SRI-E0001

Ruggedized NIR
Infrared Illuminator
800-0000076-000

Features
· 850nm infrared wavelength
· Illumination up to 131 feet (40 m)
· Infrared beam angle 30°
· Most advanced high performance IR LED modules
· Unregulated 28VDC airborne power operation
· Weather-tight housing
· Low power consumption of 6 W or less (at 28 VDC) when heater is not on.
· Operation down to -55 Deg C

General Description
The SRI-E0001 IR Illuminator provides near-IR light for viewing objects under a low light level condition compatible with Sekai's near-IR cameras. Its initial application was to provide light on a tarmac in the front of Unmanned Aerial Systems (UASs) during taxiing. It was designed and tested to operate reliably under harsh RTCA/DO-160G airborne environments.

The 850nm illumination covers a 30° angle, and up to 131 feet (40 meters). It is encased in a weather-tight machined aluminum housing with a scratch resistant sapphire window. An automatic heating system is used to enable operation at temperatures down to -55 °C. It accepts unregulated 28VDC required by most airborne applications, and enables standard day/night CCTV systems to deliver high-contrast images in complete darkness.

Performance & Specifications

Frequency
850nm

Illumination Beam Angle
30° minimum

Range
Up to 131 feet (40m) of useful range.
Range is defined as useful picture from a SekaiRSC-BC103 camera using SVL-4.5/1.8NF lens.

LED ON/OFF Control
Control lines arepart of the input power connectoras defined below. When the LED ENABLE (Pin 4) and ENABLERETURN LINE (Pin 5) are open, the LED is on.When the LED ENABLE (Pin 4) and ENABLERETURN LINE (Pin 5) are shorted with less than10 ohms, the LED will be off.

Supply Voltage
+18 to 34.3V DC (28VDCNominal)

Power Consumption (Max)
Power consumption when only the LED is enabled - 6 Watts.
Power consumption when only the heater is on - 10 Watts.
Power consumption when both the heater and LEDis enabled - 16 Watts

* Target values only. Consult with Sekai for the latest status / reports.

Environmental Specifications

Operating Temperature:-55°C to +70°C
Storage Temperature: –55°C to +85°C
Relative Humidity: 5% to 95% non-condensing.
Storage Humidity: 95% (50°C) to 85% (38°C)

Mechanical Specifications

Housing: Machined Aluminum, 6061-T6
Finish: Black Hard Anodize per MIL-A-8625, TYPE III, CLASS 2
Dimensions: See last page.
Weight: 260 ± 26 grams (0.57 ± .057 lbs)

Interface Specifications

Connector: 88-569771-35P
Mating Connector: D38999/26WA35SN
Strain Relief: M85049/38-9W

Connector Pin Configuration:

Pin No.	Signal
1	+28VDC
2	+28VDC RETURN
3	CASE GND
4	ENABLE
5	ENABLE RETURN
6	N/C

Airborne Standards

RTCA DO-160G applicable limits, procedures & categories:

Section 4 Temperature and altitude – Category C2
Section 6 Humidity – Category C
Section 7 Operational shock and crash safety – Category A
Section 8 Vibration – Category R curve G (Rotary Wing)
Section 9 Explosion Proofness – Category E
Section 10 Waterproofness – Category S
Section 11 Fluid Susceptibility - Category F
Section 12 Sand & Dust - Category S
Section 13 Fungus Resistance - Category F
Section 14 Salt Fog - Category S
Section 16 Power input – Category B
Section 17 Voltage Spike – Category B
Section 18 Audio Frequency Conducted – Category Z
Section 20 Radio Frequency Susceptibility – Category Y
Section 21 Emission of RF Energy – Category M
Section 22 Lightning induced Transient Susceptibility – Category A3J3L3
Section 25 ESD – Category A

Specifications are subject to change without notice.

