

DuraStar

HAZARDOUS LOCATION, IECEX, AND ATEX INSTALLATION, OPERATING & MAINTENANCE INSTRUCTIONS



Reliance®
A PRODUCT OF CLARK-RELIANCE

STORAGE and HANDLING

The Reliance DuraStar LED Illuminator meets or exceeds all applicable specifications when shipped from the factory.

All units should be inspected upon receipt to ensure that no damage has been incurred during transit. If damage has occurred, a claim should be filed with the carrier immediately. The unit should be stored in an area protected from the elements and corrosive fumes, in a secure manner where they can neither fall, nor be struck by other objects. Care should be taken to protect the window and the end connections from damage. Avoid placing any objects on the illuminator at any time.

COMPONENTS

There are three main components that make up the DuraStar Illuminator: the light strip with louvers, the power supply, and the cable connecting these two main pieces. The DC output cord may have more than one piece depending on the required distance between the illuminator and the power supply. Note that an illuminator hood is not required or recommended.

INSTALLATION

Caution: All lights are tagged with the service conditions for that particular unit. These specifications are located on the Reliance tag on the power supply housing and are contained in the “Specifications” section of this manual. Do not use or refer to specifications listed on the red label on the power supply housing. They are specifications for the housing only. Review the ratings prior to installation and again prior to start-up, to ensure proper operation in the installed environment. Should there be any doubt as to the applicability of a unit for the installed environment, consult the factory before placing the unit into service.

Note: All installation steps should be performed by a qualified technician and should be executed in accordance with all applicable national and local codes.

The light and power supply should be checked to ensure that they contain no foreign matter, and that the end connections are clean, undamaged, and in line with existing conduit.

STEP BY STEP INSTRUCTIONS:

Caution: Verify that the area is free of flammables before installation.

- 1) The upper bracket on the illuminator has 4 holes that fit onto the pins that are installed on the top of the gage glass body. The inner set of holes is for installation onto FG400 and FG900 series gages. The outer 2 holes are for installation onto FG1500 and FG2000 series gages. Verify that the assembly you received fits the existing gage glass. Slip the upper illuminator bracket onto the pins.
- 2) Let the lower bracket rest on the gage glass between the cover plate. Adjust the lower bracket by loosening the set screw and align the bracket at the lowest point on the glass between the cover plate opening. Tighten the set screw to secure the lower bracket.
- 3) Open the cover of the power supply housing. Insert the AC line wires into the housing and connect to the “AC IN” terminal block. A ground screw is located inside of the enclosure if required.

Caution: The DC output is pre-wired. If this connection is removed during installation, reconnect the “AC IN” and “DC OUT” to the proper positions. Failure to do so will result in permanent damage to the power supply or light.

- 4) **IMPORTANT:** The customer must have a “sealing fitting” in the conduit supplying power to the light’s power supply within 18” of the power supply.
- 5) If the cable will not reach the power supply, contact your local Clark-Reliance representative for an optional extension cable. (ref. Spare Parts List on pg. 4)

Caution: Verify that the area is free of flammables before turning on power.

- 6) Replace the cover on the power supply housing.
- 7) Switch “ON” the power supply making sure the illuminator is functioning properly, with all LED’s illuminated.
- 8) If the LED’s do not illuminate, remove unit from installation and move to a safe work area. Remove the cover on the power supply and install AC test cord. Turn power on. An internal LED should be lit if it is wired correctly. See Figure 1, Detail “B”.
- 9) If the LED in the power supply is not lit, check the power source. If the power source is OK, contact the manufacturer.
If the LED in the power supply is lit, but the Light Bar does not light, check the fuse and the connections between the power supply and Light Bar. If the Light Bar will still not light, contact the manufacturer.

Note: Any additional components must be installed prior to the customer’s sealing fitting.

FUSE REPLACEMENT

The power supply is fused for AC protection. In the event of a large voltage surge, the fuse may release, causing no output. Replace the fuse with Clark-Reliance P/N E-F- DIN-F400MA only. (Ref. Figure 1 – Detail A)

OPERATION

The LED illuminator can run continuously. The operating life of the LED’s exceed 100,000 hours under normal conditions.

