

Shine LED Lamp Kit Guideline Supplement: Dupont Cyrel 3000

Product

Shine LED Lamp Kit

Introduction

This supplement provides further guidelines for installing the **Shine LED lamp kit** on the Dupont 3000 style of bank exposure system. Miraclon can only provide guidelines for installing the appropriate Shine LED Lamp Kit to your device. The actual installation must be determined by the installing electrician.

WARNING: The brackets included in the Shine LED Lamp kit must be used for the LED lamps to achieve optimal exposure time.

NOTE: the schematic images presented here are only samples. Consult the schematics for your actual device.

Electrical connections must comply with local and national safety codes and must only be performed by competent and qualified electricians aware of the safety hazards present. If overrides of safety circuits or features are performed during installation or commissioning for any reason, these must all be restored and checked for correct operation before normal operation is permitted. It is strongly recommended that during electrical connection, troubleshooting or servicing that the main power supply to the machine is disconnected and the isolator “locked out” using a physical padlock to prevent it being inadvertent operated.

Installing the Shine LED Lamp kit on the Dupont 3000 requires two steps:

- Rework for the lower Back Exposure area.
- Rework for the upper Main Exposure Area.

The installation leverages the existing wiring used for the device’s Fluorescent Bulbs, and redeploys it to support the new LED lamps by utilizing pre-wired lamp brackets that bypass the fluorescent bulb electronics to supply power directly to the LED lamps. The LED lamps replace the fluorescent bulb locations by utilizing the tombstone bulb holder locations.

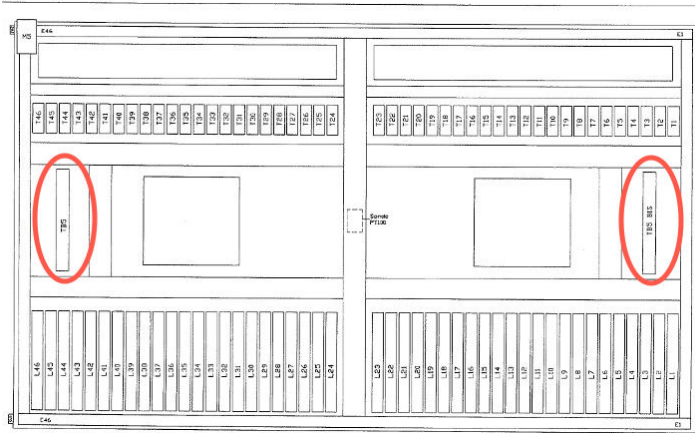
Due to the age of the equipment, additional attention may be required to repair cabling that may have become inflexible or brittle over time.

Equipment Required

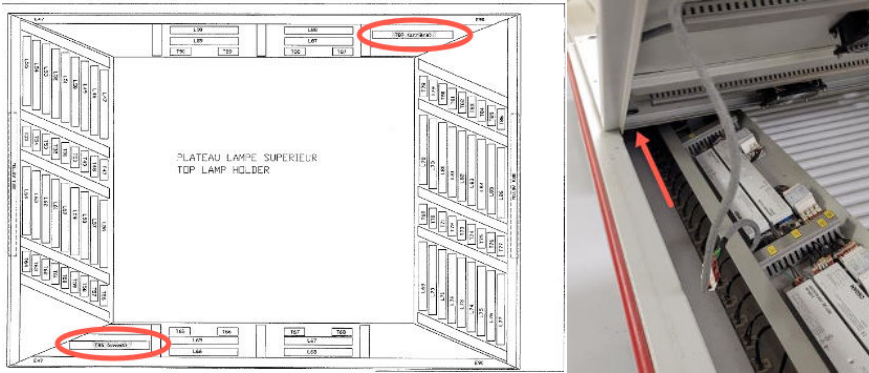
- Conversion Brackets Assembly:
 - 0480A011 UV69 Shine LED Top Kit
 - 0480A012 UV48 Shine LED Bottom Kit
- Standard Electrical Tool set
- Cable Ties
- Insulating wire covers

