

# TEST REPORT

## 1. Applicant

Client Name : FEELUX Co. Ltd.

Address : 235-48 Gwangjeok-ro Gwangjeok-myeon Yangju-si Gyeonggi-do 482-844 Korea

Date of Receipt : 20150327

## 2. Purpose of Report : Test

## 3. Test Standard / Item : LED / NDV1 27K-24V-FLEX-1

## 4. Test Period : 20150327 ~ 20150327

## 5. Test Environment

Ambient Temp. : ( 23.08 +- 3 ) °C

Relative Humidity : ( 22.79 +- 10 ) % RH

## 6. Test Result : Refer to the attachment

### Test Item

Name of Product :

FEELUX

Model / Rating :

Model : FEELUX

Rating :

|              |                |                          |
|--------------|----------------|--------------------------|
| Confirmation | Test by<br>kjc | Technical manager<br>kjc |
|--------------|----------------|--------------------------|

\*\*\*\*\*

The result shown in this test report refer only to the sample(s) tested unless otherwise stated.

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This report is for reference only. It cannot replace the report by standard organization(s).

## TEST RESULT

| Report Number | Sample Name | Sample Number | Test Standard |
|---------------|-------------|---------------|---------------|
| 20150327-0001 | FEELUX      |               | LED           |

| Test Item                    | Unit | Result         | Memo |
|------------------------------|------|----------------|------|
| Beam Distribution Test       | -    | See attachment |      |
| ATHD                         | %    | 0.0            |      |
| CIE 1931 Cxy                 |      | 0.4554, 0.4059 |      |
| Correlated Color Temperature | K    | 2742           |      |
| Ra                           | -    | 82.93          |      |
| Power Factor                 | %    | 1.000          |      |
| Input Voltage                | V    | 24.000         |      |
| Input Current                | A    | 0.047          |      |
| Input Watt                   | W    | 1.14           |      |
| Lamp Flux                    | lm   | 57.2           |      |
| Efficient                    | lm/W | 50.71          |      |
| Illuminance                  | lx   | 26             | 1 m  |
|                              |      | 6              | 2 m  |
|                              |      | 3              | 3 m  |

\* This test result is for the sample provided by the client.

Sample photo

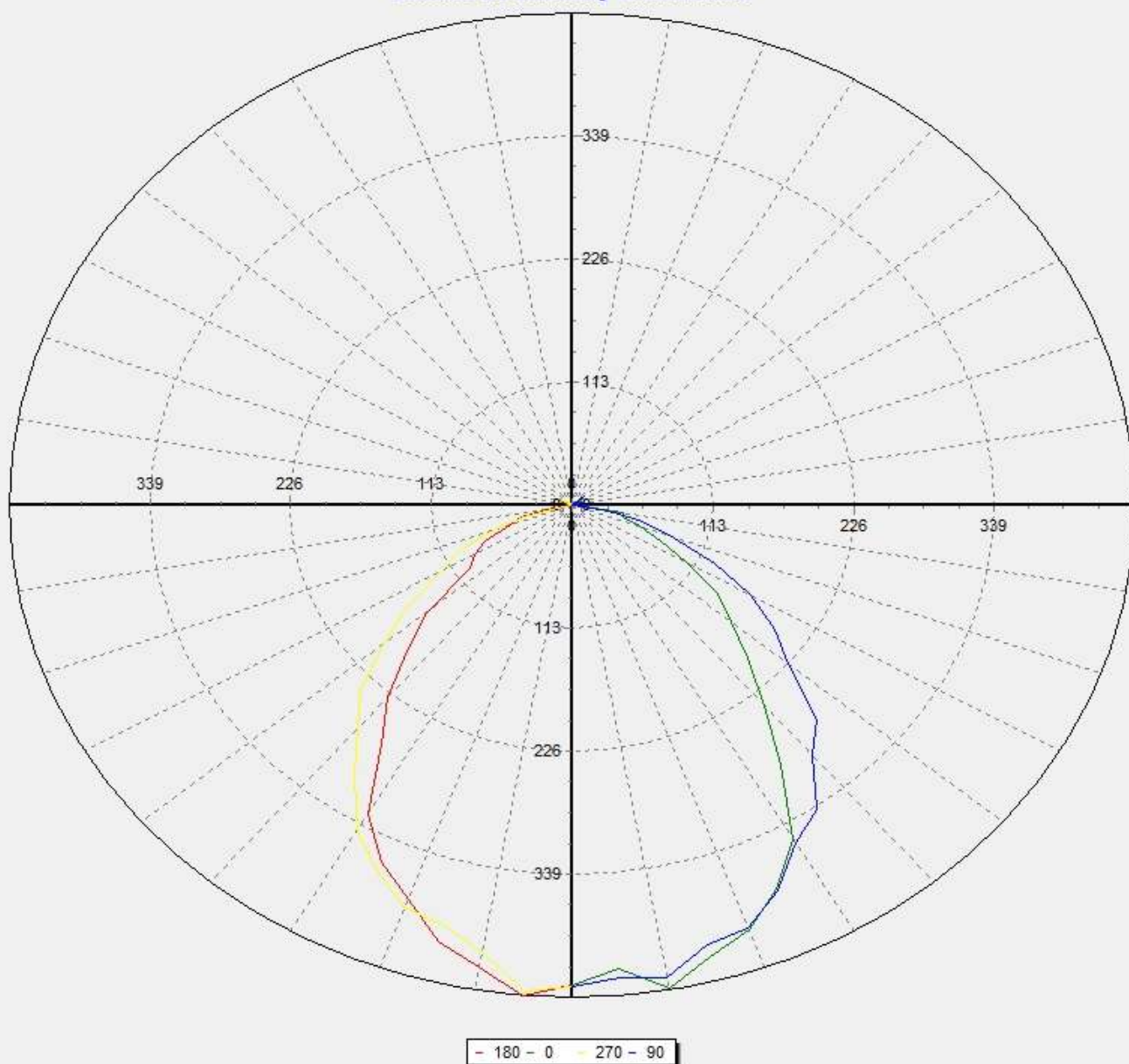
Click to load image

Luminaire

|                 |                                                                                        |                   |
|-----------------|----------------------------------------------------------------------------------------|-------------------|
| Lamp            | Report                                                                                 | 20150327-0001     |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |                   |
| Lamp flux (lm)  | 5 Operator                                                                             | Current (A) 0.047 |
| Total flux (lm) | 5 Date                                                                                 | Power Factor 1    |

2015-03-27 오전 11:36:47

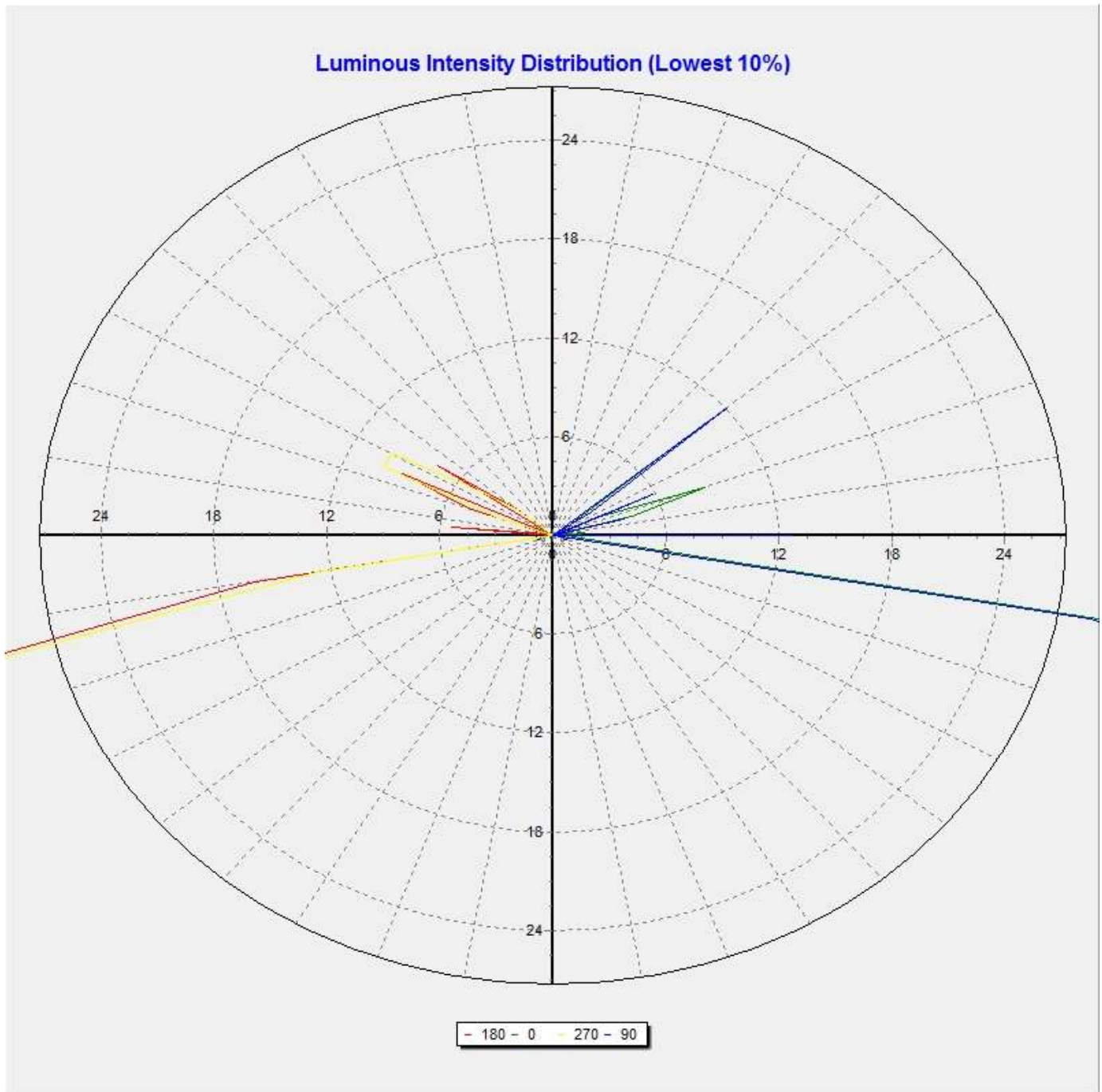
### Luminous Intensity Distribution



All luminous intensity values are in Cd/Klm unit.

Luminaire

|                 |                                                                                        |                        |
|-----------------|----------------------------------------------------------------------------------------|------------------------|
| Lamp            | Report                                                                                 | 20150327-0001          |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |                        |
| Lamp flux (lm)  | 5 Operator                                                                             | Current (A) 0.047      |
| Total flux (lm) | 5 Date                                                                                 | Power Factor 1         |
|                 |                                                                                        | 2015-03-27 오전 11:36:47 |



All luminous intensity values are in Cd/KLm unit.

Luminaire

|                 |                                                                                        |          |              |                        |
|-----------------|----------------------------------------------------------------------------------------|----------|--------------|------------------------|
| Lamp            | Report                                                                                 |          |              | 20150327-0001          |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |          |              |                        |
| Lamp flux (lm)  | 5                                                                                      | Operator | Current (A)  | 0.047                  |
| Total flux (lm) | 5                                                                                      | Date     | Power Factor | 1                      |
|                 |                                                                                        |          |              | 2015-03-27 오전 11:36:47 |