ROUTINE MAINTENANCE

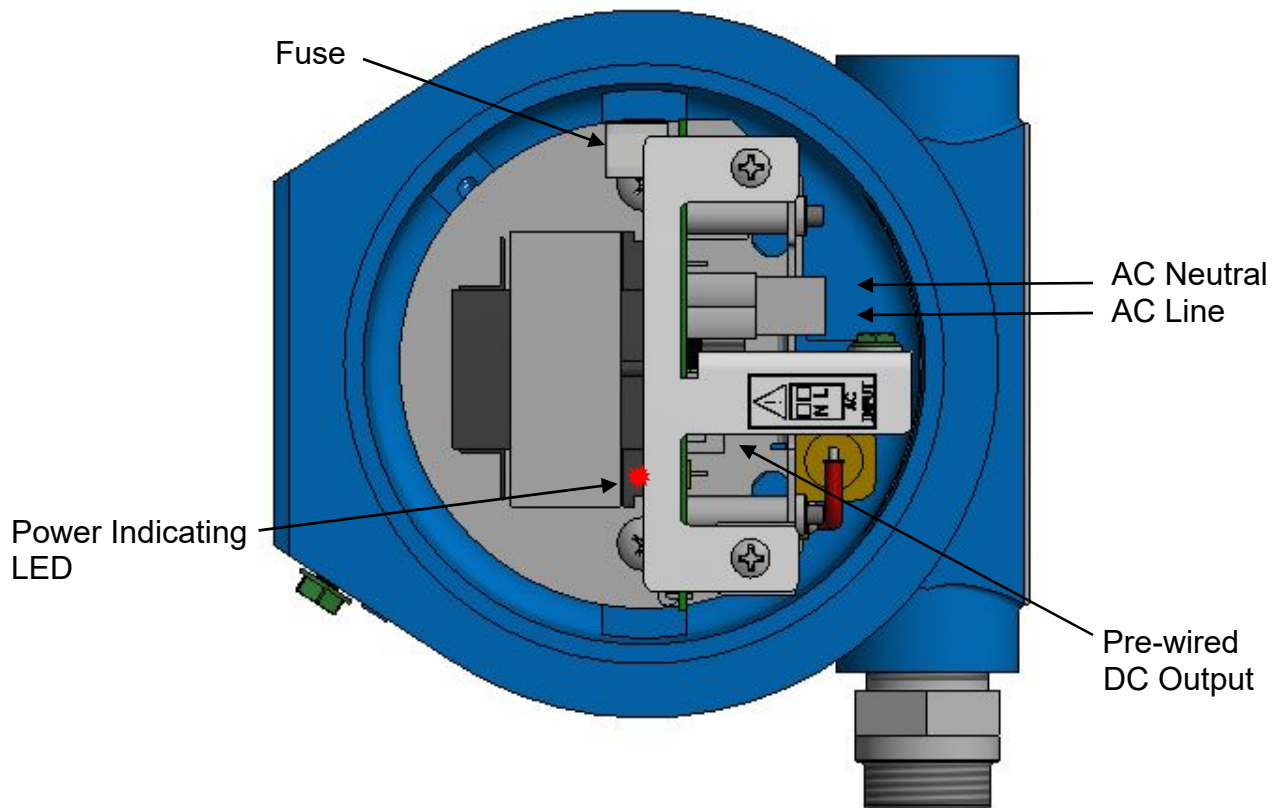
Keep the window on the front of the light clean using clean damp cloth. Avoid using chemical cleaners that may damage the silicone seals. If cleaner is required, do not spray directly onto the light. Apply a small amount to the rag and carefully wipe the glass only. Never use harsh abrasives, wire brushes, metal scrapers, or any material that could scratch the window. The window may be cleaned while the unit is in operation. Never use petroleum-based products on the window as they will damage the glass seals.

The light may be removed while the unit is in operation during inspection or maintenance of the customer’s gage glass. The illuminator may also be disconnected from the power supply, if desired. Disconnect the cord at the supplied screw connector adjacent to the power supply. The plant power going to the power supply does not need to be disconnected.

Warning: Substitution of components may impair intrinsic safety.

SPECIFICATIONS	
Power Supply:	115 or 230 VAC @ 50-60 Hz
Power	< 250 mA @ 115 VAC
Consumption:	< 125 mA @ 230 VAC
Est. Life:	100,000 Hours (continuous)
Wire Size:	Min 18AWG (.75mm ²) Max 12AWG (4mm ²)
Max dist. from power supply to light:	72ft (22M)

Figure 1: Wiring Instruction



NOTE: See Drawing CI-26677 for safety information for hazardous locations.

Spare Parts

Item	Part Number	Description
1	A25115-115	115VAC Power Supply on Bracket (No Enclosure)
2	A25115-230	230 VAC Power Supply on Bracket (No Enclosure)
3	A25119-115-E6-D	115VAC Power Supply W/ Aluminum Enclosure USA/CAN (Class, Division Certified)
4	A25119-230-E6-D	230VAC Power Supply W/ Aluminum Enclosure USA/CAN (Class, Division Certified)
5	A25481-115-E6-D	115VAC Power Supply W/ Aluminum Enclosure IECEX/ATEX (Zone Certified)
6	A25481-230-E6-D	230VAC Power Supply W/ Aluminum Enclosure IECEX/ATEX (Zone Certified)
7	E-F-DIN-0125-T	125mA Fuse 230VAC
8	E-F-DIN-0250-T	250mA Fuse 115VAC
9	V20601-# (# = length ft)	Extension DC Power Cord for Remote Mounting Power Supply

Hazardous Location Approvals

US/Canada:



Class I, Division 1, Groups B – D T4
 Class I, Zone 1, AEx db [ib] IIB+H2 T4 Gb
 Class I, Zone 1, AEx ib IIB+H2 T4 Gb
 Ex db [ib] IIB+H2 T4 Gb
 Ex ib IIB+H2 T4 Gb
 -40°C ≤ Tamb ≤ +60°C

ATEX:



II 2(2) G Ex db [ib] IIB+H2 T4 Gb (Power Supply)
 II 2 G Ex ib IIB+H2 T4 Gb (Lights)
 -40°C ≤ Tamb ≤ +60°C

IECEX:



Ex db [ib] IIB+H2 T4 Gb (Power Supply)
 Ex ib IIB+H2 T4 Gb (Lights)
 -40°C ≤ Tamb ≤ +60°C

ATEX Nameplate

DuraStar®
 MODEL: RDX5000 PART #: S25481
 CAUTION: TO REDUCE THE RISK OF IGNITION OF HAZARDOUS ATMOSPHERES, CONDUIT RUNS MUST HAVE SEALING FITTING WITHIN 457mm (18") OF ENCLOSURE. DISCONNECT POWER BEFORE SERVICING. KEEP ASSEMBLY TIGHTLY CLOSED WHEN IN OPERATION. TO PREVENT THE RISK OF ELECTROSTATIC SPARKING, PAINTED SURFACES SHOULD BE CLEANED WITH A DAMP CLOTH.
 INDUSTRIAL CONTROL EQUIPMENT FOR HAZARDOUS LOCATIONS. ASSOCIATED APPARATUS PROVIDES INTRINSICALLY SAFE OUTPUT. SUBSTITUTION OF COMPONENTS MAY IMPAIR SAFETY.
 II 2 (2) G Ex db [ib] IIB+H2 T4 Gb IP66/TYPE 4X ITS20ATEX25919X
 Ex db [ib] IIB+H2 T4 Gb IP66/TYPE 4X IECEX ETL 20.0063X
 SEE CONTROL DRAWING CI-26677 FOR FULL INSTALLATION AND PRODUCT WARNING INFORMATION

VOLTAGE: VAC

AMB. TEMP.: -40°C/-40°F ≤ Ta ≤ 60°C/140°F
 115/230 VAC, 0.250/0.125 A, 50/60 Hz, Um = 250V
 MIN/MAX WIRE: 0.8mm²/3.5mm² (18 AWG/12 AWG), 80°C MIN ENCLOSURE: 3/4" NPT CONNECTION 2575

Mfg. by Clark-Reliance Corporation; Strongsville, Ohio 44149 USA
 +1 (440) 572-1500; www.clarkreliance.com

DuraStar®
 SYSTEM MODEL: RDX5000, USE ONLY WITH POWER SUPPLY S25481
 INDUSTRIAL CONTROL EQUIPMENT INTRINSICALLY SAFE FOR HAZARDOUS LOCATIONS.
 II 2 G Ex ib IIB+H2 T4 Gb NEMA 4X ITS20ATEX25919X
 Ex IB IIB+H2 T4 Gb NEMA 4X IECEX ETL 20.0063X
 AMB. TEMP.: -40°C/-40°F ≤ Ta ≤ 60°C/140°F
 SEE CONTROL DRAWING CI-26677 FOR INSTALLATION AND ALL PRODUCT WARNING INFORMATION.

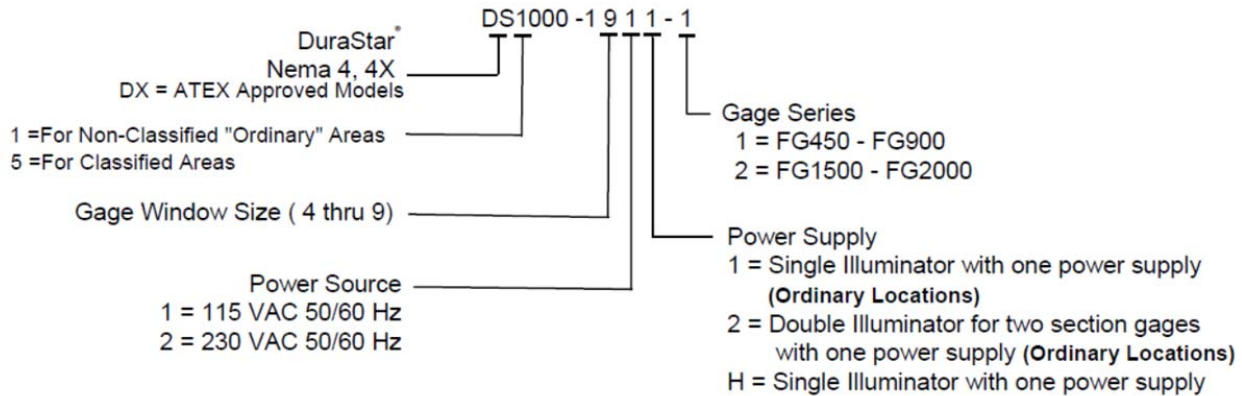
MODEL NO.:

SERIAL NO.:

Reliance®
 A PRODUCT OF CLARK-RELIANCE 2575

Mfg. by the Clark-Reliance Corporation; Strongsville, Ohio 44149 USA
 +1 (440) 572-1500; www.clarkreliance.com

Model Number Code



Notes:

- 1) Only single window units with individual power supplies are available for Hazardous Locations.
- 2) Contact Clark-Reliance for assistance with ATEX approved models and specifications.
- 3) If there is interference with the bottom of the Lightbar Assembly and the lower water gage valve connection, contact Clark-Reliance for options.

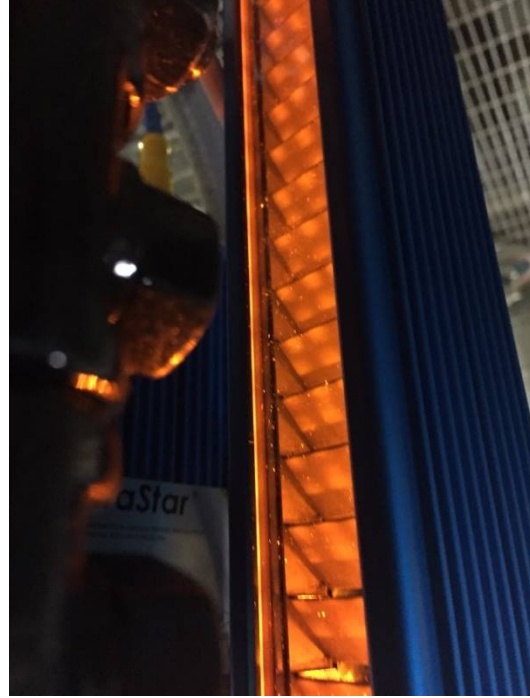
Hazardous Location DuraStar Model Numbers

