# **SLR-44-13**

# Table 5

# **~~Luminous intensity requirements for driving-beam~~**

**Type approval photometric requirements for driving-beam**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Element* | *Angular coordinates in deg.* | | *Minimum luminous intensity in cd* | | | | | |
| *vertical* | *horizontal* | *Class A* | *Class B* | *Class RA (Auxiliary)* | *Class BS* | *Class CS (Secondary)* | *Class DS (Secondary)* |
| H-12L | 0° | 12°L | 6.00∙102 | 1.50∙103 | - | - | - | - |
| H-9L | 0° | 9°L | 2.00∙103 | 3.40∙103 | - | - | - | - |
| H-6L | 0° | 6°L | 3.40∙103 | 5.00∙103 | - | 2.50∙103 | 3.40∙103 | 5.00∙103 |
| H-3L | 0° | 3°L | 1.20∙104 | 1.75∙104 | - | 9.0∙103 | 1.20∙104 | 1.75∙104 |
| H-V a | 0° | 0° | 0.8×Imax | 0.8×Imax | 0.8×Imax | 1.60∙104 | 2.00∙104 | 3.00∙104 |
| H-3R | 0° | 3°R | 1.20∙104 | 1.75∙104 | - | 9.00∙103 | 1.20∙104 | 1.70∙104 |
| H-6R | 0° | 6°R | 3.40∙103 | 5.00∙103 | - | 2.50∙103 | 3.40∙103 | 5.00∙103 |
| H-9R | 0° | 9°R | 2.00∙103 | 3.40∙103 | - | - | - | - |
| H-12R | 0° | 12°R | 6.00∙102 | 1.50∙103 | - | - | - | - |
| 2U-V | 2° | 0° | 1.00∙103 | 1.70∙103 | - | - | 1.00∙103 | 1.70∙103 |
| Imax | - | - | 2.70∙104 | 4.00∙104 | 1.00∙104 | 2.00∙104 | 2.70∙104 | 4.00∙104 |

# Table 6

# **~~Luminous intensities of passing-beam (all intensities expressed in cd)~~**

**Type approval photometric requirements for Class C and Class V passing-beam**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Part A | *Element* | *Angular coordinates in deg.* | | *Luminous intensity in cd* | | | |
| *Class C* | | *Class V* | |
| *vertical* | *horizontal* | *min* | *max* | *min* | *max* |
| B50L | 0.57°U | 3.43°L |  | 3.50∙102 |  | 3.50∙102 |
| BR | 1.00°U | 2.50°R |  | 1.75∙103 |  | 1.75∙103 |
| Segment BLL | 0.57°U | 8°L to 20°L |  | 6.25∙102 | - | 6.25∙102 |
| P | 0° | 7°L | 6.3∙101 | - | 6.3∙101 | - |
| Zone III | As specified in part C | | - | 6.25∙102 | - | 6.25∙102 |
| S50+S50LL+S50RRb | As specified in part B | | 1.90∙102 c) | - | - | - |
| S100+S100LL+S100RRb | As specified in part B | | 3.75∙102 c) | - | - | - |
| 50 R | 0.86°D | 1.72°R | 1.01∙102 | - | 5.10∙103 | - |
| 75 R | 0.57°D | 1.15°R | 1.21∙104 | - | - | - |
| 50 V | 0.86°D | 0° | 5.10∙103 a | - | 5.10∙103 | - |
| 50 L | 0.86°D | 3.43°L | 5.00∙103 a | 3.70∙104 | 3.55∙103 a | 3.70∙104 |
| Segment 20 and below | 2.00°D | 3.50°L to 0° | - | - | - | - |
| Segment 50 | 0.86°D, | 6.84°L to 6.84°R | 2.54∙103 | - | 1.80∙103 | - |
| 40R | 1.07°D | 9°R | 2.80∙103 | - | 1.95∙103 | - |
| 40L | 1.07°D | 9°L | 2.80∙103 | - | 1.95∙103 | - |
| Segment 40RR | 1.07°D | 14°R to 9°R | 8.50∙102 | - | 6.00∙102 | - |
| Segment 40LL | 1.07°D | 14°L to 9°L | 8.50∙102 | - | 6.00∙102 | - |
| Segment 25R | 1.72°D | 9°R to 16°R | 1.18∙103 | - | 8.25∙102 | - |
| Segment 25 | 1.72°D | 9°L to 9°R | 1.70∙103 | - | 1.20∙103 | - |
| 25V | 1.72°D | 0° | 2.50∙103 | - | 1.75∙103 | - |
| Segment 25L | 1.72°D | 16°L to 9°L | 1.18∙103 | - | 8.25∙102 | - |
| Segment 15 | 2.86°D | 20°L to 20°R | 4.25∙102 | - | 3.00∙102 | - |
| Segment 10 and below | 4.00°D | 4.50°L to 2.00°R |  | 0,8xthe actual  measured valued  at 50R |  | 0,8xthe actual  measured valued  at 50R |
| Segment 10 | 4.00°D | 4.50°L to 2.00°R | 5.00∙102 |  | 3.50∙102 |  |
| Imax | - | - |  |  |  | 4.41∙104 |

# Table 7

# **~~Passing-beam photometric requirements in conjunction with Figure A4-VI~~**

# **Type approval photometric requirements for C, V, E and W Classes passing-beam in conjunction with Figure A4-VI**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Part A | *Element* | *Angular coordinates in deg.* | | *Luminous intensity in cd* | | | | | | | |
| *vertical* | *horizontal* | *Class C* | | *Class V* | | *Class E* | | *Class W*b | |
| *min* | *max* | *min* | *max* | *min* | *max* | *min* | *max* |
| B50L | 0.57°U | 3.43°L | - | 3.50∙102 | -- | 3.50∙102 | - | 6.25∙102 f | - | 6.25∙102 |
| BR | 1.00°U | 2.50°R | - | 1.75∙103 |  | 1.75∙103 | - | 1.75∙103 | - | 2.65∙103 |
| Segment BLL | 0.57°U | 20°L to 8°L | - | 6.25∙102 | - | 6.25∙102 | - | 8.80∙102 | - | 8.80∙102 |
| P | 0.57°U | 7.00°L | 6.3∙101 | - | 6.3∙101 | - | - | - | - | - |
| Zone III | As specified in Table 9 | | - | 6.25∙102 | - | 6.25∙102 | - | 8.80∙102 | - | 8.80∙102 |
| S50+S50LL+S50RRd | 4.00°U | - | 1.90∙102 e | - | - | - | 1.90∙102 e | - | 1.90∙102 e | - |
| S100+S100LL+S100RRd | 2.00°U | - | 3.75∙103 e | - | - | - | 3.75∙102 e | - | 3.75∙102 e | - |
| 125R | 0.34°D | 1.15°R | - | - | - | - | 1.20∙104 | - | - | - |
| 50R | 0.86°D | 1.72°R | 1.01∙104 | - | 5.10∙103 | - | - | - | - |  |
| 75R | 0.57°D | 1.15°R | 1.21∙104 | - | - | - | 1.52∙104 | - | 1.52∙104 | - |
| 50V | 0.86°D | 0° | 5.10∙103 g | - | 5.10∙103 | - | 1.01∙104 a | - | 1.01∙104 a | - |
| 50L | 0.86°D | 3.43°L | 5.00∙103 g | 3.70∙104 | 3.55∙103 g | 3.70∙104 | 6.80∙103 g | - | 6.80∙103 g | 3.70∙104 |
| Segment 20 and below | 2.00°D | 3.50°L to 0° | - | - | - | - | - | - | - | 1.76∙104 b |
| Segment 50 | 0.86°D | 6.84°L to 6.84°R | 2.54∙103 | - | 1.80∙103 | - | 2.54∙103 | - | 2.54∙103 | - |
| 40R | 1.07°D | 9°R | 2.80∙103 | - | 1.95∙103 | - | 2.80∙103 | - | 2.80∙103 | - |
| 40L | 1.07°D | 14°L | 2.80∙103 | - | 1.95∙103 | - | 2.80∙103 | - | 2.80∙103 | - |
| Segment 40RR | 1.07°D | 9°R to 14°R | 8.50∙102 | - | 6.00∙102 | - | 8.50∙102 | - | 8.50∙102 | - |
| Segment 40LL | 1.07°D | 14°L to 9°L | 8.50∙102 | - | 6.00∙102 | - | 8.50∙102 | - | 8.50∙102 | - |
| Segment 25R | 1.72°D | 9°R to 16°R | 1.18∙103 | - | 8.25∙102 | - | 1.18∙103 | - | 1.18∙103 | - |
| Segment 25 | 1.72°D | 9°L to 9°R | 1.70∙103 | - | 1.20∙103 | - | 1.70∙103 | - | - | - |
| 25V | 1.72°D | 0° | 2.50∙103 | - | 1.75∙103 | - | 2.50∙103 | - | - | - |
| Segment 25L | 1.72°D | 16°L to 9°L | 1.18∙103 | - | 8.25∙102 | - | 1.18∙103 | - | 1.18∙103 | - |
| Segment 15 | 2.86°D | 20°L to 20°R | 4.25∙102 | - | 3.00∙102 | - | 4.25∙102 | - | - | - |
| Segment 10 and below | 4.00°D | 4.5°L to 2°R |  | 0.8xthe actual measured value at 50R | - | 0.8xthe actual measured value at 50R | - | 0.8xthe actual measured value at  50R | - | 7.10∙103 |
| Segment 10 | 4.00°D | 4.5°L to 2°R | 5.00∙102 | - | 3.50∙102 | - | 5.00∙102 | - | - | - |
| Imax3 | - | - |  | - | - | 4.41∙104 | - | - | - | - |