**Luminous Intensity Data**

| GWC | 0     | 10    | 20    | 30    | 40    | 50    | 60    | 70    | 80    | 90    | 100   | 110   | 120   | 130   | 140   |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0   | 25.20 | 25.20 | 25.04 | 24.62 | 24.83 | 24.85 | 24.67 | 24.63 | 25.00 | 25.30 | 25.09 | 25.41 | 25.78 | 25.26 | 25.11 |
| 5   | 24.45 | 25.46 | 24.65 | 24.85 | 24.82 | 25.82 | 25.64 | 25.33 | 24.74 | 24.96 | 24.90 | 25.35 | 24.76 | 25.21 | 24.45 |
| 10  | 25.73 | 25.67 | 25.20 | 25.52 | 24.67 | 25.14 | 25.87 | 24.86 | 24.68 | 25.17 | 24.84 | 24.98 | 24.82 | 25.09 | 24.85 |
| 15  | 24.52 | 24.42 | 24.60 | 24.31 | 24.31 | 24.29 | 23.97 | 24.22 | 23.62 | 23.94 | 24.06 | 24.76 | 24.15 | 23.77 | 24.45 |
| 20  | 23.75 | 22.86 | 23.33 | 23.79 | 23.70 | 22.86 | 23.71 | 23.03 | 22.88 | 23.66 | 23.59 | 22.95 | 23.20 | 24.06 | 23.67 |
| 25  | 22.22 | 21.98 | 22.36 | 22.65 | 23.49 | 22.27 | 21.83 | 21.85 | 22.32 | 22.35 | 22.22 | 22.38 | 22.25 | 22.11 | 22.22 |
| 30  | 20.26 | 20.26 | 19.69 | 20.43 | 20.79 | 20.95 | 20.81 | 20.05 | 20.37 | 20.48 | 20.48 | 20.17 | 20.78 | 20.25 | 20.35 |
| 35  | 16.68 | 16.49 | 17.76 | 18.09 | 18.40 | 18.03 | 18.90 | 19.39 | 19.15 | 19.55 | 19.24 | 19.33 | 18.38 | 19.14 | 18.62 |
| 40  | 13.77 | 13.94 | 14.59 | 15.81 | 15.81 | 17.25 | 17.26 | 17.86 | 17.47 | 17.11 | 17.54 | 17.57 | 17.10 | 16.58 | 15.10 |
| 45  | 11.39 | 12.03 | 11.42 | 11.99 | 13.25 | 14.59 | 15.35 | 14.88 | 15.37 | 15.92 | 15.85 | 14.67 | 14.27 | 13.45 | 13.31 |
| 50  | 9.57  | 9.22  | 9.31  | 10.03 | 10.84 | 11.34 | 12.14 | 13.32 | 13.82 | 12.94 | 12.93 | 11.90 | 11.76 | 11.08 | 10.79 |
| 55  | 8.12  | 7.62  | 8.18  | 7.84  | 8.24  | 9.60  | 10.04 | 10.59 | 11.11 | 11.37 | 11.85 | 10.62 | 9.27  | 8.67  | 8.40  |
| 60  | 6.01  | 6.22  | 5.83  | 6.72  | 7.24  | 7.28  | 8.23  | 8.98  | 9.97  | 9.45  | 8.90  | 8.03  | 7.91  | 7.76  | 7.23  |
| 65  | 4.47  | 5.57  | 4.38  | 5.22  | 5.44  | 6.09  | 6.16  | 6.33  | 7.30  | 7.20  | 7.09  | 6.68  | 6.23  | 5.05  | 5.93  |
| 70  | 3.31  | 3.53  | 4.16  | 3.99  | 4.46  | 3.94  | 4.52  | 5.16  | 5.26  | 5.02  | 5.29  | 5.01  | 4.62  | 4.16  | 3.79  |
| 75  | 2.42  | 3.11  | 2.62  | 3.29  | 3.42  | 3.07  | 3.78  | 3.28  | 2.82  | 3.17  | 3.48  | 3.50  | 2.37  | 2.93  | 3.57  |
| 80  | 2.38  | 1.87  | 2.29  | 1.69  | 2.59  | 2.41  | 2.44  | 2.60  | 1.76  | 1.66  | 0.48  | 1.92  | 2.56  | 2.67  | 2.09  |
| 85  | 0.06  | -0.19 | 0.50  | 0.66  | 1.02  | 1.84  | 1.72  | 0.93  | 0.57  | -0.11 | 0.58  | 1.13  | 1.34  | 1.98  | 2.00  |
| 90  | 0.07  | -0.20 | 0.42  | -0.37 | -0.08 | 0.60  | 0.13  | 0.33  | 0.43  | 0.73  | 0.52  | 1.34  | 0.86  | 0.60  | -0.23 |
| 95  | 0.10  | -0.41 | -0.15 | -0.83 | 0.78  | 0.33  | 0.30  | -0.82 | 0.24  | -0.07 | 0.71  | 0.26  | 0.35  | 0.38  | 0.08  |
| 100 | -0.45 | -0.04 | 0.16  | 0.19  | -0.66 | 0.73  | 0.32  | 0.09  | 0.62  | -0.18 | 0.32  | -0.42 | 0.14  | 0.33  | -0.16 |
| 105 | 0.25  | -0.38 | 0.08  | -0.08 | 0.38  | 0.34  | 0.35  | 0.16  | 0.07  | 0.22  | 0.14  | 0.17  | 0.48  | 0.31  | -0.07 |
| 110 | 0.49  | 0.22  | 0.25  | -0.15 | -0.22 | 0.31  | 1.23  | 0.13  | -0.26 | 0.02  | -0.51 | -0.08 | 0.38  | 0.77  | -0.15 |
| 115 | 0.16  | 0.09  | 0.06  | 0.22  | -0.15 | 0.20  | 0.29  | 0.36  | 0.34  | 0.33  | 0.59  | 0.13  | 0.26  | 0.34  | 0.37  |
| 120 | -0.44 | 0.10  | -0.16 | -0.45 | 0.76  | 0.32  | 0.21  | 0.24  | 0.43  | -0.59 | 0.17  | 0.47  | -0.38 | 0.52  | 0.48  |
| 125 | 0.06  | 0.69  | -0.05 | 0.56  | 0.74  | 0.78  | 1.02  | 0.13  | -0.67 | 0.14  | 0.43  | -0.91 | 0.24  | 0.13  | -0.36 |
| 130 | 0.61  | -0.39 | 0.44  | 0.82  | 0.39  | -0.68 | -0.79 | 0.75  | 0.86  | 0.69  | 0.02  | 0.27  | -0.32 | 0.20  | 0.13  |

Luminaire

|                 |                                                                                        |                        |
|-----------------|----------------------------------------------------------------------------------------|------------------------|
| Lamp            | Report                                                                                 | 20150327-0001          |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |                        |
| Lamp flux (lm)  | 5 Operator                                                                             | Current (A) 0.047      |
| Total flux (lm) | 5 Date                                                                                 | Power Factor 1         |
|                 |                                                                                        | 2015-03-27 오전 11:36:47 |

**Luminous Intensity Data (Continued)**

| GWC | 150   | 160   | 170   | 180   | 190   | 200   | 210   | 220   | 230   | 240   | 250   | 260   | 270   | 280   | 290   |
|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0   | 25.29 | 25.12 | 25.17 | 25.20 | 25.20 | 25.04 | 24.62 | 24.83 | 24.85 | 24.67 | 24.63 | 25.00 | 25.30 | 25.09 | 25.41 |
| 5   | 25.57 | 25.11 | 24.62 | 25.85 | 25.01 | 25.00 | 25.24 | 24.84 | 25.01 | 24.38 | 24.34 | 24.49 | 25.65 | 25.25 | 25.34 |
| 10  | 24.31 | 24.26 | 24.88 | 24.66 | 24.26 | 24.77 | 24.69 | 25.24 | 24.30 | 23.87 | 24.16 | 24.32 | 23.83 | 24.20 | 24.62 |
| 15  | 25.03 | 23.09 | 23.93 | 23.78 | 23.86 | 24.72 | 23.25 | 24.26 | 24.09 | 24.32 | 23.73 | 23.01 | 22.84 | 23.53 | 23.42 |
| 20  | 23.68 | 23.20 | 23.41 | 22.02 | 22.28 | 22.60 | 22.20 | 23.12 | 22.80 | 22.46 | 23.36 | 22.35 | 22.48 | 22.88 | 23.29 |
| 25  | 21.90 | 21.42 | 20.91 | 20.67 | 21.28 | 21.24 | 20.49 | 21.77 | 21.16 | 21.34 | 21.40 | 20.79 | 21.14 | 21.08 | 20.94 |
| 30  | 19.76 | 19.06 | 19.51 | 18.71 | 18.11 | 18.03 | 19.21 | 19.41 | 18.65 | 19.41 | 19.25 | 19.90 | 19.71 | 19.70 | 19.97 |
| 35  | 17.05 | 16.43 | 16.58 | 15.27 | 15.91 | 15.86 | 16.41 | 16.87 | 17.32 | 17.39 | 17.18 | 17.19 | 17.44 | 17.35 | 18.09 |
| 40  | 14.42 | 14.27 | 14.07 | 13.17 | 12.94 | 12.60 | 13.50 | 14.23 | 14.53 | 15.10 | 15.94 | 15.91 | 15.29 | 15.37 | 16.20 |
| 45  | 12.31 | 12.04 | 11.34 | 10.60 | 10.68 | 10.81 | 10.98 | 11.13 | 11.94 | 13.00 | 13.49 | 13.81 | 13.72 | 13.54 | 14.09 |
| 50  | 9.85  | 9.42  | 9.36  | 8.77  | 8.83  | 8.35  | 9.12  | 9.01  | 9.92  | 11.37 | 11.10 | 11.02 | 11.25 | 12.12 | 11.11 |
| 55  | 8.38  | 7.40  | 7.52  | 5.71  | 6.59  | 6.94  | 6.86  | 7.01  | 7.98  | 7.72  | 8.57  | 9.15  | 9.30  | 9.57  | 9.02  |
| 60  | 6.14  | 5.48  | 6.24  | 5.17  | 5.46  | 5.37  | 6.15  | 6.00  | 6.45  | 6.43  | 6.44  | 7.61  | 6.96  | 7.40  | 7.32  |
| 65  | 5.12  | 5.12  | 4.64  | 4.40  | 3.98  | 4.97  | 4.55  | 4.69  | 5.54  | 4.61  | 4.89  | 4.89  | 5.60  | 5.25  | 5.19  |
| 70  | 3.92  | 4.09  | 3.41  | 2.98  | 2.97  | 3.64  | 3.52  | 3.79  | 2.96  | 3.34  | 3.97  | 3.38  | 4.04  | 3.68  | 3.29  |
| 75  | 2.18  | 3.47  | 2.91  | 2.42  | 2.06  | 2.31  | 2.92  | 1.88  | 2.55  | 2.56  | 2.67  | 2.12  | 2.32  | 2.62  | 2.49  |
| 80  | 2.51  | 2.50  | 1.48  | 0.92  | 2.21  | 1.55  | 2.01  | 1.46  | 1.60  | 1.77  | 1.54  | 1.46  | 0.73  | 0.38  | 1.37  |
| 85  | 1.14  | -0.14 | 0.20  | -0.32 | -0.01 | 0.49  | -0.06 | 0.08  | 0.34  | 1.20  | 0.29  | 0.25  | -0.27 | 0.21  | 1.18  |
| 90  | -0.50 | -0.09 | 0.29  | -0.22 | -0.44 | 0.20  | -0.06 | 0.29  | 0.70  | 0.63  | 0.41  | -0.58 | -1.14 | -0.37 | 0.17  |
| 95  | -0.33 | -0.09 | 0.04  | 0.31  | 0.07  | -0.12 | -0.02 | -0.33 | -0.06 | 0.80  | 0.35  | 0.22  | -0.41 | 0.13  | 0.40  |
| 100 | 0.47  | -0.16 | -0.55 | 0.02  | 0.12  | 0.42  | 0.37  | 0.28  | -0.09 | 0.21  | -0.47 | -0.25 | -0.27 | -0.13 | 0.21  |
| 105 | 0.05  | -0.03 | -0.03 | -0.42 | 0.70  | -0.42 | -0.53 | -0.47 | 0.06  | 0.05  | 0.02  | 0.16  | -0.15 | 0.63  | 0.09  |
| 110 | 0.01  | -0.48 | 0.49  | 0.27  | 0.46  | 0.01  | 0.84  | 0.02  | 0.39  | 0.69  | -0.15 | 0.56  | 0.18  | 0.43  | 0.38  |
| 115 | -0.18 | 0.17  | 0.56  | 0.50  | -0.01 | -0.06 | 0.10  | 0.53  | 0.62  | 0.25  | -0.25 | 0.31  | 0.56  | -0.31 | 0.50  |
| 120 | -0.23 | 0.68  | -0.28 | -0.16 | 0.75  | 0.07  | 0.84  | 0.24  | -0.04 | 0.48  | -0.10 | 0.52  | 0.57  | -0.32 | 0.54  |
| 125 | 0.18  | -0.21 | -0.58 | 0.42  | 0.26  | -0.06 | -0.02 | 0.31  | 0.48  | -0.02 | -0.32 | 0.06  | 0.24  | 0.35  | 0.52  |
| 130 | 0.00  | 0.46  | 0.25  | 0.14  | 0.39  | -0.18 | 0.08  | -0.35 | -0.42 | 0.59  | 0.36  | -0.10 | 0.13  | -0.10 | 0.55  |

Luminaire

|                 |                                                                                        |                        |
|-----------------|----------------------------------------------------------------------------------------|------------------------|
| Lamp            | Report                                                                                 | 20150327-0001          |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\Startup\Data\150327\NDV 1W FLEX 2700K -1.jdt |                        |
| Lamp flux (lm)  | 5 Operator                                                                             | Current (A) 0.047      |
| Total flux (lm) | 5 Date                                                                                 | Power Factor 1         |
|                 |                                                                                        | 2015-03-27 오전 11:36:47 |

**Luminous Intensity Data (Continued)**

| GWC | 300   | 310   | 320   | 330   | 340   | 350   | 360   |
|-----|-------|-------|-------|-------|-------|-------|-------|
| 0   | 25.78 | 25.26 | 25.11 | 25.29 | 25.12 | 25.17 | 25.20 |
| 5   | 25.29 | 24.26 | 25.22 | 25.33 | 24.71 | 25.01 | 24.45 |
| 10  | 24.68 | 23.93 | 23.71 | 24.03 | 25.16 | 24.81 | 25.73 |
| 15  | 22.70 | 24.00 | 24.37 | 24.14 | 24.29 | 23.72 | 24.52 |
| 20  | 22.67 | 22.04 | 22.75 | 22.67 | 23.68 | 23.03 | 23.75 |
| 25  | 21.39 | 21.44 | 20.91 | 21.03 | 21.58 | 21.67 | 22.22 |
| 30  | 19.52 | 19.42 | 19.34 | 19.42 | 19.39 | 18.67 | 20.26 |
| 35  | 17.82 | 18.12 | 17.20 | 16.55 | 15.97 | 17.59 | 16.68 |
| 40  | 15.80 | 14.88 | 15.00 | 13.88 | 13.58 | 14.04 | 13.77 |
| 45  | 13.36 | 12.14 | 11.88 | 11.22 | 11.14 | 10.97 | 11.39 |
| 50  | 11.04 | 10.31 | 10.03 | 8.65  | 8.57  | 8.34  | 9.57  |
| 55  | 9.39  | 8.81  | 7.68  | 7.67  | 7.33  | 7.09  | 8.12  |
| 60  | 7.67  | 6.16  | 5.63  | 5.79  | 4.94  | 6.22  | 6.01  |
| 65  | 5.38  | 4.77  | 4.79  | 3.98  | 4.70  | 4.09  | 4.47  |
| 70  | 3.42  | 3.34  | 3.63  | 3.57  | 3.69  | 3.14  | 3.31  |
| 75  | 2.69  | 2.42  | 2.98  | 2.19  | 2.03  | 2.61  | 2.42  |
| 80  | 1.84  | 1.77  | 1.41  | 2.05  | 1.75  | 1.68  | 2.38  |
| 85  | 1.32  | 0.03  | 0.40  | 0.49  | -0.33 | 0.51  | 0.06  |
| 90  | 0.61  | 0.58  | 0.21  | 0.65  | -0.24 | 0.35  | 0.07  |
| 95  | 0.02  | 0.03  | 0.49  | 0.34  | 0.01  | -0.10 | 0.10  |
| 100 | -0.21 | -0.60 | 0.08  | -0.09 | -0.08 | -0.06 | -0.45 |
| 105 | 0.23  | -0.16 | -0.41 | 0.25  | -0.32 | 0.20  | 0.25  |
| 110 | 0.16  | -0.46 | -0.17 | -0.24 | 0.35  | 0.36  | 0.49  |
| 115 | 0.61  | -0.40 | 0.65  | 0.06  | -0.57 | -0.16 | 0.16  |
| 120 | 0.31  | -0.88 | 0.36  | 0.11  | 0.07  | -0.08 | -0.44 |
| 125 | -0.02 | 0.40  | -0.08 | 0.88  | 0.30  | -0.31 | 0.06  |
| 130 | 0.15  | 0.55  | 0.70  | 0.29  | 0.23  | -0.13 | 0.61  |

