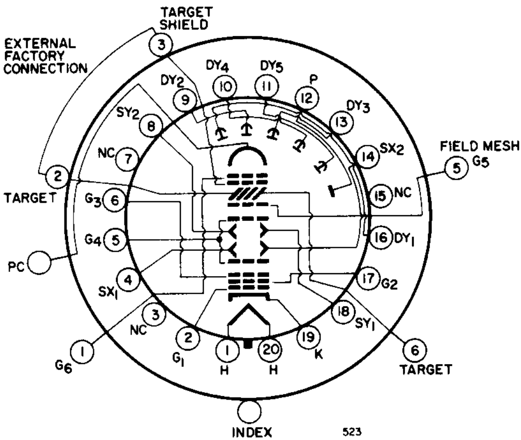
Base Pin	Description
1	Heater
2	Grid No.1
3	Internal Connection — Do Not Use
4	Steering Plate SX_1
5	Grid No.4
6	Grid No.3
7	Internal Connection — Do Not Use
8	Misalignment Plate SY_2
9	Dynode No.2
10	Dynode No.4
11	Dynode No.5
12	Anode
13	Dynode No.3
14	Steering Plate SX_2
15	Internal Connection — Do Not Use
16	Dynode No.1
17	Grid No.2
18	Misalignment Plate SY_1
19	Cathode
20	Heater

Note — Align between "H-H" scribe marks on base of RCA-AJ2206 yoke assembly. Refer to bulletin AJ2206 for alignment procedure.

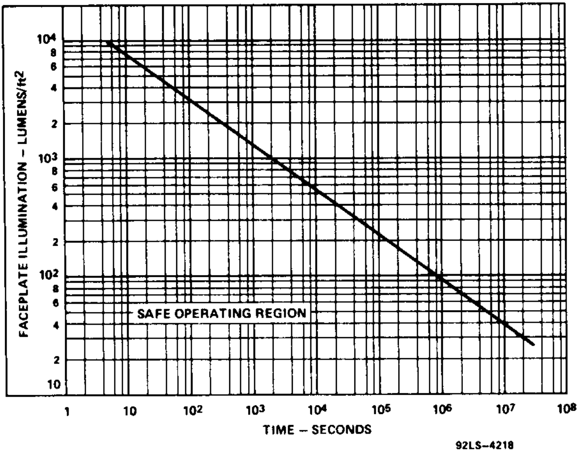
Basing Schematic For Types 4807 And 4807A



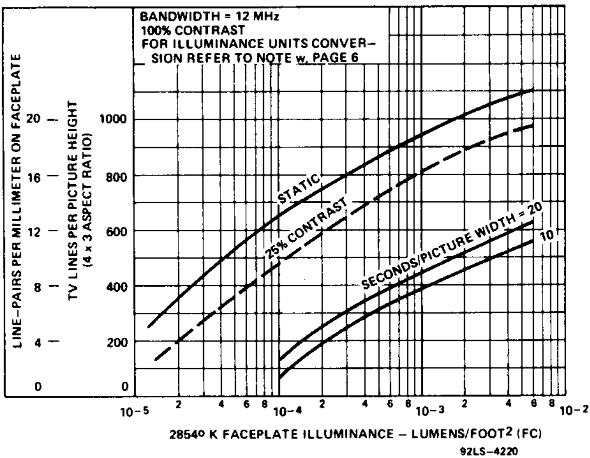
Basing Schematic For Types 4807/V1 And 4807A/V1



