PHOTOMETRIC CHARACTERISTICS
OF U. S. CARRIER DECK LIGHTS
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PHOTOMETRIC CHARACTERISTICS
OF U. S. CARRIER DECK LIGHTS

by

A. C. Wall

For

Naval Air Systems Command
Department of the Navy
Washington, D. C.

IMPORTANT NOTICE

Approved for public release by the director of the National Institute of Standards and Technology (NIST) on October 9, 2015

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Photometric Characteristics
of U. S. Carrier Deck Lights

By
A. C. Wall

1. INTRODUCTION

The Photometry Section of the National Bureau of Standards has made photometric measurements of carrier deck lights since the early days of night flying. The results of these tests have usually been reported in NBS test reports. Many of these reports are no longer readily available although the lights described are still in service. This report has been prepared to present in readily available form intensity distributions of the carrier deck lights currently in use. Photographs of many of these lights have been included to assist in identification.
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<th>Light Type</th>
<th>Figure Number</th>
<th>NBS Test Report Number</th>
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<td>Night Vision Flood Light</td>
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<td>14-inch hood, clear window</td>
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<tr>
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<td>1, 2</td>
<td>DCA</td>
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Additional information:
- Beam Spread (50% of peak)
Vertical intensity distributions through 0 degrees horizontal of one cell of a Source-Light Indicator System Assembly of the Mark 6 Fresnel-Lens Optical Landing System.

NBS Report 9350 Supplementary Figure 1
Horizontal intensity distributions through the vertical peak of one cell of a Source-Light Indicator System Assembly of the Mark 6 Fresnel-Lens Optical Landing System.
Vertical Intensity Distribution
of a
Carrier Homing Beacon
with a 32-volt, 150-watt 150PAR46/1 lamp
Reflector rotating at 40 rpm
producing 80 flashes per minute

Degrees Down
NBS Report 9350 Supplementary

Degrees Up
Figure 3
Vertical and Horizontal Incandescence Distributions of a "Night Vision Floodlight" Type 328-A with 14" Hood, Specular Reflector, and Clear Window

Lamp: Two Type 6.6/FAS6/4

6.6 amperes
250 units

Horizontal angles of traverse:
-0°
-3°
-6°
-9°
-12°

Degrees down

Vertical angle of traverse:
-6.5°

Degrees left

Degrees right

Figure 4
Vertical and Horizontal Intensity Distributions of a "Night Vision Floodlight" Type 326-A with 24" Hood, Corrugated Reflector, and Spread Lens Window:
Lamp: Type 200PAR46/6.6
6.6 amperes
200 watts

Horizontal angle of traverse:
-90°
-80°
-70°
-60°
-50°
-40°
-30°
-20°
-10°
0°
10°
20°
30°

Degrees down

Degrees left

Degrees right
Vertical and Horizontal Intensity Distributions of a "Night Vision Floodlight" Type 326-A with 26" Hood, Specular Reflector, and Clear Window

Lamp: Type 200PAR6/6.6

6.6 amperes
200 watts

Degrees down

Degrees left

Degrees right

Figure 6
Vertical and Horizontal Intensity Distributions of a “Night Vision Floodlight” Type 325-A with 16" Hood, Corrugated Reflector, and Spread Lens Window
Lamp: Type 200PAA6/6.6
6.6 amperes
200 watts

Horizontal angle of traverse:
0°
6°
12°
18°
24°
30°

Degrees down

Degrees left
Degrees right

Figure 7
Vertical and Horizontal Intensity Distributions of a "Night Vision Floodlight" Type 329-6 with 24" Hood, Specular Reflector, and Clear Window Lamps: Two Type 6.6/PAR36/4

6.6 Aspera 250 watts

Degrees down

Horizontal angle of traverse: 0°, 1°, 2°, 3°, 4°, 5°, 6°

Degrees left

Degrees right

Vertical angle of traverse: 0°, 1°, 2°, 3°, 4°
Vertical and Horizontal Intensity Distributions of a "Night Vision Floodlight" Type 328-A with 14" Hood, Corrugated Reflector, and Spread Lens Window.
Lamps: Two Type 6.6/PAR56/4 6.6 amperes 250 watts.

Horizontal angle of traverse: 0°, 5°, 10°, 15°, 20°, 25°, 30°, 45°, 60°, 90°

Vertical angle of traverse: -45°, 0°, 45°

Degrees down

Degrees left

Degrees right
Vertical and Horizontal Intensity Distributions of a "Night Vision Floodlight" Type 323-A with 14" Hood, Specular Reflector, and Clear Window

Lamp: Type 200PAR 4/6, 6, 6 ampere, 200 watts

Degrees left

Degrees down

Degrees left

Degrees right

Vertical angle of traverse: -4.5°
Vertical and Horizontal Intensity Distributions of a "Night Vision Floodlight" Type 319-A with 26" Hood, Corrugated Reflector, and Spread Lens Window

Lamps: Two Type 6.6/PAR36/4

6.6 amperes
250 watts

Degrees left
Degrees right

NBS Report 9350 Supplementary

Figure 11
HORIZONTAL INTENSITY DISTRIBUTIONS
of Angle-of-Approach Light
Type AA-1 Class II

Lamp: PR-12 operated at design current, 0.50 ampere

Location of Vertical Fiducial Line

Vertical Angle of Traverse

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<thead>
<tr>
<th>Degrees</th>
<th>Color</th>
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<tr>
<td>5.5</td>
<td>Yellow</td>
</tr>
<tr>
<td>3.0</td>
<td>Green</td>
</tr>
<tr>
<td>-4.0</td>
<td>Red</td>
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</table>

NBS Report 9350 Supplementary

Figure 13
Vertical and Horizontal intensity Distributions of a Deck Guide Light, L.C.D. No. 366 with a 6.6-ampere, 45-watt Q6.6A/T2½/C1 lamp

NBS Report 9350 Supplementary Figure 14
Vertical and Horizontal Intensity Distributions of a Deck Guide Light, L.C.D. No. 366 with a 6.6-ampere, 100-watt Q6.6A/T3/Cl lamp

NBS Report 9350 Supplementary

Figure 15
Partial lens cell assembly, exploded view showing "egg crate" lens restraining device, of the Fresnel-Lens Optical Landing System.

NBS Report 9350 Supplementary
Carrier homing beacon.

Figure 17
Schematic diagram of the "Night Vision Flood Light" types 328-A and 329-A
Battery operated AA-1 glide slope indicator.  Figure 20
A. Shear Ring Assembly
B. Guard Assembly
C. Baseplate (Lamps omitted)

Deck guide light, L.C.D. Co. No. 366