Luminaire

|                 |                                                                                        |          |              |                        |
|-----------------|----------------------------------------------------------------------------------------|----------|--------------|------------------------|
| Lamp            | Report                                                                                 |          |              | 20150327-0001          |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |          |              |                        |
| Lamp flux (lm)  | 5                                                                                      | Operator | Current (A)  | 0.047                  |
| Total flux (lm) | 5                                                                                      | Date     | Power Factor | 1                      |
|                 |                                                                                        |          |              | 2015-03-27 오전 11:36:47 |

2015-03-27 오전 11:36:47

**Luminous Flux Table**

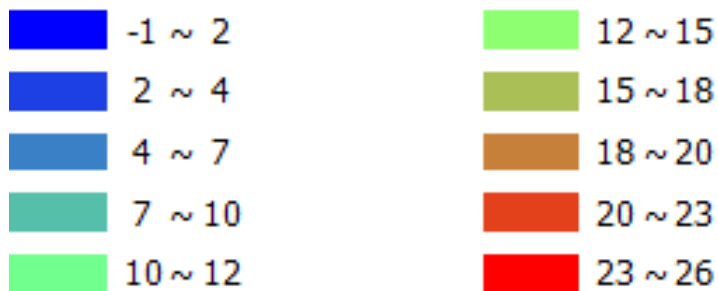
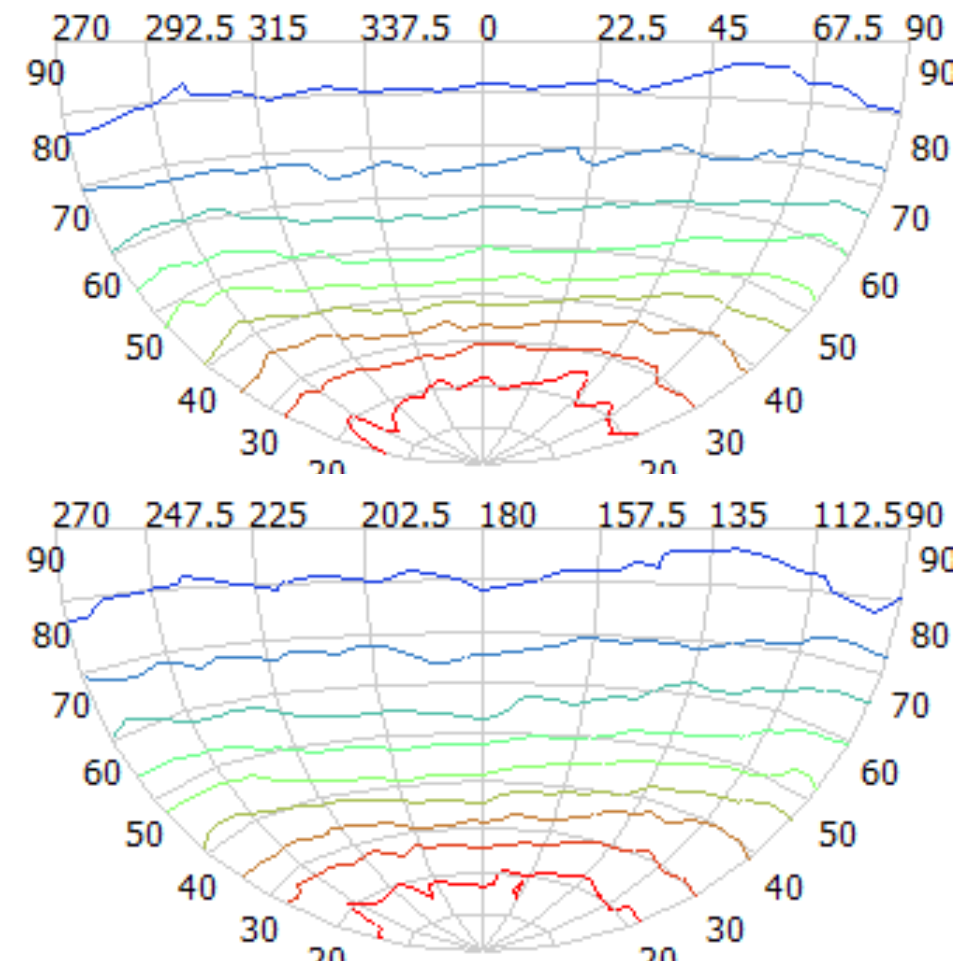
Total Lamp Lumens: 57.2  
 Luminaire Efficiency (lm/W): 57.16  
 CIE Classification: Direct

| Elevation | Lumens | Cumulative | Lamp % | Luminaire % |
|-----------|--------|------------|--------|-------------|
| 0         | 0.15   | 0.15       | 0.26   | 0.26        |
| 5         | 1.20   | 1.35       | 2.35   | 2.35        |
| 10        | 2.35   | 3.70       | 6.47   | 6.47        |
| 15        | 3.40   | 7.10       | 12.41  | 12.42       |
| 20        | 4.32   | 11.42      | 19.97  | 19.98       |
| 25        | 5.02   | 16.44      | 28.75  | 28.77       |
| 30        | 5.41   | 21.85      | 38.20  | 38.22       |
| 35        | 5.53   | 27.38      | 47.86  | 47.89       |
| 40        | 5.38   | 32.75      | 57.26  | 57.30       |
| 45        | 4.97   | 37.73      | 65.96  | 66.00       |
| 50        | 4.42   | 42.14      | 73.67  | 73.72       |
| 55        | 3.83   | 45.97      | 80.37  | 80.43       |
| 60        | 3.25   | 49.23      | 86.06  | 86.12       |
| 65        | 2.63   | 51.85      | 90.65  | 90.71       |
| 70        | 2.00   | 53.86      | 94.16  | 94.22       |
| 75        | 1.46   | 55.32      | 96.71  | 96.77       |
| 80        | 0.98   | 56.30      | 98.42  | 98.49       |
| 85        | 0.32   | 56.62      | 98.98  | 99.04       |
| 90        | 0.10   | 56.72      | 99.15  | 99.22       |
| 95        | 0.05   | 56.76      | 99.23  | 99.30       |
| 100       | 0.00   | 56.76      | 99.24  | 99.30       |
| 105       | 0.03   | 56.79      | 99.29  | 99.35       |
| 110       | 0.09   | 56.89      | 99.45  | 99.52       |
| 115       | 0.10   | 56.98      | 99.62  | 99.69       |
| 120       | 0.07   | 57.05      | 99.74  | 99.81       |
| 125       | 0.07   | 57.12      | 99.86  | 99.93       |
| 130       | 0.04   | 57.16      | 99.93  | 100.00      |