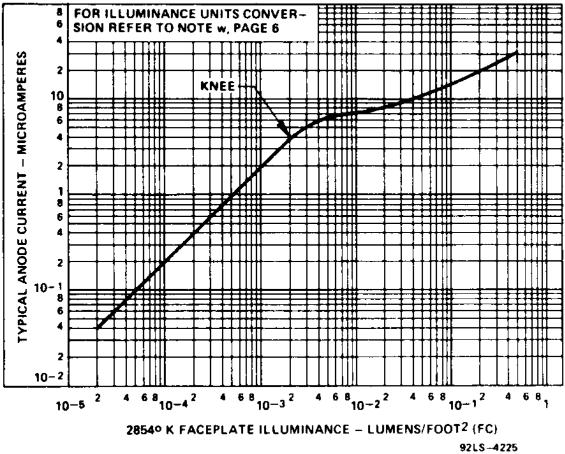
Faceplate Exposure Limit



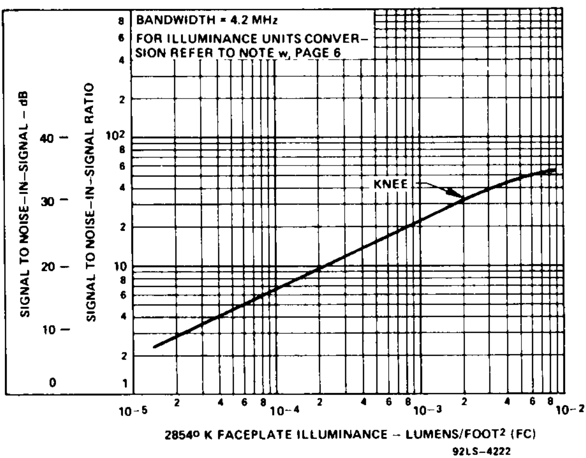
Typical Dynamic Limiting Resolution



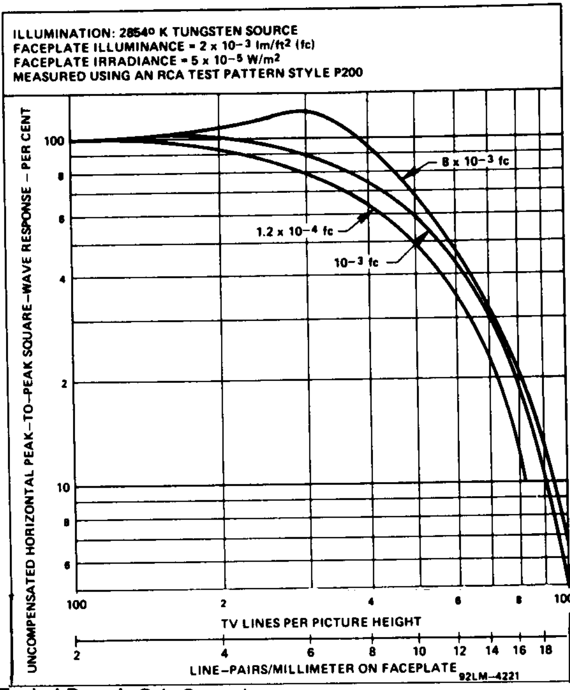
Typical Transfer Characteristic



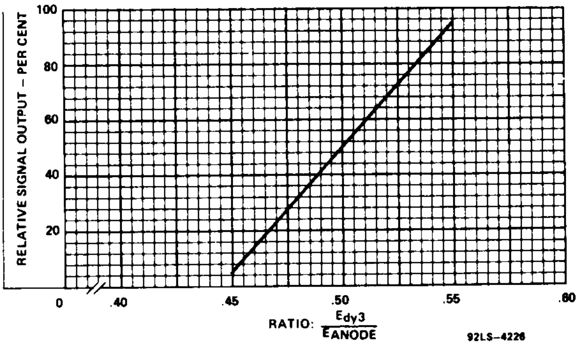
Typical Signal to Noise-In-Signal Ratio As A Function of Faceplate Illuminance or Irradiance From Flux Levels Within A Given Scene. (Beam Adjustment Fixed At 2 x Knee Setting)



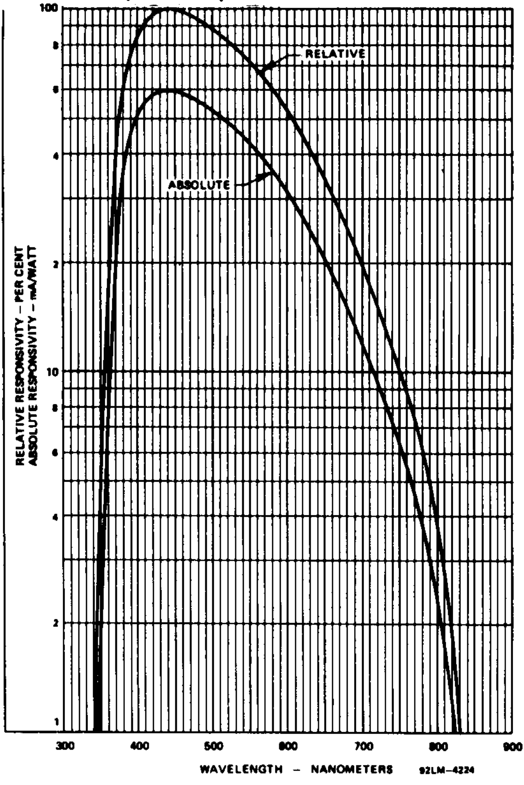
Typical Amplitude Response (CTF) Characteristic



Typical Dynode Gain Control



Typical S-20 Spectral Response



Residual Signal (Lag) Characteristic