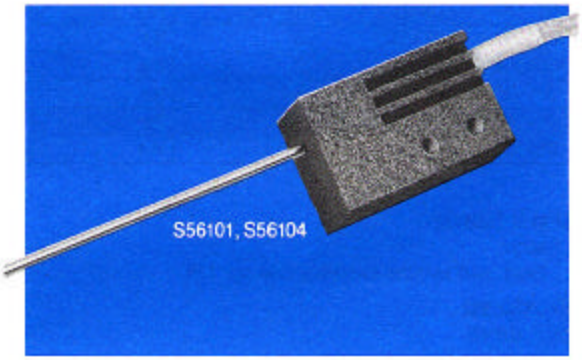
CLAROSTAT
SENSORS AND CONTROLS GROUP

SKAN-A-MATIC®

REFLECTIVE SKANNERS

Fiber Optic Flexible Snout
S56 Series
NANO-SKAN®



Features:

- Smallest Detectable Object: .007 in.
- Optimum Distance to Target: .010 in.
- Field of View: .020 in.
- Maximum Usable Distance: .070 in.
- Coaxial optical system
- Lamp, IR LED, or Visible Red LED Versions
- Available with snout lengths to 12 in.
- Formable snout
- Works in places normally inaccessible to other skanners
- High temperature tips, operable up to 200°C

Description:

Light from the lamp or LED located in the backbody is transmitted coaxially to the target through the outer ring of glass fibers in the formable snout. Light then reflects from the target back through the inner fiber optic bundle to the photodetector in the backbody. This provides maximum light to dark contrast and the most efficient return of light to the sensor.

The semi-rigid snout containing the coaxial fiber bundle can be bent easily by hand to position the tip at the target and the desired shape is self-retaining. The snout tip is hardened stainless steel to enable clamping with a nylon set screw. An aluminum backbody acts as heat sink to minimize sensor drift due to lamp heat.

Typical Applications:

- For inspection and sorting
- Detecting semiconductors
- Encoders
- Small parts handling
- Accurate edge and position control
- Vibratory bowl Feeders

Specifications: (at 25°C)

LIGHT SOURCE—LAMP

Input	5.0 VDC, 115 mA

LIGHT SOURCE—IR LED

Input	100 mA max. with resultant voltage drop of 1.1 to 1.7 VDC; derate at 1 mA per degree above 25°C ambient
Modulated Input	1 A max., 10% duty cycle at 1 kHz min.
Reverse Voltage	2 V max.
Spectral Emission	940 nm peak

LIGHT SOURCE—VISIBLE RED LED

Input	50 mA max. with resultant voltage drop of 1.8 VDC typical; derate at 1 mA per degree above 25°C ambient
Modulated Input	80 mA max., 50% duty cycle at 1 kHz min.
Reverse Voltage	4 V max.
Spectral Emission	660 nm peak

PHOTODETECTOR

Operating Voltage	20 VDC max.
Response Time	See Response Time Chart under *Technical Information*
Spectral Response	910 nm peak
FILTER (optional)	Transmits less than 5% at 700 nm and less than 0.1% at 600 nm
BODY	Aluminum/plastic composite — black for lamp units, red for IR and visible red LED units.
TEMPERATURE	Operating: Body 0° to 50°C Tip −40° to 200°C Storage: −40° to 50°C
LEADS	4 cond. 26 AWG., teflon covered cable with shielded photodetector leads and overall shield, 6 ft. long, Type J (Shielded Quad)

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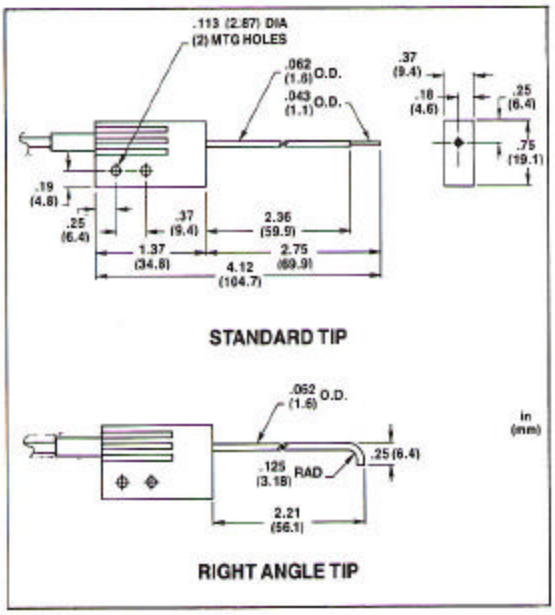
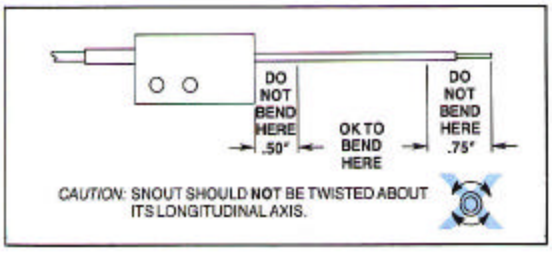
Dimensions:

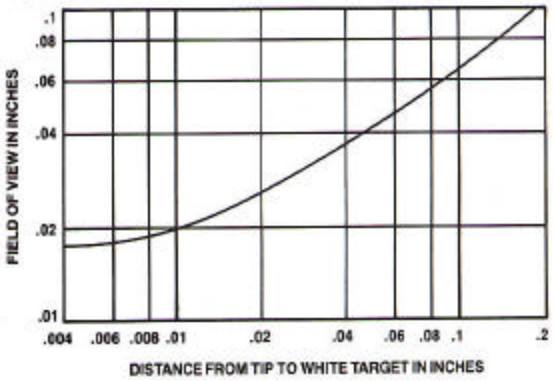


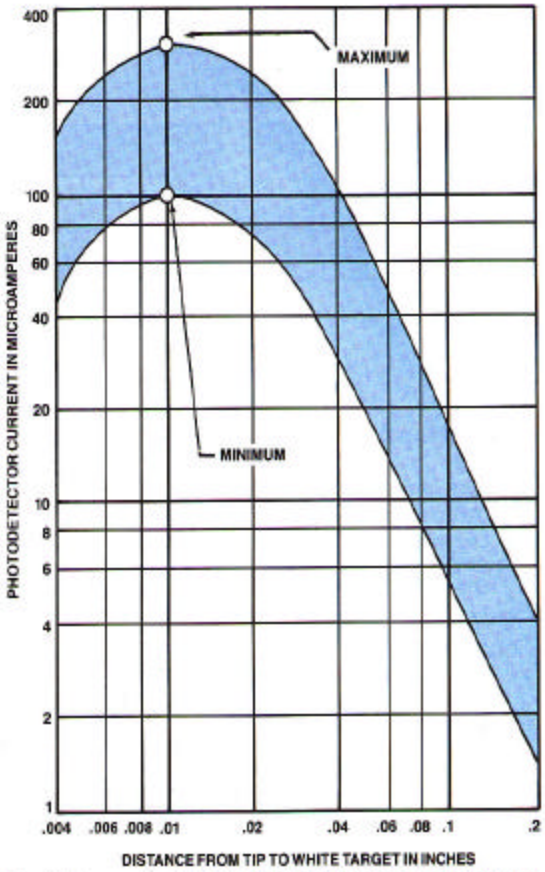
FORMING SNOUT

CAUTION: DO **NOT** USE PLIERS OR SHARP CORNERS FOR FORMING. Use of pliers or sharp corners for forming will destroy units. Bend snout by hand on a pencil or similar cylindrical object that is .25" diameter or larger. The snout is annealed stainless steel and will work harden if bent repeatedly.



Typical Performance Chart:





Circles indicate guaranteed test limits. See Quality Control under *Technical Information*, pg. 16.

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Compatibility With Controls:

The S56 Series is compatible with all Skan-A-Matic controls except modulating controls which are used with LED skanners only. For high speed operation use the T41300 High Speed Amplifier.

The **IR LED** versions of this series utilize a 100 mA Light Emitting Diode. A 39 ohm, 1 W current limiting resistor is supplied and must be used with Skan-A-Matic controls furnishing 5 VDC for light source power. With modulating controls such as our R42/T42 and R43/T43, no current limiting resistor is used.

The **visible red LED** versions of this series utilize a 50 mA Light Emitting diode. A 68 ohm, ½ W current limiting resistor is supplied and must be used with Skan-A-Matic controls furnishing 5 VDC for light source power. With modulating controls such as our R42/T42 and R43/T43, a 6.8 ohm, ¼ W current limiting resistor must be used.

Model Selection Guide:

To specify the S56 Series skanner construct a six digit part number denoting snout style, light source, and filtered or unfiltered unit. Construct part number as follows.

Part #	S	5	6			

Snout Style	#
Semi-rigid	1
Semi-rigid with right angle tip	2
Flexible monocoil. Overall length 4.5"	4

Light Source	Filter	#
Lamp	No . . .	01
Lamp	Yes . . .	02
IR LED	No . . .	04
IR LED	Yes . . .	05
Visible red LED	No . . .	08

Variations:

LEADS

Extra lead lengths available. *See pg. 129.*

SNOUTS

Lengths from .500 in. to 12 in. maximum are available. Contact factory.

Snouts can be factory-formed to customer specifications.

Options:

COIL CORD

Four conductor, 28 gauge, coil cord with shield available in 10 ft. (fully extended) or 20 ft. (fully extended) lengths — *see pg. 129.*

PROTECTIVE SHEATH

Can be factory installed over standard Type J lead (Shielded Quad) only. Order by adding the suffix as follows:

- **-M** For square locked galvanized steel with black PVC jacket, 9/32" O.D. Example: S56101-M
- **-S** For square locked stainless steel armor, 3/16" O.D. Example: S56101-S

CONNECTOR

The S56 Series skanner is available with the connector installed. The mating half is furnished for field connection. Order by adding a suffix as follows:

- **-P** For connector pair with in-line receptacle. Example: S56101-P
- **-F** For connector pair with flanged, panel-mount receptacle. Example: S56101-F

See *Options* for a more detailed description.

Wiring Diagram: