# STOANE LIGHTING

### EQUIPMENT DESIGN + MANUFACTURE

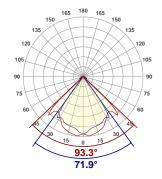
Fitting name:

MSL\_Indehandrail Module\_Oslon MSL Star\_95CRI\_3000K\_181Im\_without crop

Date: 23/11/2017

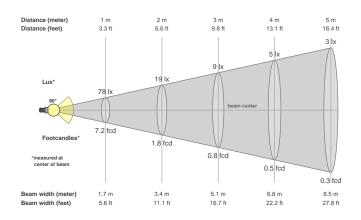
**Delivered Output: 115 Lumen** 

LOR: 64% \*





## Beam details



#### Beam angles

Beam angle 50%	Field angle 10%	Cutoff angle 2,5%				
80.5°	87.2°	133.8°				

#### Beam intensities

Peak intensity	Int. ratio in 120° cone	Int. ratio in 90° cone				
80.8 cd	93.4%	88.2%				

## Beam intensities from 1-20m

	Dodni intononico ironi i zoni																		
1m	2m	3m	4m	5m	6m	7m	8m	9m	10m	11m	12m	13m	14m	15m	16m	17m	18m	19m	20m
3.3ft	6.6ft	9.8ft	13.1ft	16.4ft	19.7ft	23ft	26.2ft	29.5ft	32.8ft	36.1ft	39.4ft	42.7ft	45.9ft	49.2ft	52.5ft	55.8ft	59.1ft	62.3ft	65.6ft
78lx	19lx	9lx	5lx	3lx	2lx	2lx	1lx	1lx	1lx	1lx	1lx	0lx							
7.2fcd	1.8fcd	0.8fcd	0.5fcd	0.3fcd	0.2fcd	0.1fcd	0.1fcd	0.1fcd	0.1fcd	0.1fcd	0.1fcd	0fcd							

Files are generated using the highest CRI and highest output 3000K light source available in the luminaire, other lower outputs and colour temperatures are of course available. Other outputs and colour temperatures are available on request, these may take some time as they must be tested.

\* These files are absolute measurements, not relative, as such the LOR is not generated when testing a fitting. To get an idea of LOR we use the measured delivered output in the files and documentation and calculate a ratio using the light source output mentioned in the file and product names. Note that the source output files will be nominal figures provided to us by the light source manufacturers and assuming a max 35°C ambient temperature so this LOR is as stated an indication only.

The power figures in the files have been generated based on the voltage and current to the light source only, not allowing for any driver losses. This is because our fittings are used with a number of different drivers (sometimes integral) and loaded differently, these variations effect the driver power factor and efficiency which in turn skews the power consumption figure.

Files are not always available for the specific combination of beam, accessory, driver selected, so these can be specifically requested. As with requests for specific colour temperatures this can take some time to generate as these combinations must be made then scheduled in to testing. MSL will advise on how long requests for specific data are likely to take.

MSL advise that lighting designers apply a +/- 5% tolerance allowance on the files we provide as subtle variations in system components (eg slight variations in output of LED light sources through a bin) and ambient temperature variations can effect output and distribution slightly.

