

DC950 ILLUMINATOR

A PRODUCT OF DOLAN-JENNER INDUSTRIES

Operation Manual



Setup

Voltage Selection:

The DC950 illuminator has universal AC voltage input. Connect the appropriate AC line cord to the DC950 and connect to an AC power receptacle. The DC950 can operate with line voltages from 100 to 230 VAC and at 50 Hz. or 60 Hz.

Fiber Optic Connection

Notice: Do not operate the illuminator without the fiber optic connected to the illuminator.

Loosen the fiber optic nosepiece thumbscrew.

Insert the fiber optic into the illuminator nosepiece.

Tighten the thumbscrew by hand to make a secure connection to the fiber optic. *Use of pliers or other tools is not recommended.*

Two nosepiece styles are available with the DC950 series of fiber optic illuminators. A-type with a 0.985 in. (25mm) ID, or B-type with a 0.590 in. (15mm) ID smaller than the 0.985 in. ID.

A-type nosepieces require the use of adapters to mate fiber optic light guides smaller than the 0.985 in. ID. Adapters fit into the nosepiece and reduce the ID to accept the chosen fiber optic. The fiber optic and the adapter are secured with the thumbscrew. The following A-type adapters (SX-5, SX-6 & SX-7) are made with an idler which allows quick disconnect of the fiber optic.

B-Type nosepieces will accept self-supporting goosenecks (EEG2823C, EEG3922C, BG2820C, etc.) and ringlight (A3739B) fiber optics without the need for an adapter. Fiber optics smaller than the 0.590 in. (15mm) ID will require the use of B-type adapters (SX-5B, SX-6B & SX-7B).

CAUTION: The fiber optic interface (nose piece) runs at a very high temperature. Avoid contact during use and when inserting or replacing light guide assemblies.



WARNING

Risk of injury from hot surfaces where indicated.



Operation

Insert the power cord into the power entry module at the rear of the illuminator. Next, insert the power cord into a 3 wire grounded AC power receptacle. **Use only approved power cord supplied with the illuminator.**

Press the ON(1)/OFF(0) rocker switch on the front panel to ON(1). The illuminator will light and is ready for service.

Lamp Intensity Control:

All the DC950 series illuminators are equipped with a front panel manual solid state intensity control and an external interface (9-pin, D style connector) for remote intensity control via a 0-5 VDC signal on the back panel.

Manual:

The illuminator intensity is controlled by the rotary control located on the front panel of the illuminator. The 0 position (when control is turned fully counter-clockwise) corresponds to the lowest illuminator intensity. The 100 position (when control is turned fully clockwise) corresponds to the highest illuminator intensity.

NOTE: Continuous operation of the illuminator at the highest intensity level will yield rated lamp life. Operating the illuminator at reduced intensity can result in significantly extended lamp life.



Remote Interface:

The DC950 has been supplied with a filtered 9 position D-Sub connector to reduce noise that might occur when connecting external equipment to the remote interface. Removal of this connector is not recommended as undesired noise may occur on connections to the remote interface.

To enable the remote interface, move the LOCAL/REMOTE, located on the rear panel of unit, to the REMOTE position. When the switch is in the REMOTE position the front panel intensity control is not active. See Fig. 1 for the Pin Functions on the 9 Pin D-Sub connector. If the Remote Intensity Control Pin is not connected, the illuminator will run at the maximum intensity setting until the Remote Intensity Control Pin is connected.

Remote Intensity Control:

The Remote Intensity Control is located on Pin 3 of the Remote Interface. When the LOCAL/REMOTE switch is in the REMOTE position the intensity is controlled by the signal applied to Pin 3. *NOTE: The front panel intensity control is deactivated in remote mode.*

The input signal must be limited to a 0 to +5 volt DC signal. A negative voltage or a voltage in excess of 5 volts will cause the lamp to run at maximum intensity potentially shortening lamp life. The DC950 Remote Intensity control is highly linear. At 0 volts the lamp voltage is 0 volts. At +5 volts the lamp voltage is the maximum voltage for the lamp specified at the time the order was placed. A 2.5 volt input signal will cause the lamp to run at 50% of lamp voltage. Refer to Table A for intermediate values.

Pin 1 can be used to supply power to a remote potentiometer. Connect the potentiometer as shown in Figure 2. The 500 ohm series resistor prevents shorting the power supply on Pin 1 if the potentiometer should fail as a short circuit. In all cases the minimum resistance between Pin 1 and common ground (Pins 2 and 7) must be at least 500 ohms to prevent damage to the Pin 1 power supply.

The user may also use a fixed voltage divider to control the illuminator at a non-varying intensity level. Refer to Figure 3 and the resistance values in Table A for sample resistor values and the corresponding lamp intensity levels. In all cases, the minimum total resistance value connected between Pin 1 and common ground (Pins 2 and 7) must be 500 ohms ($RA + RB \geq 500$ ohms.)

Remote On-Off:

The lamp power can be controlled via Pin 6, see Fig 4. By connecting Pin 6 to a logic high (+5v) signal (Pin 1) the lamp power will be interrupted for as long as Pin 6 is connected to logic high. When the contacts connecting Pin 6 are opened, removing the +5v from Pin 6, the illuminator will return to the intensity level set by the signal connected to Pin 3 or to the intensity level set by the front panel control. The response time of the illuminator going from On to Off and Off to On is dependent on the thermal response of the lamp. The lag time of the lamp may be several hundred milliseconds from the time the Remote On-Off signal is applied to the time the lamp attains either the full On or full Off state. The response time of the power supply is less than 100 milliseconds.

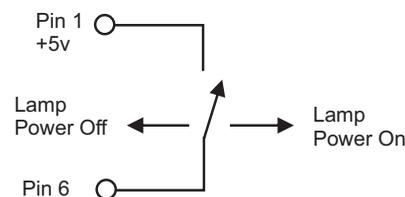


Fig 4

Pin # - Signal

1	+5 VDC at 10mA max.
3	0 - 5 V (+) input
2, 7	0 - 5 V (-) input (common ground)
6	Remote On (Open) Off (+5V)
8	Chassis ground (shield)
9	Lamp Fail
4,5	Future

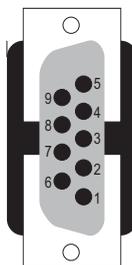


Fig. 1

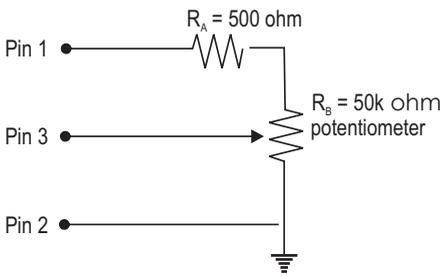


Fig. 2

Table A

RA (Ω)	RB (Ω)	Voltage VDC (Pin 3)	% @ Full Intensity
20K		5.0	100%
20K	2.2K	4.5	90%
20K	5K	4.0	80%
20K	8.6K	3.5	70%
20K	13K	3.0	60%
20K	20K	2.5	50%
13K	20K	2.0	40%
8.6K	20K	1.5	30%

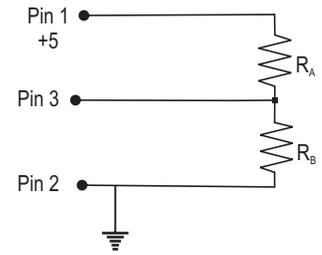


Fig. 3

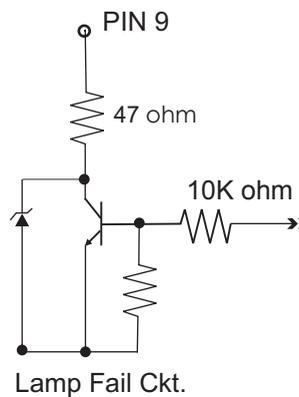


Fig. 5

Lamp Fail Signal:

A signal indicating that the lamp has failed is available on Pin 9. This signal is open collector (see Fig 5). The user must supply the necessary circuitry to connect the lamp out signal to a signaling device. The maximum current through the circuit is 10 mA. When the signal at Pin 9 is logic High(5v) the lamp has failed.

The Lamp Fail signal will detect if current has stopped flowing to the lamp while the intensity control signal is not at 0 volts, the illuminator On-Off switch is in the On position and the Remote On-Off signal is in the On condition. The Lamp Fail signal will also indicate if the lamp is not properly seated after a lamp change or if the lamp power connector is not properly connected after a lamp change or if the lamp socket was replaced.

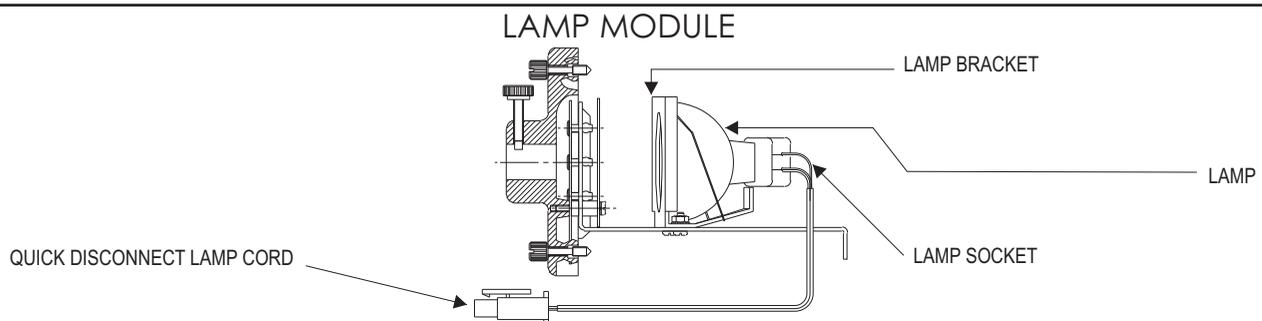

WARNING

Risk of electrical shock.
Remove power plug before lamp replacement and wait for hot lamp to cool.

LAMP MODULE REPLACEMENT

1. Turn the illuminator intensity control fully counterclockwise (the 0 position) and run the illuminator with the fan for several minutes. Wait until the nosepiece is cool to the touch. Press the ON(1)/OFF(0) rocker switch to the OFF(0) position.
2. Remove the AC line cord from the AC power receptacle.
3. Release lamp module from the power supply by turning both retaining screws counterclockwise using a straight blade screwdriver. *NOTE: Both retaining screws will be disengaged from the power supply, but will remain in place in the lamp module.*
4. Remove the lamp module from the power supply by slowly pulling outward.
5. Release the lamp module by unlatching the quick disconnect lamp cord. See Fig 6.
6. Attach new lamp module by connecting the quick disconnect lamp cord.
7. Insert lamp module into power supply. Make sure lamp cord does not interfere.
8. Secure lamp module by tightening the (2) retaining screws
5. Release the lamp module by unlatching the quick disconnect lamp cord. See Fig 6.
6. Attach new lamp module by connecting the quick disconnect lamp cord.
7. Insert lamp module into power supply. Make sure lamp cord does not interfere with housing.
8. Secure lamp module by tightening the (2) retaining screws clockwise.
9. Reattach AC line cord and the illuminator is ready for service.

Fig 6



 **WARNING** 
***Risk of electrical shock.
Remove power plug before lamp
replacement and wait for
hot lamp to cool.***

LAMP REPLACEMENT

1. Follow steps 1-4 of Lamp Module Replacement.
2. Check the lamp assembly to verify that the lamp and socket are cool before proceeding.
3. Lift and remove the lamp from the lamp holder by grasping the rear of the lamp adjacent to the lamp socket.
4. Remove the lamp from the socket by holding the lamp socket and gently pulling the lamp reflector.
5. Discard the lamp.
6. Insert the replacement lamp into the lamp socket. *CAUTION: Do not touch the interior of the lamp reflector, the lamp envelope or the lamp pins with your fingers. Touching the interior of the lamp reflector, the lamp envelope or the lamp pins will result in significant shortening of the lamp life. Handle the lamp only by the exterior of the reflector or the area adjacent to the pins.*
7. Insert the replacement lamp and socket into the lamp holder.
8. Follow steps 7-9 of **Lamp Module Replacement**.