Luminaire

|                 |                                                                                        |                        |
|-----------------|----------------------------------------------------------------------------------------|------------------------|
| Lamp            | Report                                                                                 | 20150327-0001          |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |                        |
| Lamp flux (lm)  | 5 Operator                                                                             | Current (A) 0.047      |
| Total flux (lm) | 5 Date                                                                                 | Power Factor 1         |
|                 |                                                                                        | 2015-03-27 오전 11:36:47 |

### IsoCandela (Type C)

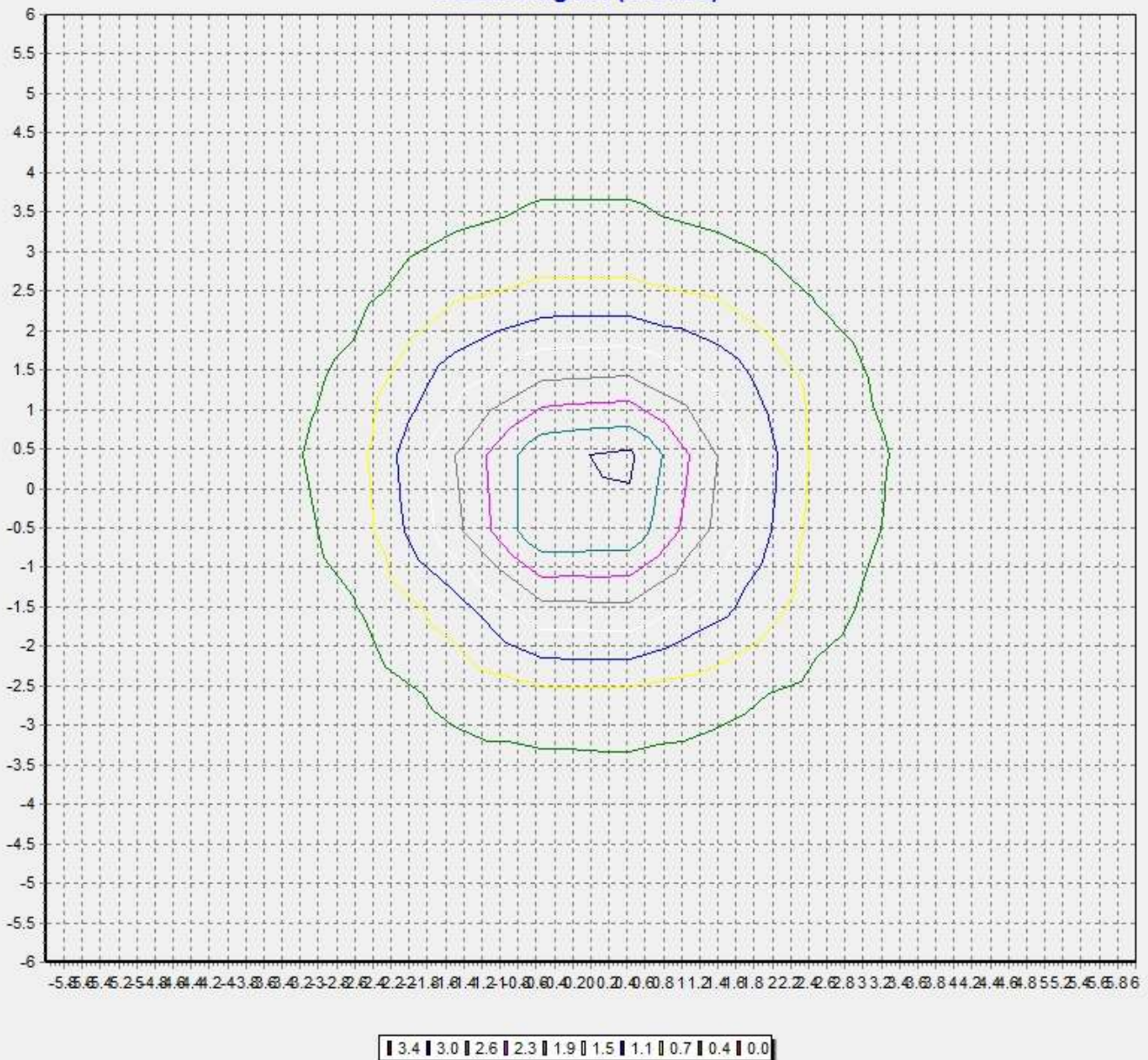


Luminaire

|                 |                                                                                        |                   |
|-----------------|----------------------------------------------------------------------------------------|-------------------|
| Lamp            | Report                                                                                 | 20150327-0001     |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |                   |
| Lamp flux (lm)  | 5 Operator                                                                             | Current (A) 0.047 |
| Total flux (lm) | 5 Date                                                                                 | Power Factor 1    |

