Luminaire Testing and Approval at INDOT
Road School 2017

by: David Boruff
March 7, 2017
High Pressure Sodium to Solid State

- **Initial concerns with Solid State:**
  - Light Output, Reliability, Cost
  - These concerns have been addressed

→ **INDOT is going to Solid State**
Approved Materials List

- Approved Materials List - Quality

- Simplifies
  - Design Effort
  - Shop Drawing submissions for contractors
  - Future Maintenance
Approved Lists

- **List comprised of 5 sub-lists**
  - High Mast, 1000 Watt HPS equivalents
  - High Lumen Roadway = 400 Watt HPS
  - Low Lumen Roadway = 250 Watt HPS
  - Low Lumen-Low Mounting Height Roadway
  - Underpass, = 150 Watt HPS

- **For each list models approved will:**
  - Provide adequate light output
  - Use significantly less energy than HPS
Testing Procedure for Approval

- **Indiana Test Method 957**
  - Basis for luminaire evaluation and approval
  - Adopted summer of 2016, revised last month

**Indiana Test Methods or Procedures Index**

Documents on this page will be opened as a PDF file or be downloaded to your computer depending on your personal settings.

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<td>ITM 955</td>
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<td>M. Pelham</td>
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First Step: Documentation Review

- Manufacturer provided Lab Reports & Certifications required
- Must be prepared by a Nationally Recognized or Accredited Lab (NVLAP)

Demonstrates that INDOT specifications are met or exceeded
ITM 957 (cont.)

- **Lab Testing**
  - Purdue Northwest- Office of Energy Efficiency & Reliability
  - Work will include checks of:
    - Lumen Depreciation
    - Power Quality, eg. harmonic distortion
    - Heat dissipation- essential for LEDs & driver

*Confirms performance and quality*
Field Testing

- Performance Checks of:
  - Light Output
  - Correlated Color Temperature
  - Power Consumption
  - Ease of Installation
  - Reliability

- Various Locations w/ existing lighting
  - Current demo sites
  - New locations, e.g. I-74 & Ronald Reagan Parkway, I-65 near downtown Indy
INDOT TEST PROJECT 1-70 EB
AERIAL VIEW ON OCTOBER 9TH, 2013

1000 Watt HPS
6 Luminaires Per Pole

Holophane LED
280W per Luminaire
3 Luminaires

Holophane LED
550 Watts Per Luminaire
6 Luminaires

Bright Lights BLP1000
540 Watts Per Luminaire
6 Luminaires

Lightefficient Plasma
280W per Luminaire
3 Luminaires

Towards the New Technology

I-70
Hancock County
Rest Area
circa 2013