

## PHOTOMETRIC RESULTS

|                   |   |                      |                  |
|-------------------|---|----------------------|------------------|
| <b>Name:</b>      | <b>TTP 70 LINE L1180 TOP 830 SRT/MID LO</b> |                      |                  |
| <b>Number:</b>    | 90488L120-58                                | <b>Diameter:</b>     | 0 mm             |
| <b>Report:</b>    | 09-01-2020                                  | <b>Length:</b>       | 1180 mm          |
| <b>Meas.-no.:</b> | 01  | <b>Width:</b>        | 70 mm            |
| <b>Lamp type:</b> | LED 830 - 01                                | <b>Height:</b>       | 70 mm            |
| <b>Number:</b>    | 1   | <b>Power:</b>        | 22,99 W          |
| <b>Lamp flux:</b> | 3440,00 lm                                  | <b>Operator:</b>     | INDEL AGUE GROUP |
| <b>Date:</b>      | 10-01-2020 10:22:33                         | <b>Output ratio:</b> | 86,3 %           |

## Protocol

**LiTG-class:** A31  
**UTE-class:** 0,78 G + 0,08 T  
**IES-class:** 42 - 71 - 90 - 91 - 86  
**TM5-class:** BZ5

|  |            |          |
|--|------------|----------|
| <b>Divergences in the plane through maximum intensity:</b> | Horizontal | Vertical |
| <b>One half peak divergence</b>                            | 103,5°     | 131,0°   |
| <b>Half peak side angle (left)</b>                         | -51,8°     | -65,5°   |
| <b>Half peak side angle (right)</b>                        | 51,8°      | 65,5°    |
| <b>One tenth peak divergence</b>                           | 157,3°     | 228,0°   |
| <b>Tenth peak side angle (left)</b>                        | -78,6°     | -114,0°  |
| <b>Tenth peak side angle (right)</b>                       | 78,6°      | 114,0°   |

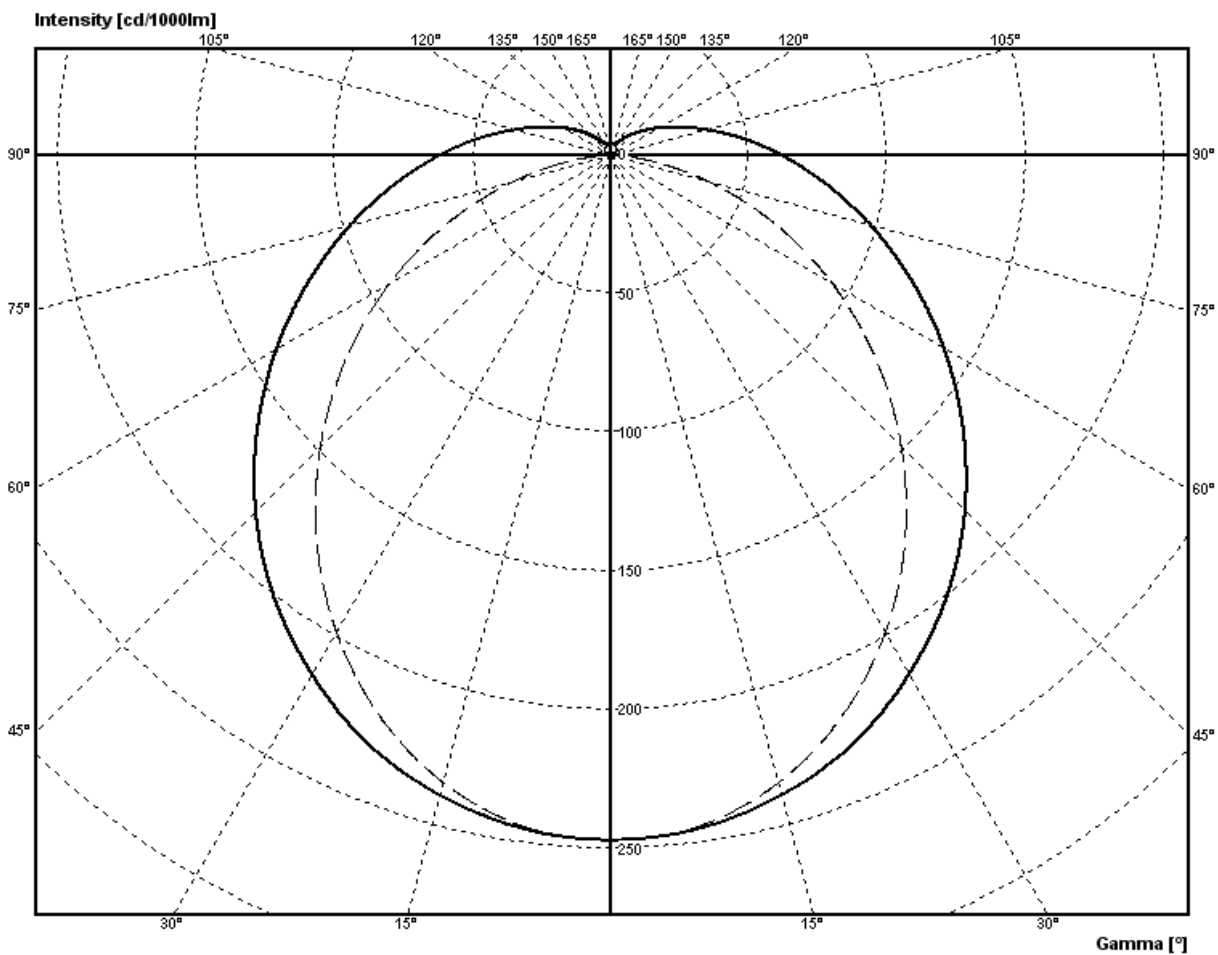
|                  |        |        |        |        |        |        |        |        |        |        |
|------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>C-planes:</b> | 0,0°   | 15,0°  | 30,0°  | 45,0°  | 60,0°  | 75,0°  | 90,0°  | 105,0° | 120,0° | 135,0° |
|                  | 150,0° | 165,0° | 180,0° | 195,0° | 210,0° | 225,0° | 240,0° | 255,0° | 270,0° | 285,0° |
|                  | 300,0° | 315,0° | 330,0° | 345,0° |        |        |        |        |        |        |

|               |        |        |        |        |        |        |        |        |        |        |
|---------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| <b>Gamma:</b> | 0,0°   | 5,0°   | 10,0°  | 15,0°  | 20,0°  | 25,0°  | 30,0°  | 35,0°  | 40,0°  | 45,0°  |
|               | 50,0°  | 55,0°  | 60,0°  | 65,0°  | 70,0°  | 75,0°  | 80,0°  | 85,0°  | 90,0°  | 95,0°  |
|               | 100,0° | 105,0° | 110,0° | 115,0° | 120,0° | 125,0° | 130,0° | 135,0° | 140,0° | 145,0° |
|               | 150,0° | 155,0° | 160,0° | 165,0° | 170,0° | 175,0° | 180,0° |        |        |        |

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|------------|--------------------------------------|---------------|------------------|
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| Number:    | 90488L120-58                         | Diameter:     | 0 mm             |
| Report:    | 09-01-2020                           | Length:       | 1180 mm          |
| Meas.-no.: | 01                                   | Width:        | 70 mm            |
| Lamp type: | LED 830 - 01                         | Height:       | 70 mm            |
| Number:    | 1                                    | Power:        | 22,99 W          |
| Lamp flux: | 3440,00 lm                           | Operator:     | INDEL AGUE GROUP |
| Date:      | 10-01-2020 10:22:33                  | Output ratio: | 86,3 %           |

Polar diagram TTP 70 LINE L1180 TOP 830 SRT/MID LO / Total in 15° C / 5° G



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| <b>Number:</b>    | 90488L120-58                                | <b>Diameter:</b>     | 0 mm             |
| <b>Report:</b>    | 09-01-2020                                  | <b>Length:</b>       | 1180 mm          |
| <b>Meas.-no.:</b> | 01  | <b>Width:</b>        | 70 mm            |
| <b>Lamp type:</b> | LED 830 - 01                                | <b>Height:</b>       | 70 mm            |
| <b>Number:</b>    | 1   | <b>Power:</b>        | 22,99 W          |
| <b>Lamp flux:</b> | 3440,00 lm                                  | <b>Operator:</b>     | INDEL AGUE GROUP |
| <b>Date:</b>      | 10-01-2020 10:22:33                         | <b>Output ratio:</b> | 86,3 %           |