Equipment Explanation

- Lower Back Exposure Area (looking up on bottom side of Bulb drawer)

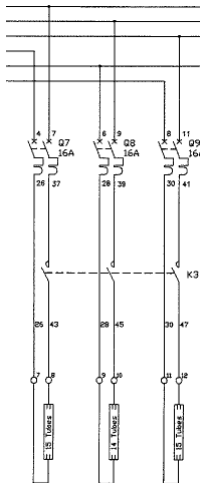


- Upper Main Exposure Area Under top covers



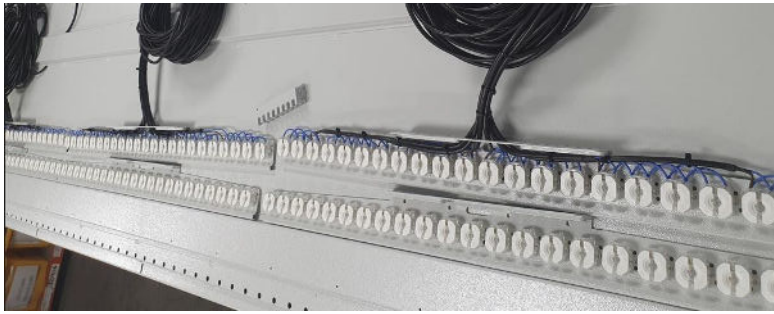
All of the Ballasts and heaters connect to common connection rails supplied from the main power box (circled in red).

Review the electrical schematic for your specific model. In this example, the main exposure lamps are connected in three phases:



The upgrade brackets have a powered side (x3) and an unpowered side (x3) that connect to the phases in a similar as the florescent bulbs. The brackets are prewired and of the 23 lamps per

phase, only 6 wires need to be run and connected to the connection rail.



These brackets will take the place of the tombstones that currently hold the bulbs.

WARNING: The brackets included in the Shine LED Lamp kit must be used for the LED lamps to achieve optimal exposure times.

Retrofit Steps

Prior to installing the Lamp Kit, make sure that the device has been disconnected.

Installing the Back Exposure Lamps

Start by removing the existing fluorescent tubes, and storing them in boxes as is recommended.



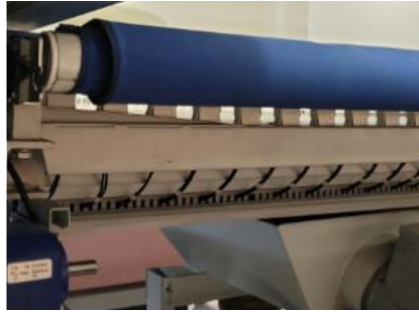
Using the spring tabs on either side, and push the tombstones down through the mounting holes into the lower side of the frame.



Install the 0480A012 UV48 Shine LED Bottom Kit brackets into the tombstone holes. The front side uses wired powered brackets, the rear side use the non-wired brackets.



Front



Rear

Before fully tightening the brackets, place a lamp between the brackets to make sure that you have proper spacing. Some adjustment may be necessary. There should be sufficient space for the lamp to fit. Spacing for the lamp should not be tight.

NOTE: compared to the traditional fluorescent tubes, Shine LED lamps have an aluminum extrusion that expands more with temperature resulting in LED movement of up to 0.8mm.

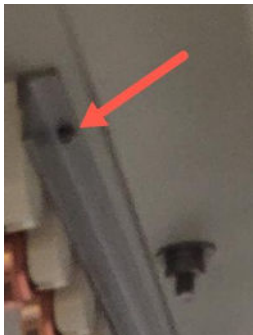
If your device is equipped with bulb heaters, isolate the separate bulb heaters. The separate bulb heaters must also be electrically isolated. Consult the wiring schematic for your device and refer to the steps below for *Isolating the Bulb Heaters*.

Connect the supplied wires to the connection block in place of the fluorescent bulb connections. Make sure that they have the same phase alignment.

Installing the Main Exposure Lamps

Start by removing the existing fluorescent tubes, and storing them in boxes as is recommended.

Remove the “L” shaped bracket beside the tombstones on both sides.



Using the spring tabs on either side, squeeze the tabs and push the tombstones up through the mounting holes into the upper side of the frame.



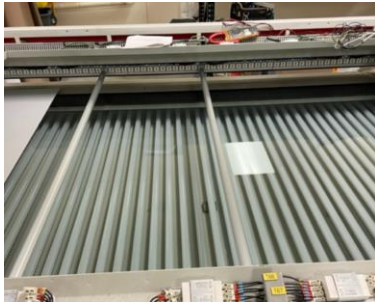
On the top side, tuck the tombstones to the cable track and secure with straps to keep them out of the way.

Install the upgrade brackets into the tombstone holes. The wired brackets are installed at the rear of the machine (non-operator side), and the non-wired are installed on the front operator side.



Secure the brackets through the tombstone holes with the supplied hardware.

Before fully tightening the brackets, place a lamp between the brackets to make sure that you have proper spacing. Some adjustment may be necessary. There should be sufficient space for the lamp to fit. Spacing should not be tight for the lamp.



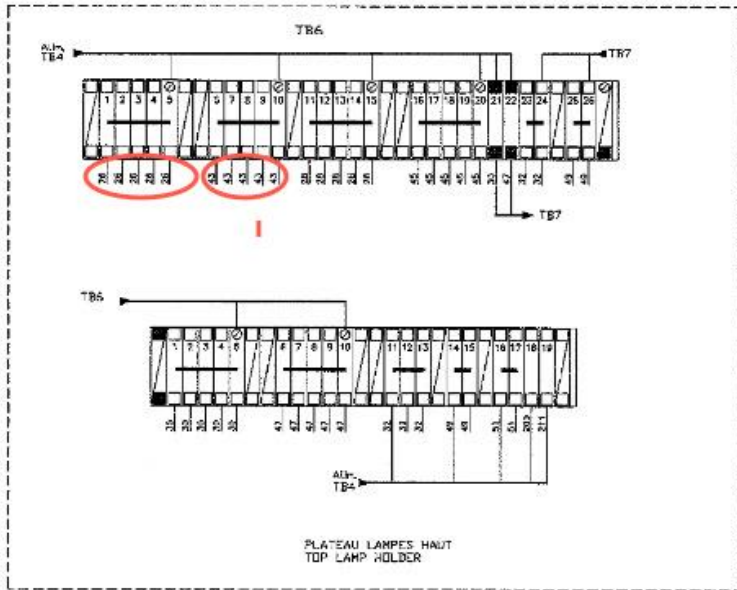
NOTE: compared to the traditional fluorescent tubes, Shine LED lamps have an aluminum extrusion that expands more with temperature resulting in LED movement of up to 0.8mm.

When the brackets are in place, secure to each other with provided screw.



Electrical connections can be made at the terminal blocks identified earlier.

Disconnect the ballast supplies (26,43) and replace them with six (6) wires from one bracket.



NOTE: the actual wire numbers may differ.

Isolating the Bulb Heaters

Disconnect power from the preheating transformers.



Lower Heater



Upper Heater

Consult the electrical schematic for your device to identify the heater power connections.

WARNING: the power to the heaters is connected to other equipment that is critical (such as the cooling fans). Make sure that no other equipment is impacted by the wiring.

Use a wire cap to secure the ends of each wire.

Make sure that isolated leads are secure and remain isolated.

