NEMA Standards Publication

ANSI C136.26-2010 (R2015, S2020)

American National Standard for Roadway and Area Lighting Equipment — Troubleshooting Guide for High-Intensity Discharge (HID) Luminaires

National Electrical Manufacturers Association

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Secretariat:

National Electrical Manufacturers Association

Approved: March 19, 2020

American National Standards Institute, Inc.

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Published by

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, Virginia 22209

Printed in the United States of America

CONTENTS

Foreword

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1 Scope

This troubleshooting guide is intended to help the service person quickly diagnose an HID luminaire with magnetic ballast and also ensure that the problem is fixed on the first attempt. This guide addresses the four commonly encountered problems in two manners: 1) Summary of possible actions for those needing only a checklist; and 2) A detailed report on possible actions for those needing additional information.

The commonly encountered problems are:

a. Lamp on continuously
b. Lamp cycles on and off
c. Lamp will not start
d. Lamp burns dimly

2 Safety

Personal safety and the safety of the public should be the troubleshooter's first consideration. Personal protective equipment should be worn at all times while servicing HID luminaires, including but not limited to electrical gloves properly rated for the voltage expected to be encountered and eye protection. Extreme care must be taken regarding the surroundings as well since many luminaires are mounted close to energized electrical distribution equipment and in high vehicular traffic areas. One should follow all applicable work zone protection guidance.

3 Summary of Possible Actions (Assuming Daylight Troubleshooting)

When troubleshooting, it is advisable to use components such as lamps, starters, and photocontrols that have been previously tested and are known to be in working order. Occasionally, new, out-of-the-box components will be defective. Using tested components will prevent the introduction of a second problem into a system that already contains at least one problem.

a. Lamp on continuously ("day burner")

1. Replace photocontrol with a new one of correct ANSI type and voltage and leave uncovered. If lamp continues to burn, then:
2. Check for loose or broken neutral from luminaire supply to photocontrol socket.

b. Lamp cycles on and off

1. Replace lamp with new lamp of correct ANSI type and wattage. If lamp continues to cycle, then:
2. Check for loose connections, including "seating" the lamp in the socket. If lamp continues to cycle, then:
3. Check that the photocontrol is correctly wired and that load and line are not reversed. Then:
4. Check for line voltage fluctuations. Then:
5. Ensure that photocontrol photo cell is not aimed at a highly reflective surface or another light source. Follow-up inspection at night may be necessary to ensure proper photocontrol aiming.

c. Lamp will not start

1. Check that supply voltage matches the ballast installed. Then:
2. Check for proper photocontrol operation. If lamp does not start, then:
3. Visually inspect the ballast for burned windings. If ballast appears undamaged, then:
4. Replace lamp with known good lamp of proper ANSI type and wattage. If lamp does not start, then: