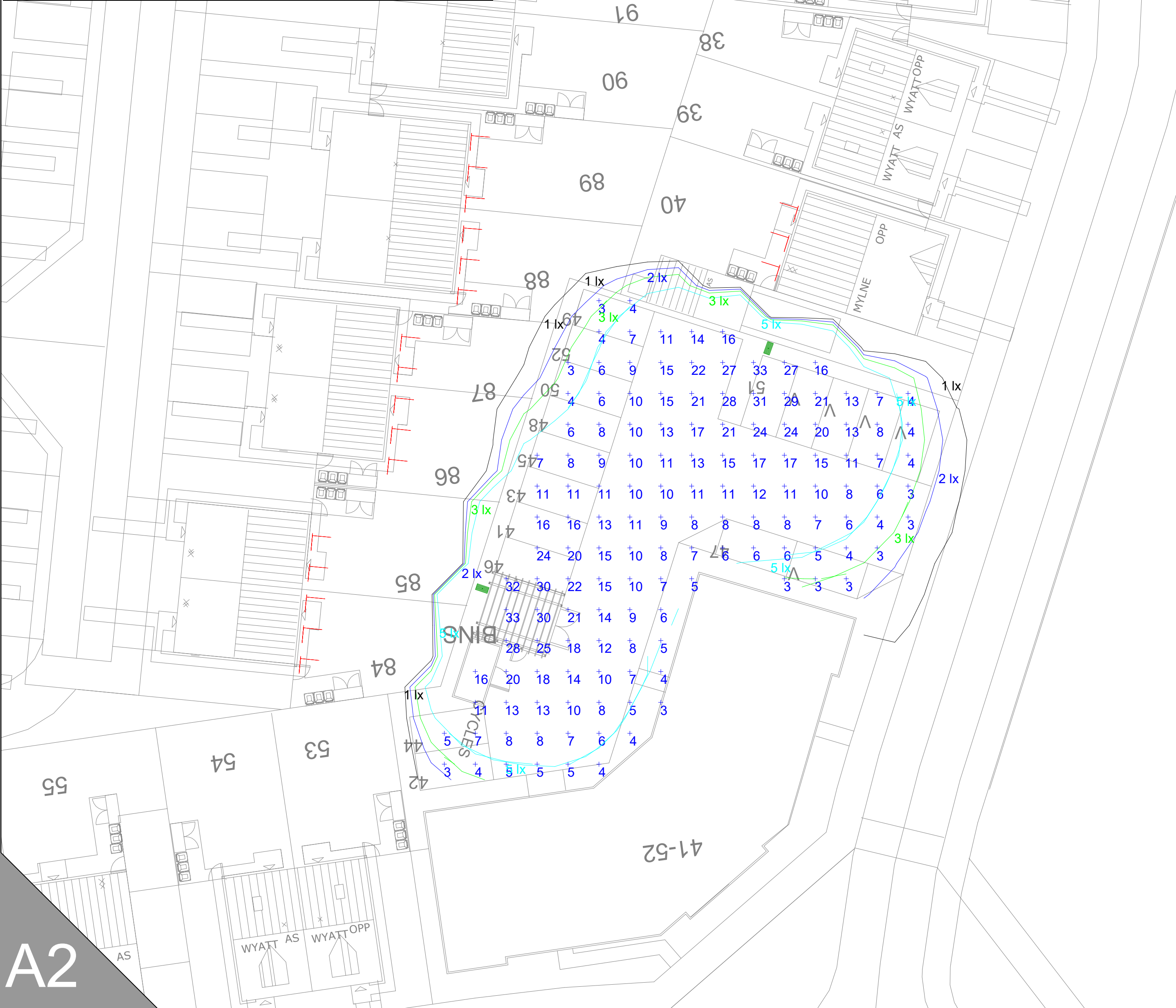
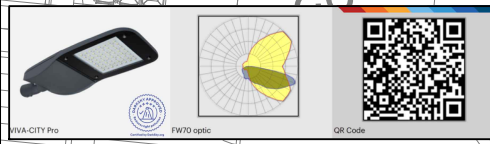