# **Glare Evaluation According to UGR**

p Ceiling p Walls         70         70         50         50         30         70         70         50         50         30         30         30         30         50         30 <th colspan="13"></th>														
Prilog	p Ceiling		70	70	50	50	30	70	70	50	50	30		
Noom size   X   Y   Viewing direction at right angles to lamp axis   Viewing direction parallel to lamp axis   Viewing direction   Viewi	p Walls		50	30	50	30	30	50	30	50	30	30		
Name	p Floor		20	20	20	20	20	20	20	20	20	20		
2H	Room	size	Viev	-		-	es to	Viewing direction parallel to lamp axis						
Standard table   Stan	X	Υ		l	amp axis	3								
Harmonian	2H	2H	25.5	26.2	25.8	26.5	26.7	21.7	22.5	22.0	22.7	23.0		
6H       25.6       26.3       26.0       26.6       26.9       21.7       22.3       22.1       22.6       23.0         8H       25.7       26.2       26.0       26.6       26.9       21.8       22.3       22.1       22.7       23.0         12H       25.7       26.2       26.1       26.6       26.9       21.9       22.4       22.3       22.0       22.6       22.9         4H       2H       25.3       26.0       25.7       26.3       26.6       21.6       22.3       22.0       22.6       22.9         4H       25.6       26.0       26.0       26.4       26.8       21.7       22.2       22.1       22.6       22.9         4H       25.6       26.0       26.0       26.4       26.8       21.7       22.2       22.1       22.6       23.0         6H       25.6       26.0       26.1       26.4       26.9       21.8       22.2       22.3       22.6       23.1         8H       4H       25.5       25.8       25.9       26.3       26.7       21.7       22.1       22.5       22.6       22.9       23.4         8H       4H       25.5 </td <td></td> <td>3H</td> <td>25.6</td> <td>26.3</td> <td>26.0</td> <td>26.6</td> <td>26.9</td> <td>21.7</td> <td>22.4</td> <td>22.0</td> <td>22.7</td> <td>23.0</td>		3H	25.6	26.3	26.0	26.6	26.9	21.7	22.4	22.0	22.7	23.0		
SH		25.6	26.3	26.0	26.6	26.9	21.7	22.3	22.0	22.6	23.0			
12H		6H	25.6	26.3	26.0	26.6	26.9	21.7	22.3	22.1	22.6	23.0		
4H       2H       25.3       26.0       25.7       26.3       26.6       21.6       22.3       22.0       22.6       22.9         3H       25.5       26.1       25.9       26.4       26.8       21.7       22.2       22.1       22.6       22.9         4H       25.6       26.0       26.0       26.4       26.8       21.7       22.2       22.1       22.6       23.0         6H       25.6       26.0       26.1       26.4       26.9       21.8       22.2       22.3       22.6       23.1         8H       25.6       26.0       26.1       26.4       26.9       21.9       22.3       22.4       22.7       23.2         12H       25.7       26.0       26.2       26.5       27.0       22.1       22.5       22.6       22.9       23.4         8H       4H       25.5       25.8       25.9       26.3       26.7       21.7       22.1       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         28       25.9       26.3       26.5       27.0		8H	25.7	26.2	26.0	26.6	26.9	21.8	22.3	22.1	22.7	23.0		
3H   25.5   26.1   25.9   26.4   26.8   21.7   22.2   22.1   22.6   22.9     4H   25.6   26.0   26.0   26.4   26.8   21.7   22.2   22.1   22.6   23.0     6H   25.6   26.0   26.1   26.4   26.9   21.8   22.2   22.3   22.6   23.1     8H   25.6   26.0   26.1   26.4   26.9   21.9   22.3   22.4   22.7   23.2     12H   25.7   26.0   26.2   26.5   27.0   22.1   22.5   22.6   22.9   23.4     8H   4H   25.5   25.8   25.9   26.3   26.7   21.7   22.1   22.2   22.5   23.0     6H   25.5   25.8   26.0   26.3   26.8   21.9   22.2   22.4   22.7   23.2     8H   25.6   25.9   26.1   26.4   26.9   22.1   22.3   22.6   22.8   23.4     12H   25.7   25.9   26.3   26.5   27.0   22.4   22.6   23.0   23.1     12H   4H   25.4   25.8   25.9   26.2   26.7   21.7   22.0   22.2   22.5   23.0     6H   25.5   25.8   26.0   26.3   26.8   21.9   22.2   22.4   22.7   23.2     8H   25.6   25.8   26.0   26.3   26.8   21.9   22.2   22.4   22.7   23.2     21H   4H   25.4   25.8   25.9   26.2   26.7   21.7   22.0   22.2   22.4   22.7   23.2     8H   25.6   25.8   26.1   26.3   26.8   21.9   22.2   22.4   22.7   23.2     8H   25.6   25.8   26.1   26.3   26.8   21.9   22.2   22.4   22.7   23.2     8H   25.6   25.8   26.1   26.3   26.9   22.2   22.4   22.7   23.9     Variation of the observer position for the luminaire distance S    S = 1.0H		12H	25.7	26.2	26.1	26.6	26.9	21.9	22.4	22.3	22.8	23.1		