 **WARNING** 
***Replace the fuse with the correctly
rated fuse as listed on the label
on the back of the illuminator. Use of
an improper fuse can create
a hazardous situation.***

FUSE REPLACEMENT

1. Press the ON(1)/OFF(0) switch to the OFF(0) position.
2. Remove the AC line cord from the AC power receptacle.
3. Remove the AC line cord from the power entry module at the rear of the illuminator. The fuse drawer is part of the power entry module. The drawer is located directly beneath where the AC line cord plugs in.
4. Pull out the fuse drawer. Remove the blown fuse that is positioned closest to the illuminator and discard. The second fuse is the spare.
5. Place the replacement fuse into the fuse drawer. The fuse will work in either orientation.
6. Push the fuse drawer until it "clicks" into position.
7. Attach the AC line cord to power entry module at the rear of the illuminator. The illuminator is now ready for service.

Cleaning:

If necessary wipe exterior surfaces only with a soft cloth. Do not use fluids to clean the exterior of the illuminator. Under no circumstances allow fluids of any kind to enter the illuminator.

Replacement Parts

Part No.	Description
686009-02770	Quick Disconnect Lamp Socket
686009-02468	Lamp, EKE, 21V, 150 Watt
686009-02787	Fuse, 3.15A, 5 x 20, 250 V, slow blow
686009-02470	Lamp, EJV, 21V, 150 Watt
686009-02712	Lamp, EJA, 21 V, 150 Watt
686009-03164	Lamp, EKE-X, 21V, 150 Watt

Only above parts are replaceable. Return illuminator to factory for warranty service. Attempts to replace other parts voids warranty.

PERFORMANCE STATEMENT

Dolan-Jenner Industries, Inc. (DJI) recognizes that its illuminator products may be used under an almost unlimited variety of conditions. As such, we are prepared to assist the customer in the selection and application of any of these products. This includes application engineering, sample testing and other means as determined by DJI.

Where DJI has made specific recommendations for its products, systems, or detection techniques (based on complete and detailed information furnished by the customer) we will extend every effort to assure that the customer is satisfied with the performance of our products. Continual development and improvement of DJI products may require changes in details that do not coincide with descriptions or illustrations shown. All fiber optic bundle diameters are nominal.

TWO YEAR WARRANTY ON LIGHT SOURCES

Dolan-Jenner Industries, Inc. (DJI) warrants its products to be free from defective material and workmanship. Any light source or parts thereof which are determined by DJI to be defective within two(2) years (average product life cycle) from shipment date will be replaced or repaired at our option. All fiber optics are warranted for one year. This warranty specifically excludes; incandescent and quartz-halogen lamps, lamp sockets and optical filters.

Any products which, in our opinion, have been subjected to misuse, incorrect wiring, or where installation procedures are not in accordance with the instruction manual, are excluded from this warranty. Nor does this warranty extend to products on which repairs or alterations have been made outside the factory, or on which the identification or serial number has been altered or to accessories not of our manufacture.

Our obligation with respect to products or parts covered by this warranty shall be limited to repair or replacement, F.O.B., Boxborough, Massachusetts. In no event shall DJI be held liable for consequential or special damages, or for transportation, installation, adjustment, or other expenses which may arise in connection with such products or parts. This warranty is in lieu of all other statements or warranties or guarantees, written or implied, by DJI or its authorized representatives.

Important: Please contact factory for a return authorization number prior to shipping merchandise to factory.

TECHNICAL DATA

Lamp	150 W Quartz halogen, 21V (EKE)
Voltages	100 to 240 VAC, 50 / 60 Hz
Current	Maximum 2A
Power Consumption	200 W
Lamp Life	200-10,000 Hours (EKE) depending on intensity used.
Fuse	3.15 Amp, 250V, time delay, 5 x 20 mm
Color Temperature	3250° Kelvin .
Noise Level	Approximately 21 dB (A)
Safety Approvals	BV, CE (230 VAC)
Dimensions	4.6 H x 7.25 W x 9.5 D (inch) 11.7 H x 18.4 W x 24.3 D (cm)
Weight	12 lbs. (5.5 kg.)
Max. Housing Temp.	15°C above ambient

Environmental Conditions Use Specifications

Type of Use	Indoor at max. altitude of 2,000 M
Installation Category	II
Temperature Range	5°C to 35°C
Relative Humidity	80% maximum up to 31° C decreasing linearly to 50% relative humidity @ 35° C
Pollution Degree	2

NOTICE: if the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

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WARNING: This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measure.



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