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Part B* | *Element* | *Angular coordinates in deg.* | | *Luminous intensity in cd* | | | | | | | |
| *vertical* | *horizontal* | *Class C* | | *Class V* | | *Class E* | | *Class W*2 | |
| *min* | *max* | *min* | *max* | *min* | *max* | *min* | *max* |
| B50L | 0.57°U | 3.43°L | - | 5.30∙102 | - | 5.30∙102 | - | - | - | 7.90∙102 |
| Zone III | As specified in Table 9 | | - | 880 | - | 8.80∙102 | - | 8.80∙102 | - | 8.80∙102 |
| 50L | 0.86°D | 3.43°L | 1.70∙103 | - | 1.70∙103 | - | 3.40∙103 | - | 3.40∙103 | - |

# Table 8

# **Passing-beam elements angular position/extend, additional requirements**

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Beam part designation and requirement* | *“Reference” Class C passing-beam (neutral state)*  *Angular coordinates in deg.* | |
| *vertical* | *horizontal* |
| A | Angular position / extend in degrees for segment Imax  The maximum luminous intensity in "Segment Imax" as indicated in this Table shall be within the limits as prescribed in “Imax” in Table 7. | 0.3°D  to  1.72°D | 0.5°L  to  3°R |
| B | The "cut-off" and part(s) of shall:  (a) comply with the requirements of paragraph 1. of Annex 5 and | | |
|  | (b) be positioned with its "flat horizontal part" | at V = 0.57°D | - |

# Table 10

# **Additional provisions for Class W passing-beam**

|  |  |  |  |
| --- | --- | --- | --- |
| *Segment Designation* | *Angular coordinates in deg.* | | *Max. intensity in cd* |
| *vertical* | *horizontal* |
| E | 10°U | 20°L to 20°R | 1.75∙102 |
| F1 | 10°U to 60°U | 10°L |
| F2 | 0° |
| F3 | 10°R |