## UGR Unified Glare Ratios

|                                 |            |                  |            |            |            |            |                |            |            |            |            |
|---------------------------------|------------|------------------|------------|------------|------------|------------|----------------|------------|------------|------------|------------|
| <b>Ceiling reflectance</b>      |            | <b>0,7</b>       | <b>0,7</b> | <b>0,5</b> | <b>0,5</b> | <b>0,3</b> | <b>0,7</b>     | <b>0,7</b> | <b>0,5</b> | <b>0,5</b> | <b>0,3</b> |
| <b>Wall reflectance</b>         |            | <b>0,5</b>       | <b>0,3</b> | <b>0,5</b> | <b>0,3</b> | <b>0,3</b> | <b>0,5</b>     | <b>0,3</b> | <b>0,5</b> | <b>0,3</b> | <b>0,3</b> |
| <b>Floor cavity reflectance</b> |            | <b>0,2</b>       | <b>0,2</b> | <b>0,2</b> | <b>0,2</b> | <b>0,2</b> | <b>0,2</b>     | <b>0,2</b> | <b>0,2</b> | <b>0,2</b> | <b>0,2</b> |
| <b>Room dimension</b>           |            | Viewed crosswise |            |            |            |            | Viewed endwise |            |            |            |            |
| <b>2H</b>                       | <b>2H</b>  | 17,2             | 18,7       | 17,7       | 19,2       | 19,7       | 17,1           | 18,6       | 17,6       | 19,1       | 19,6       |
| <b>2H</b>                       | <b>3H</b>  | 19,0             | 20,3       | 19,5       | 20,9       | 21,4       | 18,4           | 19,8       | 19,0       | 20,3       | 20,9       |
| <b>2H</b>                       | <b>4H</b>  | 19,8             | 21,1       | 20,4       | 21,7       | 22,2       | 19,0           | 20,3       | 19,5       | 20,8       | 21,4       |
| <b>2H</b>                       | <b>6H</b>  | 20,7             | 21,9       | 21,2       | 22,4       | 23,0       | 19,3           | 20,5       | 19,9       | 21,1       | 21,7       |
| <b>2H</b>                       | <b>8H</b>  | 21,0             | 22,2       | 21,5       | 22,7       | 23,3       | 19,4           | 20,6       | 19,9       | 21,1       | 21,7       |
| <b>2H</b>                       | <b>12H</b> | 21,3             | 22,5       | 21,9       | 23,0       | 23,6       | 19,4           | 20,6       | 20,0       | 21,1       | 21,7       |
| <b>4H</b>                       | <b>2H</b>  | 17,8             | 19,1       | 18,4       | 19,7       | 20,2       | 17,7           | 19,0       | 18,2       | 19,5       | 20,1       |
| <b>4H</b>                       | <b>3H</b>  | 19,8             | 20,9       | 20,3       | 21,5       | 22,1       | 19,2           | 20,4       | 19,8       | 20,9       | 21,5       |
| <b>4H</b>                       | <b>4H</b>  | 20,8             | 21,9       | 21,4       | 22,4       | 23,1       | 19,9           | 20,9       | 20,5       | 21,5       | 22,2       |
| <b>4H</b>                       | <b>6H</b>  | 21,8             | 22,7       | 22,4       | 23,3       | 24,0       | 20,3           | 21,3       | 20,9       | 21,9       | 22,5       |
| <b>4H</b>                       | <b>8H</b>  | 22,3             | 23,1       | 22,9       | 23,7       | 24,4       | 20,5           | 21,4       | 21,1       | 22,0       | 22,6       |
| <b>4H</b>                       | <b>12H</b> | 22,7             | 23,5       | 23,3       | 24,1       | 24,8       | 20,6           | 21,4       | 21,2       | 22,0       | 22,7       |
| <b>8H</b>                       | <b>4H</b>  | 21,1             | 22,0       | 21,7       | 22,6       | 23,2       | 20,3           | 21,2       | 20,9       | 21,8       | 22,4       |
| <b>8H</b>                       | <b>6H</b>  | 22,3             | 23,0       | 22,9       | 23,6       | 24,3       | 20,9           | 21,6       | 21,5       | 22,3       | 23,0       |
| <b>8H</b>                       | <b>8H</b>  | 22,9             | 23,6       | 23,6       | 24,2       | 24,9       | 21,2           | 21,8       | 21,8       | 22,5       | 23,2       |
| <b>8H</b>                       | <b>12H</b> | 23,5             | 24,1       | 24,2       | 24,7       | 25,4       | 21,4           | 21,9       | 22,0       | 22,6       | 23,3       |
| <b>12H</b>                      | <b>4H</b>  | 21,2             | 22,0       | 21,8       | 22,6       | 23,3       | 20,4           | 21,2       | 21,0       | 21,8       | 22,5       |
| <b>12H</b>                      | <b>6H</b>  | 22,4             | 23,0       | 23,0       | 23,7       | 24,4       | 21,1           | 21,8       | 21,8       | 22,4       | 23,1       |
| <b>12H</b>                      | <b>8H</b>  | 23,1             | 23,6       | 23,7       | 24,3       | 25,0       | 21,4           | 22,0       | 22,1       | 22,6       | 23,3       |

UGR values are corrected for lamp flux of 3440 lm by 4,3

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| <b>Number:</b>    | 1   | <b>Power:</b>        | 22,99 W          |
| <b>Lamp flux:</b> | 3440,00 lm                                  | <b>Operator:</b>     | INDEL AGUE GROUP |
| <b>Date:</b>      | 10-01-2020 10:22:33                         | <b>Output ratio:</b> | 86,3 %           |

Luminance [cd/m<sup>2</sup>] TTP 70 LINE L1180 TOP 830 SRT/MID LO / Total in 15° C / 5° G

| G/C [cd/ | 0,00    | 15,00   | 30,00   | 45,00   | 60,00   | 75,00   | 90,00   | 105,00  | 120,00  |
|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 45,00    | 5369,32 | 5344,87 | 5397,09 | 5565,76 | 5956,92 | 6762,32 | 8298,32 | 6762,32 | 5956,92 |
| 50,00    | 4984,63 | 4954,33 | 4982,57 | 5117,86 | 5462,72 | 6261,70 | 7913,64 | 6261,70 | 5462,72 |
| 55,00    | 4617,30 | 4584,62 | 4586,45 | 4680,57 | 4975,11 | 5730,09 | 7496,93 | 5730,09 | 4975,11 |
| 60,00    | 4271,22 | 4227,39 | 4209,58 | 4261,58 | 4487,81 | 5163,64 | 7010,78 | 5163,64 | 4487,81 |
| 65,00    | 3938,78 | 3890,25 | 3852,08 | 3857,17 | 3996,03 | 4559,34 | 6437,75 | 4559,34 | 3996,03 |
| 70,00    | 3625,37 | 3565,97 | 3511,55 | 3474,06 | 3523,49 | 3905,69 | 5723,46 | 3905,69 | 3523,49 |
| 75,00    | 3331,32 | 3267,91 | 3195,62 | 3108,97 | 3057,64 | 3192,32 | 4821,91 | 3192,32 | 3057,64 |
| 80,00    | 3058,15 | 2991,35 | 2909,06 | 2777,69 | 2629,69 | 2484,13 | 3653,34 | 2484,13 | 2629,69 |
| 85,00    | 2812,96 | 2745,66 | 2649,09 | 2483,35 | 2242,13 | 1831,89 | 2178,80 | 1831,89 | 2242,13 |

| G/C [cd/ | 135,00  | 150,00  | 165,00  | 180,00  | 195,00  | 210,00  | 225,00  | 240,00  | 255,00  |
|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| 45,00    | 5565,76 | 5397,09 | 5344,87 | 5369,32 | 5344,87 | 5397,09 | 5565,76 | 5956,92 | 6762,32 |
| 50,00    | 5117,86 | 4982,57 | 4954,33 | 4984,63 | 4954,33 | 4982,57 | 5117,86 | 5462,72 | 6261,70 |
| 55,00    | 4680,57 | 4586,45 | 4584,62 | 4617,30 | 4584,62 | 4586,45 | 4680,57 | 4975,11 | 5730,09 |
| 60,00    | 4261,58 | 4209,58 | 4227,39 | 4271,22 | 4227,39 | 4209,58 | 4261,58 | 4487,81 | 5163,64 |
| 65,00    | 3857,17 | 3852,08 | 3890,25 | 3938,78 | 3890,25 | 3852,08 | 3857,17 | 3996,03 | 4559,34 |
| 70,00    | 3474,06 | 3511,55 | 3565,97 | 3625,37 | 3565,97 | 3511,55 | 3474,06 | 3523,49 | 3905,69 |
| 75,00    | 3108,97 | 3195,62 | 3267,91 | 3331,32 | 3267,91 | 3195,62 | 3108,97 | 3057,64 | 3192,32 |
| 80,00    | 2777,69 | 2909,06 | 2991,35 | 3058,15 | 2991,35 | 2909,06 | 2777,69 | 2629,69 | 2484,13 |
| 85,00    | 2483,35 | 2649,09 | 2745,66 | 2812,96 | 2745,66 | 2649,09 | 2483,35 | 2242,13 | 1831,89 |

| G/C [cd/ | 270,00  | 285,00  | 300,00  | 315,00  | 330,00  | 345,00  |
|----------|---------|---------|---------|---------|---------|---------|
| 45,00    | 8298,32 | 6762,32 | 5956,92 | 5565,76 | 5397,09 | 5344,87 |
| 50,00    | 7913,64 | 6261,70 | 5462,72 | 5117,86 | 4982,57 | 4954,33 |
| 55,00    | 7496,93 | 5730,09 | 4975,11 | 4680,57 | 4586,45 | 4584,62 |
| 60,00    | 7010,78 | 5163,64 | 4487,81 | 4261,58 | 4209,58 | 4227,39 |
| 65,00    | 6437,75 | 4559,34 | 3996,03 | 3857,17 | 3852,08 | 3890,25 |
| 70,00    | 5723,46 | 3905,69 | 3523,49 | 3474,06 | 3511,55 | 3565,97 |
| 75,00    | 4821,91 | 3192,32 | 3057,64 | 3108,97 | 3195,62 | 3267,91 |
| 80,00    | 3653,34 | 2484,13 | 2629,69 | 2777,69 | 2909,06 | 2991,35 |
| 85,00    | 2178,80 | 1831,89 | 2242,13 | 2483,35 | 2649,09 | 2745,66 |

## HEADQUARTERS

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