Dimensions are not to be scaled from this drawing

| Luminaire Schedule        |                 | Qty   | Label | Arrangement | Description                                                      | LLF                  | Luminaire Lumens    | Luminaire Watts | UWLR |
|---------------------------|-----------------|-------|-------|-------------|------------------------------------------------------------------|----------------------|---------------------|-----------------|------|
| Symbol                    |                 |       |       |             |                                                                  |                      |                     |                 |      |
|                           |                 | 2     | EX1   | Single      | 40W LED 4000K VIVA-CITY Pro 1050mA with FW70 forward throw optic | 0.900                | 5541                | 40              | 0.40 |
| Calculation Summary       |                 |       |       |             |                                                                  |                      |                     |                 |      |
| Label                     | CalcType        | Units | Avg   | Max         | Min                                                              | Uniformity (Min/Avg) | Diversity (Min/Max) |                 |      |
| Car Park                  | Luminance       | Lux   | 11.89 | 33          | 3                                                                | 0.26                 | 0.09                |                 |      |
| ObtrusiveLight_1_Cd_Seg1  | Obtrusive - Cd  | N.A.  | 35.67 | 103         | 3                                                                | 0.03                 | 0.03                |                 |      |
| ObtrusiveLight_1_III_Seg1 | Obtrusive - III | Lux   | 0.00  | 0           | 0                                                                | N.A.                 | N.A.                |                 |      |
| ObtrusiveLight_Cd_Seg1    | Obtrusive - Cd  | N.A.  | 18.11 | 84          | 0                                                                | 0.00                 | 0.00                |                 |      |
| ObtrusiveLight_Cd_Seg2    | Obtrusive - Cd  | N.A.  | 33.33 | 86          | 1                                                                | 0.03                 | 0.01                |                 |      |
| ObtrusiveLight_Cd_Seg3    | Obtrusive - Cd  | N.A.  | 60.56 | 268         | 1                                                                | 0.02                 | 0.00                |                 |      |
| ObtrusiveLight_Cd_Seg5    | Obtrusive - Cd  | N.A.  | 0.00  | 0           | 0                                                                | N.A.                 | N.A.                |                 |      |
| ObtrusiveLight_III_Seg1   | Obtrusive - III | Lux   | 0.00  | 0           | 0                                                                | N.A.                 | N.A.                |                 |      |
| ObtrusiveLight_III_Seg2   | Obtrusive - III | Lux   | 0.00  | 0           | 0                                                                | N.A.                 | N.A.                |                 |      |
| ObtrusiveLight_III_Seg3   | Obtrusive - III | Lux   | 0.00  | 0           | 0                                                                | N.A.                 | N.A.                |                 |      |
| ObtrusiveLight_III_Seg4   | Obtrusive - III | Lux   | 0.00  | 0           | 0                                                                | N.A.                 | N.A.                |                 |      |
| ObtrusiveLight_III_Seg5   | Obtrusive - III | Lux   | 0.00  | 0           | 0                                                                | N.A.                 | N.A.                |                 |      |



A2



# Kingfisher Lighting

Part of the Luceco PLC group of companies **LUCECO**

Project Number 54480Project Title - Lickers Lane, HalsneadDate 13/12/2024Kingfisher Lighting

## BREEAM®

BREEAM New Construction 2018 (UK)

### PO1-04 - External Lighting

Assessment Criteria

To ensure that external lighting is concentrated in the appropriate areas and that upward lighting is minimised, thereby reducing unnecessary light pollution, energy consumption and nuisance to neighbouring properties.

Number of Credits Available: 1

Minimum Standards: No

Table 1: The effect on the ability to see the night sky

| Angle of Light (Degrees) | Any Glare Effect | Any Glare Effect |
|--------------------------|------------------|------------------|
| 100-180                  | Good             | Good             |
| 90-100                   | Good             | Good             |
| 60-90                    | Good             | Good             |
| 30-60                    | Good             | Good             |
| 0-30                     | Good             | Good             |

Table 2: Environmental zones

| Zone | Surrounding | Lighting (lumens/m²) | Examples                                                         |
|------|-------------|----------------------|------------------------------------------------------------------|
| 00   | Protected   | Dark                 | International Dark Sky Reserve, UNESCO World Heritage Site, etc. |
| 01   | Natural     | Dark                 | Natural, unmodified natural areas, National Parks, etc.          |
| 02   | Rural       | Dark                 | Open countryside, etc.                                           |
| 03   | Suburban    | Dark                 | Open countryside, etc.                                           |
| 04   | Urban       | Dark                 | Open countryside, etc.                                           |

Table 3: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 4: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 5: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 6: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 7: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 8: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 9: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 10: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 11: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 12: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 13: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 14: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 15: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 16: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 17: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 18: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 19: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 20: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 21: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 22: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 23: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 24: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 25: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 26: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 27: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 28: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 29: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 30: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 31: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 32: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 33: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 34: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 35: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 36: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 37: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 38: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 39: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 40: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 41: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 42: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 43: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 44: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 45: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 46: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 47: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 48: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 49: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 50: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 51: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 52: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 53: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 54: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 55: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 56: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 57: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 58: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 59: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 60: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 61: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 62: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 63: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 64: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 65: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 66: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 67: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 68: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 69: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 70: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 71: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |

Table 72: Maximum values of upward light ratio (ULR) of luminaires

| Upward light ratio (ULR) (%) | 00 | 01 | 02 | 03 | 04 |
|------------------------------|----|----|----|----|----|
| 00                           | 0  | 0  | 0  | 0  | 0  |