LM-79 Test Report

Relevant Standards
IES LM-79-2008
IES TM-30-2015
CIE 13.3-1995

Product SKU
FLUID VIEW® 24V LED Tape Light DI-24V-FV24-90**

Test Conditions
Test Temperature: 25.1 °C
Luminaire Sample Length: 12.00 in.
Power Supply: Agilent E3634A DC Power Supply
  Voltage: 24 VDC
  Current: 0.058 A
  Power Consumption: 1.39 W

Test Date
8/19/2016

Prepared By
Micah Corson, Product Engineer

Approved By
Wes Buck, Compliance Manager

The results contained in this report pertain only to the tested sample.
Photometric & Colorimetry data measured in accordance to IES LM-79-2008 standards, at the Elemental LED, Inc. Innovation Lab.
Integrating Sphere Test

**SUMMARY OF RESULTS**

<table>
<thead>
<tr>
<th>Metric</th>
<th>Test</th>
<th>Reference</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>$R_f$</td>
<td>93</td>
<td>100</td>
<td>IES TM-30-15 Fidelity Index</td>
</tr>
<tr>
<td>$R_g$</td>
<td>101</td>
<td>100</td>
<td>IES TM-30-15 Gamut Index</td>
</tr>
<tr>
<td>$R_a$ (CRI)</td>
<td>96</td>
<td>100</td>
<td>CIE Test Color Method General Index</td>
</tr>
<tr>
<td>$R_g$</td>
<td>77</td>
<td>100</td>
<td>CIE Test Color Method Sample Nine Score</td>
</tr>
<tr>
<td>LER</td>
<td>249</td>
<td>126</td>
<td>Luminous Efficacy of Radiation</td>
</tr>
<tr>
<td>Lumens</td>
<td>90</td>
<td>1852</td>
<td>Luminous Flux</td>
</tr>
<tr>
<td>$R_{f,skin}$</td>
<td>97</td>
<td>100</td>
<td>Average of CES15 and CES18 (skin)</td>
</tr>
</tbody>
</table>

**COLOR RENDERING INDEX**

<table>
<thead>
<tr>
<th>R 1</th>
<th>R 2</th>
<th>R 3</th>
<th>R 4</th>
<th>R 5</th>
<th>R 6</th>
<th>R 7</th>
<th>R 8</th>
<th>R 9</th>
<th>R10</th>
<th>R11</th>
<th>R12</th>
<th>R13</th>
<th>R14</th>
</tr>
</thead>
<tbody>
<tr>
<td>97.7</td>
<td>99.2</td>
<td>98.9</td>
<td>97.2</td>
<td>97.9</td>
<td>96.6</td>
<td>93.3</td>
<td>88.3</td>
<td>76.8</td>
<td>98.7</td>
<td>98.2</td>
<td>89.4</td>
<td>98.7</td>
<td>98.9</td>
</tr>
</tbody>
</table>

**SOURCE PROPERTIES**

**SOURCE CHROMATICITY COMPARISON**

This chart plots the chromaticity of the test and reference sources in the CIE 1931 chromaticity.

**SPECTRAL POWER DISTRIBUTION COMPARISON**

This chart displays the spectral power distributions for the test and reference source. Each SPD has been normalized so that the maximum values is 100%.

**GENERAL COLOR RENDITION**

**CES CHROMATICITY COMPARISON**

This plot shows the shift in chromaticity for each individual CES.

**COLOR VECTOR GRAPHIC**

This plot shows the $R_f$ and $R_g$ values relative to possible values.
<table>
<thead>
<tr>
<th>Sample Type</th>
<th>Elemental</th>
<th>Competitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Nature</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>Skin</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Textiles</td>
<td></td>
</tr>
<tr>
<td>D</td>
<td>Paints</td>
<td></td>
</tr>
</tbody>
</table>

**NOTE:** CES stands for "Color Evaluation Sample", these 99 samples are used in place of the 16 R values. The colors shown are approximate and depend on proper monitor calibration. Some colors may be outside of the gamut of the monitor, and will not be displayed accurately. For each sample, the color on the left represents the reference source, and the color on the right represents the test source.

Sample Type:
A - Nature  
B - Skin  
C - Textiles  
D - Paints
This chart displays the average Fidelity Index for all samples within the hue bin. The number of samples per bin, which can vary based on the CCT used for the calculation, is shown at the top. The color of the bar is based on the average chromaticity under the 5000 K reference illuminant; the colors may not display accurately depending on the calibration of the monitor, and should be used for orientation only.

This chart displays the change in chroma for the average sample within each hue bin. The number of samples per bin, which can vary based on the CCT used for the calculation, is shown at the top. The color of the bar is based on the average chromaticity under the 5000 K reference illuminant; the colors may not display accurately depending on the calibration of the monitor, and should be used for orientation only.

This chart displays the Fidelity Index for each of the 99 CES. The CES are arranged by their hue angle under the 5000 K reference source, which was also used to determine the color of each bar. The colors are approximate and depend on proper monitor calibration. Some colors may be outside of the gamut of the monitor, and will not be displayed accurately.
**SUMMARY OF RESULTS**

Luminaire: FLUID VIEW® 24V LED Tape Light  
SKU: DI-24V-FV24-90**  
Luminous Flux: 90.95 Lumens  
Power Consumption: 1.39 Watts  
Efficacy: 65.43 Lumens/Watt  
Spacing Criterion (0-180): 1.28  
Spacing Criterion (90-270): 1.26

*Graphs below are for reference, full IES files are available on Diode LED website*