# Table 12

# **Additional provisions for Class E passing-beam**

Part A of Table7 applies, however the requirement for point B50L is replaced as indicated hereunder:

|  |  |  |  |
| --- | --- | --- | --- |
| *Tabled requirements expressed in cd* | *Angular coordinates in deg.* | | *Passing Beam* |
| *vertical* | *horizontal* | *Class E* |
| *Data Set Element* | *max* |
| E1 | 0.57°U | 3.43°L | 5.30∙102 |
| E2 | 4.40∙102 |
| E3 | 3.50∙102 |

# Table 13

# **Requirements concerning the adaptation of the driving-beam**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Part A* | *Element* | *Angular coordinates in deg.* | | *Max. intensity b*  *in cd* |
| *vertical* | *horizontal* |
| Line 1 Left  Oncoming vehicle at 50 m in the case of right-hand traffic | 0.57°U | 4.8°L to 2°L | 6.25∙102 |
| Line 1 Right  Oncoming vehicle at 50 m in the case of left-hand traffic | 0.57°U | 2°R to 4.8°R | 6.25∙102 |
| Line 2 Left  Oncoming vehicle at 100 m in the case of right-hand traffic | 0.3°U | 2.4°L to 1°L | 1.75∙103 |
| Line 2 Right  Oncoming vehicle at 100 m in the case of left-hand traffic | 0.3°U | 1°R to 2.4°R | 1.75∙103 |
| Line 3 Left  Oncoming vehicle at 200 m in the case of right-hand traffic | 0.15°U | 1.2°L to 0.5°L | 5.45∙103 |
| Line 3 Right  Oncoming vehicle at 200 m in the case of left-hand traffic | 0.15°U | 0.5°R to 1.2°R | 5.45∙103 |
| Line 4  Preceding vehicle at 50 m in the case of right-hand traffic | 0.3°U | 1.7°L to1.0°R | 1.85∙103 |
| >1.0°R to 1.7°R | 2.50∙103 |
| Line 4  Preceding vehicle at 50 m in the case of left-hand traffic | 1.7°R to1.0°L | 1.85∙103 |
| >1.0°L to 1.7°L | 2.50∙103 |
| Line 5  Preceding vehicle at 100 m in the case of right-hand traffic | 0.15°U | 0.9°L to 0.5°R | 5.30∙103 |
| >0.5°R to 0.9°R | 7.00∙103 |
| Line 5  Preceding vehicle at 100 m in the case of left-hand traffic | 0.9°R to 0.5°L | 5.30∙103 |
| >0.5°L to 0.9°L | 7.00∙103 |
| Line 6  Preceding vehicle at 200 m in the case of left-hand traffic and right-hand traffic | 0.1°U | 0.45°L to 0.45°R | 1.60∙104 |

| *Part B* | *Element* | *Angular coordinates in deg.* | | *Min. Intensity b*  *in cd* |
| --- | --- | --- | --- | --- |
| *vertical* | *horizontal* |
| 50R | 0.86°D | 1.72°R | 5.10∙103 |
| 50V | 0.86°D | 0° | 5.10∙103 |
| 50L | 0.86°D | 3.43°L | 2.55∙103 |
| 25LL | 1.72°D | 16°L | 1.18∙103 |
| 25RR | 1.72°D | 11°R | 1.18∙103 |

# Table 14

# **~~Passing-beam Class AS~~**

**Type approval photometric requirements for Class AS passing-beam**

|  |  |  |  |
| --- | --- | --- | --- |
| *Element* | *Angular coordinates in deg. a* | | *Luminous intensity in cd* |
| *vertical* | *horizontal* |
| Any point in Zone 1 | 0° to 15°U | 5°L to 5°R | ≤ 3.20∙102 |
| Any point on line 25L to 25R b | 1.72°D | 5°L to 5°R | ≥ 1.10∙103 |
| Any point on line 12.5L to 12.5R | 3.43°D | 5°L to 5°R | ≥ 5.50∙102 |