Hazardous Location DuraStar® Model No.	Gage Glass Model No.	Length (inches)	Length (mm)	Weight (lb)
DS5000-141H-1	FG404 or FG904	11.75	296	7.50
DS5000-151H-1	FG405 or FG905	13.00	330	7.75
DS5000-161H-1	FG406 or FG906	14.50	368	8.00
DS5000-171H-1	FG407 or FG907	15.75	400	8.25
DS5000-181H-1	FG408 or FG908	17.25	438	8.50
DS5000-191H-1	FG409 or FG909	18.00	457	8.75
DS5000-141H-2	FG1504 or FG2004	13.00	330	7.75
DS5000-151H-2	FG1505 or FG2005	14.50	368	8.00
DS5000-161H-2	FG1506 or FG2006	15.75	400	8.25
DS5000-171H-2	FG1507 or FG2007	16.50	419	8.50
DS5000-181H-2	FG1508	18.00	457	8.75
DS5000-191H-2	FG1509	19.00	483	9.00

ATEX Application DuraStar Model Numbers

ATEX Application DuraStar® Model No.	Gage Glass Model No.	Length (inches)	Length (mm)	Weight (lb)
DX5000-141H-1	FG404 or FG904	11.75	296	7.50
DX5000-151H-1	FG405 or FG905	13.00	330	7.75
DX5000-161H-1	FG406 or FG906	14.50	368	8.00
DX5000-171H-1	FG407 or FG907	15.75	400	8.25
DX5000-181H-1	FG408 or FG908	17.25	438	8.50
DX5000-191H-1	FG409 or FG909	18.00	457	8.75
DX5000-141H-2	FG1504 or FG2004	13.00	330	7.75
DX5000-151H-2	FG1505 or FG2005	14.50	368	8.00
DX5000-161H-2	FG1506 or FG2006	15.75	400	8.25
DX5000-171H-2	FG1507 or FG2007	16.50	419	8.50
DX5000-181H-2	FG1508	18.00	457	8.75
DX5000-191H-2	FG1509	19.00	483	9.00

DuraStar Illuminator Mounting Instructions



When mounting the DuraStar Illuminator onto the Flat Glass Gage, the louvers must be pointed upward, and the blank area must be at the top of the illuminator.

(Correct mounting is as shown in the above pictures)

REPLACEMENT PARTS WARNING

THE USE OF NON-ORIGINAL EQUIPMENT MANUFACTURER PARTS (SUCH AS GLASS, GASKETS, PROBES, MODULES, ETC.) WILL VOID THE AGENCY APPROVAL (FM, UL, CAS, CRN, ABS, ETC.) PRESSURE/TEMPERATURE RATING, AND WARRANTY OF THE EQUIPMENT. CLARK-RELIANCE REQUIRES THE USE OF OEM PARTS FOR ALL REPAIRS IN ON THIS PRODUCT IN ORDER TO MAINTAIN PLANT AND PERSONNEL SAFETY, AND RELIABLE OPERATION.

Consult the factory or your local Clark-Reliance Representative with any questions. Please have the model numbers and/or reference drawing numbers available when calling. You can also contact us at our website www.relianceboilertrim.com or RelianceAppEng@clark-reliance.com.



On-Line Parts – DIRECT – for Clark-Reliance Products

JERGUSON® **Reliance®**

JACOBY-TARBOX® **MAGNE-SONICS®**



www.clark-reliance.com/parts