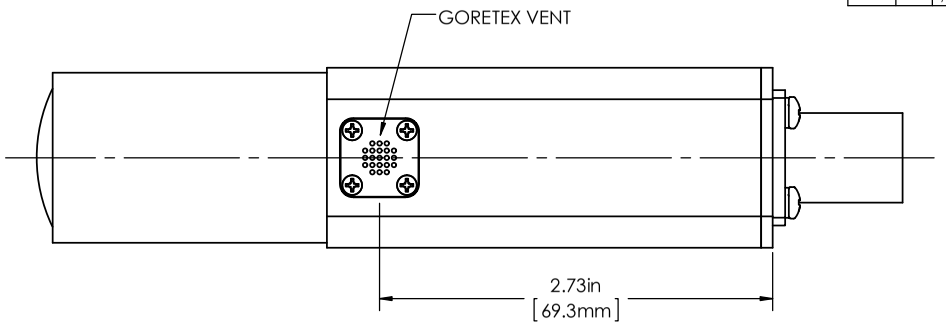
REVISIONS				
REV	BY	DESCRIPTION	DATE	APPROVED
A	JC	RELEASED FOR TECHNICAL INFORMATION	11/24/2015	MN
B	JC	REVISED SIGNAL DESCRIPTIONS. ADDED NOTES 4, 5 & 6.	12/11/2015	MN

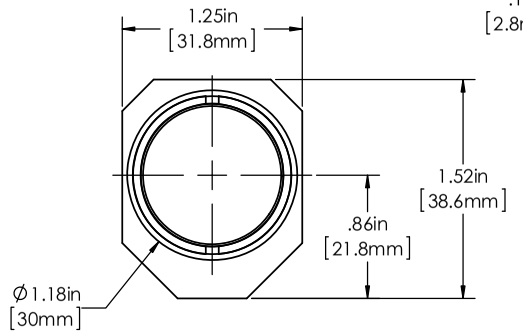
NOTE: UNLESS OTHERWISE SPECIFIED

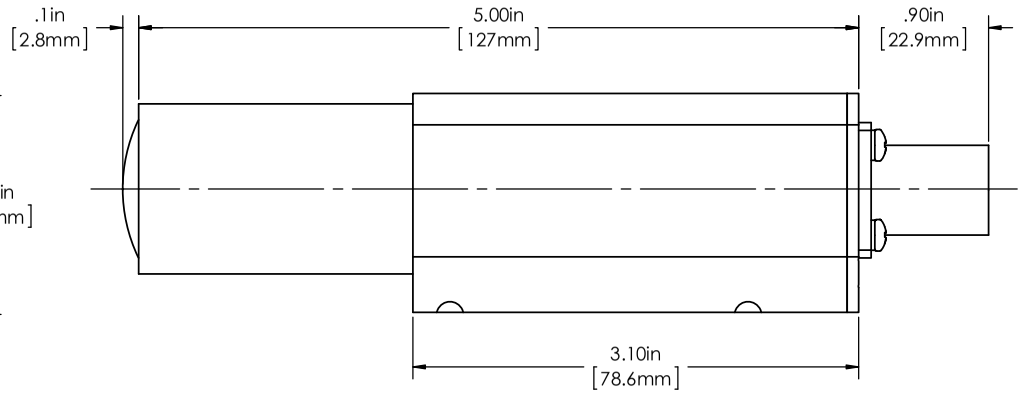
1. HATCHED SURFACE IS CHEM. FILMED FOR GROUNDING.
2. KC = KEY CHARACTERISTIC.
3. SEE TABLE BELOW FOR CONNECTOR PINOUT AND MATING CONNECTOR P/N.

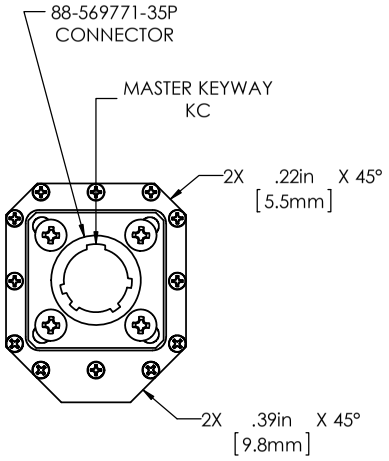
88-569771-35P PINOUT	
MATE: D38999/26WA35SN	
PIN NO.	SIGNAL
1	+28VDC
2	+28VDC RETURN
3	CASE GND
4	ENABLE
5	ENABLE RETURN
6	N/C

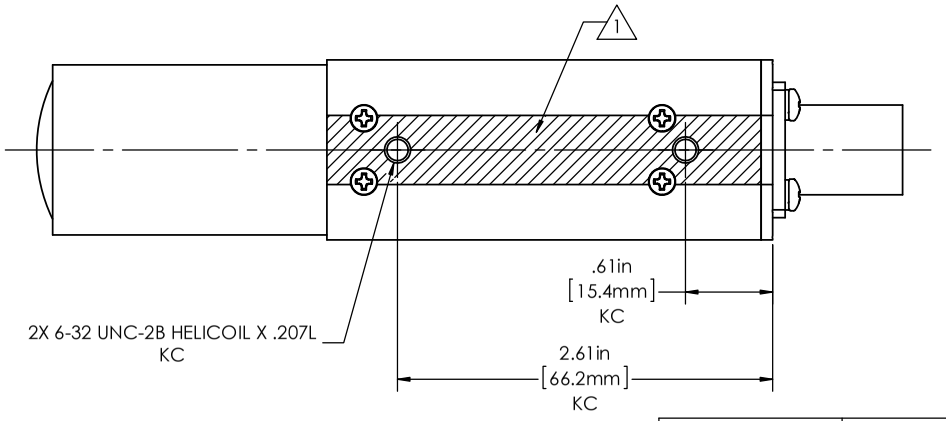
4. WHEN THE LED ENABLE AND ENABLE RETURN LINES ARE OPEN, THE LED IS ON. WHEN THE LED ENABLE AND ENABLE RETURN LINES ARE SHORTED WITH LESS THAN 10 OHMS, THE LED IS OFF.
5. NOMINAL POWER CONSUMPTION WHEN IR ILLUMINATOR ONLY IS ENABLED: APPROX. 6 WATTS. NOMINAL POWER CONSUMPTION WHEN HEATER ONLY IS ON: APPROX. 10 WATTS. 16 WATTS WHEN BOTH ARE ENABLED AT THE SAME TIME.
6. WEIGHT: 260 ± 26 GRAMS.

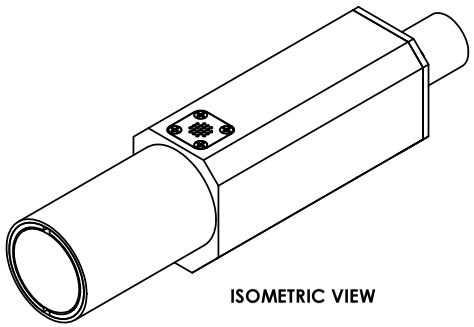












ISOMETRIC VIEW

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: .X = ±.060 .XX = ±.030 .XXX = ±.010 ANGLES = ±1° DIMENSIONAL LIMITS APPLY AFTER FINISH PROCESSING. DO NOT SCALE DRAWING.	CAD DRAWING DO NOT MANUALLY UPDATE	SEKAI ELECTRONICS INC.	
	DRAWN J. CARILLO	DATE 11/24/2015	TOP ASSEMBLY, SRI-E0001, RUGGED NIR ILLUMINATOR, 28VDC, WAVELENGTH 850NM
	CHECKED		
	DESIGN		
MATL	SIZE C	CAGE CODE 8V398	DWG. NO. 93SRIE0001-01 REV B
FINISH	SCALE: 3:2		SHEET: 1 OF 1