# Table 15

# **~~Passing-beam Class BS~~**

**Type approval photometric requirements for Class BS passing-beam**

|  |  |  |  |
| --- | --- | --- | --- |
| *Element* | *Angular coordinates in deg. a* | | *Luminous intensity in cd* |
| *vertical* | *horizontal* |
| Any point in Zone 1 | 0°to 15°U | 5°L to 5°R | ≤ 7.00∙102 |
| Any point on line 50L to 50R except 50V | 0.86°D | 2.5°L to 2.5°R | ≥ 1.10∙103 |
| Point 50V b | 0.86°D | 0° | ≥ 2.20∙103 |
| Any point on line 25L to 25R | 1.72°D | 5°L to 5°R | ≥ 2.20∙103 |
| Any point in Zone 2 | 0.86°D to 1.72°D | 5°L to 5°R | ≥ 1.10∙103 |

# Table 16

# **~~Passing-beam Classes CS and DS~~**

**Type approval photometric requirements for Class CS and Class DS passing-beam**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Element* | *Angular coordinates in deg.* a | | *Luminous intensity in cd* | | |
|
| *vertical* | *horizontal* | *Minimum* | | *Maximum* |
| *Class CS* | *Class DS* | *Classes CS, DS* |
| P1 | 0.86°D | 3.5°R |  |  | 1.38∙104 |
| P2 c | 0.86°D | 0° | 2.45∙103 | 4.90∙103 | - |
| P3 | 0.86°D | 3.5°L |  |  | 1.38∙104 |
| Segment 123 | 0.86°D | 3.5°R to 3.5°L | 2.00∙103 | 2.00∙103 | - |
| Segment 4RR | 1.07°D | 9°R to 3.5°R | 4.25∙102 | 8.50∙102 | - |
| Segment 4LL | 1.07°D | 9°R to 3.5°R | 4.25∙102 | 8.50∙102 | - |
| Segment 5 | 2.00°D | 15°L to 15°R | 5.50∙102 | 1.10∙103 | -- |
| Segment 6 | 4.00°D | 20°L to 20°R | 1.50∙102 | 3.00∙102 | 0.8 x the actual measured value at point 2 |
| P7 | 0 | 0 | -- | -- | 1,700 |
| P8\*\* | 4.00°U | 8.0°L | ∑ 8 + 9 + 10 ≧ 1.50∙102 b | | 7.00∙102 |
| P9a | 4.00°U | 0° | 7.00∙102 |
| P10a | 4.00°U | 8.0°R | 7.00∙102 |
| P11a | 2.00°U | 4.0°L | ∑ 11 + 12 + 13 ≧ 3.00∙102 b | | 9.00∙102 |
| P12b | 2.00°U | 0° | 9.00∙102 |
| P13b | 2.00°U | 4.0°R | 9.00∙102 |
| P14b | 0 | 8.0°L and 8.0°R | 5.0∙101 b | 5.0∙101 b | - |
| P15b | 0 | 4.0°L and 4.0°R | 1.00∙102 b | 1.00∙102 b | 9.00∙102 |
| Zone 1 | 1°U/8°L-4°U/8°L-4°U/8°R-1°U/8°R-0°/4°R-0°/1°R-0.6°U/0°-0°/1°L-0°/4°L-1°U/8°L | | -- | -- | 9.00∙102 |
| Zone 2 | >4°U to <15°U | 8°L to 8°R | -- | -- | 7.00∙102 |