2015-03-27 오전 11:36:47

**IsoLux Diagram (Ground)**



Pole Height (m): 2.7

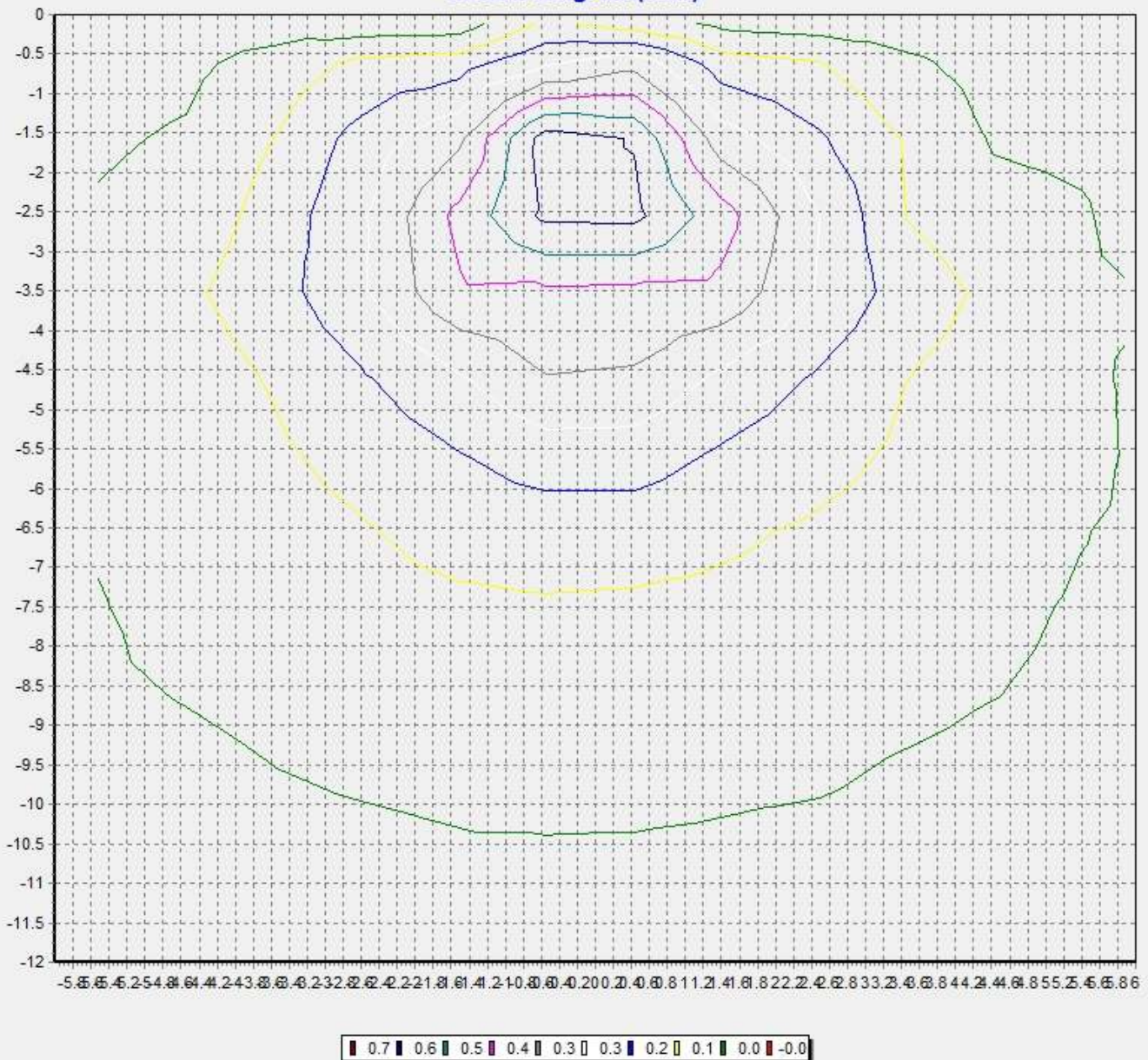
Area Width (m): 12

Luminaire

|                 |                                                                                        |                   |
|-----------------|----------------------------------------------------------------------------------------|-------------------|
| Lamp            | Report                                                                                 | 20150327-0001     |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\Startup\Data\150327\NDV 1W FLEX 2700K -1.jdt |                   |
| Lamp flux (lm)  | 5 Operator                                                                             | Current (A) 0.047 |
| Total flux (lm) | 5 Date                                                                                 | Power Factor 1    |

2015-03-27 오전 11:36:47

**IsoLux Diagram (Wall)**



|                  |     |                    |     |
|------------------|-----|--------------------|-----|
| Pole Height (m): | 2.7 | Wall Distance (m): | 2.7 |
| Aiming Plane:    | 0   | Wall Height (m):   | 12  |

Luminaire

Lamp

Report

20150327-0001

|                 |    |              |       |          |                                                                               |
|-----------------|----|--------------|-------|----------|-------------------------------------------------------------------------------|
| No. of lamps    | 1  | Voltage (V)  | 24    | Filename | C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |
| Lamp flux (lm)  | 57 | Current (A)  | 0.047 | Operator |                                                                               |
| Total flux (lm) | 57 | Power Factor | 1     | Date     | 2015-03-27 오전 11:36:47                                                        |

Illuminance Levels (Ground)

|       |       |       |       |       |       |      |      |      |      |      |      |      |      |
|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| 6.00  | 0.02  | 0.02  | 0.03  | 0.04  | 0.06  | 0.08 | 0.09 | 0.08 | 0.06 | 0.03 | 0.03 | 0.03 | 0.02 |
| 5.00  | 0.02  | 0.03  | 0.05  | 0.08  | 0.09  | 0.15 | 0.16 | 0.15 | 0.09 | 0.08 | 0.05 | 0.03 | 0.03 |
| 4.00  | 0.02  | 0.05  | 0.06  | 0.13  | 0.16  | 0.28 | 0.30 | 0.29 | 0.15 | 0.12 | 0.06 | 0.05 | 0.02 |
| 3.00  | 0.03  | 0.06  | 0.12  | 0.18  | 0.32  | 0.46 | 0.58 | 0.47 | 0.31 | 0.16 | 0.11 | 0.06 | 0.03 |
| 2.00  | 0.05  | 0.07  | 0.14  | 0.27  | 0.72  | 1.09 | 1.44 | 1.09 | 0.68 | 0.25 | 0.13 | 0.07 | 0.04 |
| 1.00  | 0.05  | 0.10  | 0.20  | 0.38  | 0.95  | 2.03 | 2.71 | 2.08 | 0.98 | 0.36 | 0.20 | 0.10 | 0.06 |
| 0.00  | 0.05  | 0.08  | 0.20  | 0.39  | 1.26  | 2.68 | 3.46 | 2.77 | 1.36 | 0.42 | 0.22 | 0.11 | 0.05 |
| -1.00 | 0.05  | 0.08  | 0.18  | 0.33  | 0.84  | 1.92 | 2.58 | 1.94 | 0.93 | 0.33 | 0.18 | 0.09 | 0.05 |
| -2.00 | 0.04  | 0.06  | 0.12  | 0.22  | 0.59  | 0.93 | 1.35 | 1.01 | 0.66 | 0.24 | 0.12 | 0.06 | 0.04 |
| -3.00 | 0.03  | 0.06  | 0.10  | 0.14  | 0.26  | 0.43 | 0.50 | 0.43 | 0.29 | 0.17 | 0.11 | 0.06 | 0.03 |
| -4.00 | 0.02  | 0.04  | 0.05  | 0.10  | 0.13  | 0.23 | 0.26 | 0.24 | 0.15 | 0.12 | 0.06 | 0.04 | 0.02 |
| -5.00 | 0.02  | 0.02  | 0.04  | 0.06  | 0.07  | 0.12 | 0.13 | 0.12 | 0.07 | 0.07 | 0.05 | 0.02 | 0.02 |
| -6.00 | 0.02  | 0.02  | 0.02  | 0.03  | 0.05  | 0.06 | 0.06 | 0.06 | 0.05 | 0.03 | 0.02 | 0.02 | 0.02 |
| -6.00 | -5.00 | -4.00 | -3.00 | -2.00 | -1.00 | 0.00 | 1.00 | 2.00 | 3.00 | 4.00 | 5.00 | 6.00 |      |

Illum. (Max.): 3.46

All illuminance level values are in lux.