Starting Up the Device

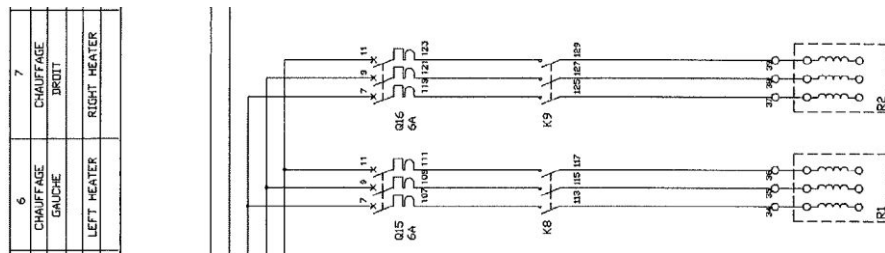
1. Power up the device. Inspect all wiring and make sure there are no issues.
2. Install the LED lamps into the fittings on the brackets.
 - a. Only the end of the lamp labeled L and N can be powered. That end of the lamp should be connected to the brackets that are wired with power.
 - b. Make sure that you align the Line “L” and Neutral “N” indicators.
The lamp will not function if it is not properly aligned.
 - c. On power up, check the first lamp to ensure this alignment
 - d. If LED lamp does not power up, check the following:
 - i. Examine the lamp arrangement, the red stripe end should be on the wired bracket side.
 - ii. Examine the electrical connections for the lamps at the connection rail. Make sure they have the required operating voltage.
3. Adjust the back exposure temperature control settings:
 - a. Unlike the Fluorescent Bulbs that work best at 40oC, the LED lamps prefer to operate at a lower temperature. The air supplied to the Back Exposure Area needs to be adjusted to ensure cooling of only the required area.

NOTE: operating the LED lamps at elevated temperatures can result in permanent impairment to the light output efficiency of the LEDs in the lamps.

- b. Disconnect the back exposure air heaters:
 - i. As an added precaution to avoid accidental overheating of the LED lamps, it is recommended to disconnect the heater power supply so that heat cannot be applied via an incorrect controller set up.
 - ii. To disconnect the heaters, locate circuit breakers Q15 and Q16 in the electrical panel and switch to the “Off” position.

NOTE: confirm the locations using the schematic for your device. The wiring may be different on different devices.

The location of switches on the electrical schematic is here.



- c. On the temperature controller on the front of the device. lower the Upper Setpoint/SP.H setting from 40oC to 15oC.
You do not need to change any of the other parameters.
Instructions on controller operation are included in the device manuals.
4. If equipped with a light integrator, calibrate the integrator per the device’s instructions or simply turn the integrator off as the light stability of the LED’s does not need this function.

5. Conduct a back exposure to ensure there have been no unexpected changes:
 - a. Ensure the exposure area on the glass is masked to be slightly smaller than the plate size to prevent back reflections from the main exposure light.
 - b. Perform a back exposure series to ensure the correct exposure time is established for plate making.
 - c. Produce a back exposure plate.
 - d. Process the plate such that the full plate area is at the targeted relief/floor height normally used.
 - e. This plate will be measured for floor height uniformity.
6. Conduct a main exposure series to establish the times in the machine.
 - a. Perform a main exposure series to ensure the correct exposure time is established for plate making.
 - b. Ensure you are using the modified LED Main exposure procedure including information on how to read the exposure targets.
 - c. Simply produce a plate with the supplied artwork and retain for future reference.
7. After the rework, make some baseline plates from the unit using the LED lamps and inspect them.

The unit is now ready for ongoing plate making. Operation should be the same as before subject to changes to temperature and other settings.

See also	Basic Guideline for Installing the Shine LED Lamp Kit
Technical contact	Christopher Bradley
Date submitted	Jul 27 2023
Last updated	Nov 09 2023

©2023 Miraclon Corporation.
 Technical data subject to change without notice.
 FLEXCEL is a trademark of Miraclon. The Kodak trademark, logo and trade dress are used under license from Kodak.