# Table 17

# **Type approval photometric requirements for front fog lamp**

| *Element* | *Angular coordinates in deg.* | | *Luminous intensity*  *in cd* | *To comply* |
| --- | --- | --- | --- | --- |
| *vertical* | *horizontal* |
| Point 1, 2 | 45°L, R | 60°U | 8.5∙101 max. | All points |
| Point 3, 4 | 30°L, R | 40°U |
| Point 5, 6 | 60°L, R | 30°U |
| Point 7, 10 | 40°L, R | 20°U |
| Point 8, 9 | 15°L, R | 20°U |
| Line 1 | 26°L to 26°R | 8°U | 1.30∙102 max. | All line |
| Line 2 | 26°L to 26°R | 4°U | 1.50∙102 max. | All line |
| Line 3 | 26°L to 26°R | 2°U | 2.45∙102 max. | All line |
| Line 4 | 26°L to 26°R | 1°U | 3.60∙102 max. | All line |
| Line 5 | 10°L to 10°R | 0° | 4.85∙102 max. | All line |
| Line 6 a | from 5° inwards  to 10° outward | 2.5°D | 2.70∙103 min. | All line |
| Line 7 a | from 5° inwards  to 10° outward | 6.0°D | < 50 per cent of max. on line 6 | All line |
| Line 8L and R | 22°L and 22°R | 1.5°D to 3.5°D | 1.10∙103 min. | One or more points |
| Line 9L and R | 35°L and 35°R | 1.5°D to 4.5°D | 4.50∙102 min | One or more points |
| Zone D | 10°L to 10°R | 1.5°D to 3.5°D | 1.20∙104 max. | Whole zone |

~~Table 18: Intensity of light emitted (left side lamp)~~

# Table 18

**Type approval photometric requirements for cornering lamp (left side lamp)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *Element* | *Angular coordinates in deg.* | | *Luminous intensity in cd* | |
| *Vertical* | *Horizontal* | *Minimum* | *Maximum* |
| P1 | 2.5°D | 30°L | 3.75∙102 | - |
| P2 | 2.5°D | 45°L | 6.25∙102 | - |
| P3 | 2.5°D | 60°L | 3.75∙102 | - |
| Zone 1 | Above 1.0°U | 90°L to 90°R | - | 3.00∙102 |
| Zone 2 | 0° to 1.0°U | 90°L to 90°R | - | 6.00∙102 |
| Zone 3 | Below 0° | 90°L to 90°R | - | 1.40∙104 |

# Table 19

**Conformity of production, photometric requirements for front fog lamp**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *Element* | *Angular coordinates in deg.* | | *Luminous intensity in cd* | | *To comply* |
| *Equivalent 20 per cent* | *Equivalent 30 per cent* |
| Point 1, 2 | 45°L, R | 60°U | 1.15∙102 max. | 1.30∙102 max. | All points |
| Point 3, 4 | 30°L, R | 40°U |
| Point 5, 6 | 60°L, R | 30°U |
| Point 7, 10 | 40°L, R | 20°U |
| Point 8, 9 | 15°L, R | 20°U |
| Line 1 | 26°L to 26°R | 8°U | 1.60∙102 max. | 1.70∙102 max. | All line |
| Line 2 | 26°L to 26°R | 4°U | 1.80∙102 max. | 1.95∙102 max. | All line |
| Line 3 | 26°L to 26°R | 2°U | 2.95∙102 max. | 3.20∙102 max. | All line |
| Line 4 | 26°L to 26°R | 1°U | 4.35∙102 max. | 4.70∙102 max. | All line |
| Line 5 | 10°L to 10°R | 0° | 5.85∙102 max. | 6.30∙102 max. | All line |
| Line 6 a | from 5° inwards  to 10° outward | 2.5°D | 2.16∙103 min. | 1.89∙103 min. | All line |
| Line 8L and R | 22°L and 22°R | 1.5°D to 3.5°D | 8.80∙102 min. | 7.70∙102 min. | One or more points |
| Line 9L and R | 35°L and 35°R | 1.5°D to 4.5°D | 3.60∙102 min. | 3.15∙102 min. | One or more points |
| Zone D | 10°L to 10°R | 1.5°D to 3.5°D | 1.44∙104 max. | 1.56∙104 max. | Whole zone |