Illum. (Min.): 0.02

Illum. Avg.: 0.33

Total Optical Solution Provider



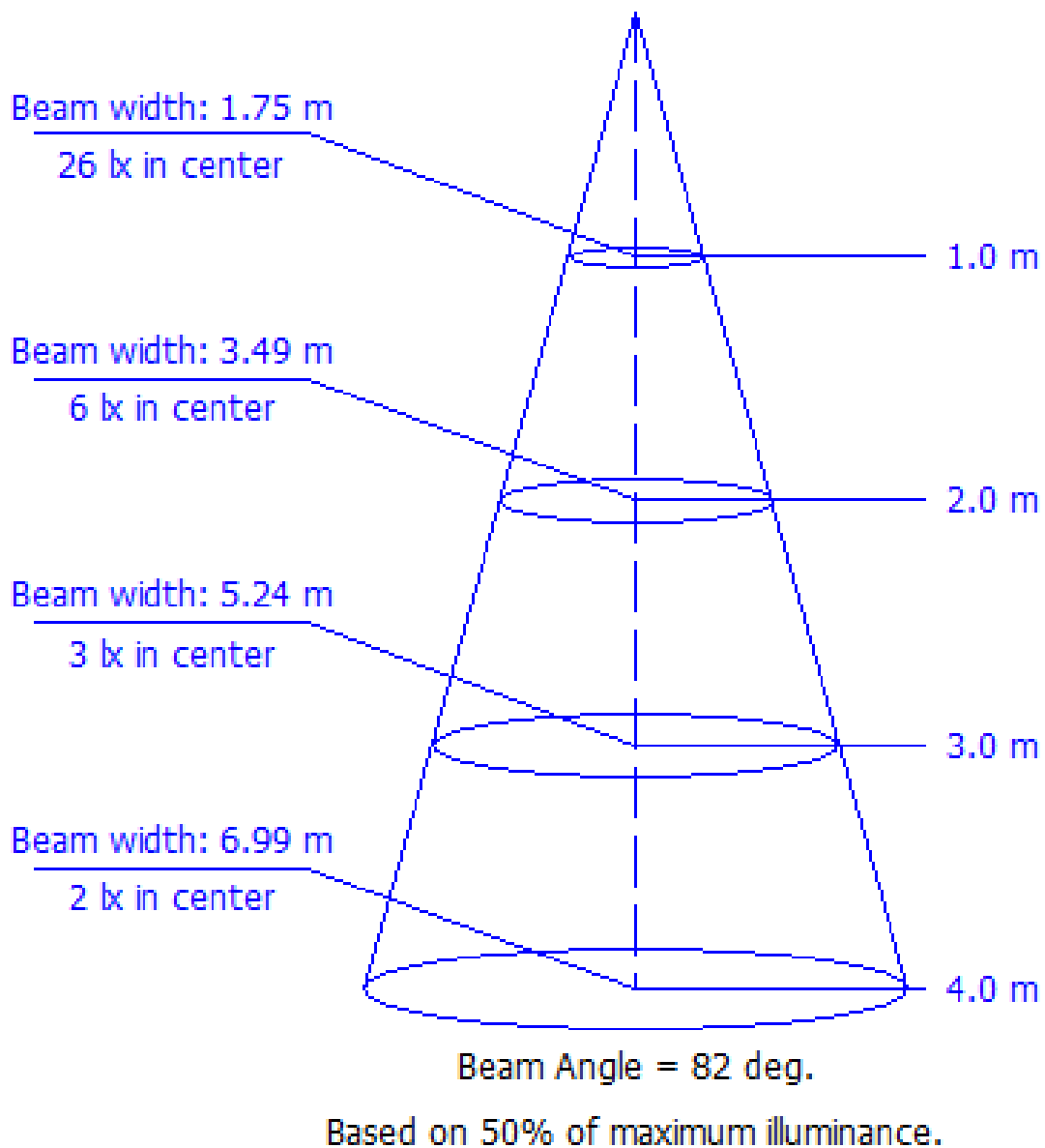
<http://www.jnctech.co.kr>  
J & C Technology Co., Ltd.

Luminaire

|                 |                                                                                        |          |              |                        |
|-----------------|----------------------------------------------------------------------------------------|----------|--------------|------------------------|
| Lamp            | Report                                                                                 |          |              | 20150327-0001          |
| No. of lamps    | Filename C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |          |              |                        |
| Lamp flux (lm)  | 5                                                                                      | Operator | Current (A)  | 0.047                  |
| Total flux (lm) | 5                                                                                      | Date     | Power Factor | 1                      |
|                 |                                                                                        |          |              | 2015-03-27 오전 11:36:47 |

2015-03-27 오전 11:36:47

### Illuminance Cone Diagram



Luminaire

Lamp

Report

20150327-0001

|                 |    |              |       |          |                                                                               |
|-----------------|----|--------------|-------|----------|-------------------------------------------------------------------------------|
| No. of lamps    | 1  | Voltage (V)  | 24    | Filename | C:\Program Files\JNCTECH\GoniLED\StartUp\Data\150327\NDV 1W FLEX 2700K -1.jdt |
| Lamp flux (lm)  | 57 | Current (A)  | 0.047 | Operator |                                                                               |
| Total flux (lm) | 57 | Power Factor | 1     | Date     | 2015-03-27 오전 11:36:47                                                        |

Coefficient of Utilization

|                         |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Refl. Ceiling (%)       | 80%  | 80%  | 80%  | 70%  | 70%  | 70%  | 50%  | 50%  | 50%  | 30%  | 30%  | 30%  | 10%  | 10%  | 10%  | 0%   |
| Refl. Wall (%)          | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 50%  | 30%  | 10%  | 0%   |
| Eff. Floor Cavity Refl. | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  | 20%  |
| Room CR 0               | 1.16 | 1.16 | 1.16 | 1.14 | 1.14 | 1.14 | 1.08 | 1.08 | 1.08 | 1.03 | 1.03 | 1.03 | 0.99 | 0.99 | 0.99 | 0.97 |
| Room CR 1               | 1.04 | 1.00 | 0.97 | 1.02 | 0.98 | 0.95 | 0.97 | 0.95 | 0.92 | 0.93 | 0.91 | 0.89 | 0.90 | 0.88 | 0.86 | 0.84 |
| Room CR 2               | 0.92 | 0.86 | 0.81 | 0.90 | 0.84 | 0.80 | 0.86 | 0.82 | 0.78 | 0.83 | 0.79 | 0.76 | 0.80 | 0.77 | 0.74 | 0.72 |
| Room CR 3               | 0.82 | 0.74 | 0.69 | 0.80 | 0.73 | 0.68 | 0.77 | 0.71 | 0.67 | 0.74 | 0.69 | 0.65 | 0.72 | 0.68 | 0.64 | 0.62 |
| Room CR 4               | 0.73 | 0.65 | 0.59 | 0.72 | 0.64 | 0.59 | 0.69 | 0.63 | 0.58 | 0.67 | 0.61 | 0.57 | 0.65 | 0.60 | 0.56 | 0.54 |
| Room CR 5               | 0.66 | 0.58 | 0.52 | 0.65 | 0.57 | 0.51 | 0.63 | 0.56 | 0.51 | 0.61 | 0.55 | 0.50 | 0.59 | 0.54 | 0.49 | 0.47 |
| Room CR 6               | 0.60 | 0.52 | 0.46 | 0.59 | 0.51 | 0.45 | 0.57 | 0.50 | 0.45 | 0.55 | 0.49 | 0.45 | 0.54 | 0.48 | 0.44 | 0.42 |
| Room CR 7               | 0.55 | 0.46 | 0.41 | 0.54 | 0.46 | 0.41 | 0.52 | 0.45 | 0.40 | 0.51 | 0.45 | 0.40 | 0.49 | 0.44 | 0.40 | 0.38 |
| Room CR 8               | 0.50 | 0.42 | 0.37 | 0.49 | 0.42 | 0.37 | 0.48 | 0.41 | 0.36 | 0.47 | 0.41 | 0.36 | 0.46 | 0.40 | 0.36 | 0.34 |
| Room CR 9               | 0.46 | 0.39 | 0.33 | 0.46 | 0.38 | 0.33 | 0.44 | 0.38 | 0.33 | 0.43 | 0.37 | 0.33 | 0.42 | 0.37 | 0.33 | 0.31 |
| Room CR 10              | 0.43 | 0.35 | 0.30 | 0.42 | 0.35 | 0.30 | 0.41 | 0.35 | 0.30 | 0.40 | 0.34 | 0.30 | 0.39 | 0.34 | 0.30 | 0.28 |