4H       25.6       26.0       26.0       26.4       26.8       21.7       22.2       22.1       22.6       23.0         6H       25.6       26.0       26.1       26.4       26.9       21.8       22.2       22.3       22.6       23.1         8H       25.6       26.0       26.1       26.4       26.9       21.9       22.3       22.4       22.7       23.2         12H       25.7       26.0       26.2       26.5       27.0       22.1       22.5       22.6       22.9       23.4         8H       4H       25.5       25.8       25.9       26.3       26.7       21.7       22.1       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         8H       25.6       25.9       26.1       26.4       26.9       22.1       22.3       22.6       22.8       23.4         12H       4H       25.4       25.8       25.9       26.2       26.7       21.7       22.0       22.2       22.5       23.0         4H       25.6       25.8       26.0       26.	4H	4H 2H 25.3 26.0 25.7 26.3 26.6							22.3	22.0	22.6	22.9		
6H       25.6       26.0       26.1       26.4       26.9       21.8       22.2       22.3       22.6       23.1         8H       25.6       26.0       26.1       26.4       26.9       21.9       22.3       22.4       22.7       23.2         12H       25.7       26.0       26.2       26.5       27.0       22.1       22.5       22.6       22.9       23.4         8H       4H       25.5       25.8       25.9       26.3       26.7       21.7       22.1       22.2       22.2       22.5       23.0         8H       25.6       25.9       26.1       26.4       26.9       22.1       22.3       22.6       22.8       23.4         12H       25.7       25.9       26.1       26.4       26.9       22.1       22.3       22.6       22.8       23.4         12H       4H       25.4       25.8       25.9       26.2       26.7       21.7       22.0       22.2       22.5       23.0         4H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         28 H       25.6       25.8		3H 25.5 26.1 25.9 26.4							22.2	22.1	22.6	22.9		
8H       25.6       26.0       26.1       26.4       26.9       21.9       22.3       22.4       22.7       23.2         12H       25.7       26.0       26.2       26.5       27.0       22.1       22.5       22.6       22.9       23.4         8H       4H       25.5       25.8       25.9       26.3       26.7       21.7       22.1       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         8H       25.6       25.9       26.1       26.4       26.9       22.1       22.3       22.6       22.8       23.4         12H       24H       25.7       25.9       26.3       26.5       27.0       22.4       22.6       23.0       23.1       23.7         12H       4H       25.4       25.8       25.9       26.2       26.7       21.7       22.0       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       22.9       23.4         Variation of the observer pos		4H	25.6	26.0	26.0	26.4	26.8	21.7	22.2	22.1	22.6	23.0		
12H   25.7   26.0   26.2   26.5   27.0   22.1   22.5   22.6   22.9   23.4     8H		6H	25.6	26.0	26.1	26.4	26.9	21.8	22.2	22.3	22.6	23.1		
8H       4H       25.5       25.8       25.9       26.3       26.7       21.7       22.1       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         8H       25.6       25.9       26.1       26.4       26.9       22.1       22.3       22.6       22.8       23.4         12H       25.7       25.9       26.3       26.5       27.0       22.4       22.6       23.0       23.1       23.7         12H       4H       25.4       25.8       25.9       26.2       26.7       21.7       22.0       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         Variation of the observer position for the luminaire distance S         S = 1.0H       +3.5 / -4.0       +4.3 / -3.1       +6.9 / -3.5       +8.9 / -4.3         S = 2.0H       +7.9 / -5.0       BK01       BK01	8H		25.6	26.0	26.1	26.4	26.9	21.9	22.3	22.4	22.7	23.2		
6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         8H       25.6       25.9       26.1       26.4       26.9       22.1       22.3       22.6       22.8       23.4         12H       25.7       25.9       26.3       26.5       27.0       22.4       22.6       23.0       23.1       23.7         12H       4H       25.4       25.8       25.9       26.2       26.7       21.7       22.0       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         Variation of the observer position for the luminaire distance S         S = 1.0H       +3.5 / -4.0       +4.3 / -3.1         +6.0 / -4.4       +6.0 / -4.4       +6.9 / -3.5         S = 2.0H       +7.9 / -5.0       BK01         BK01         BK01		12H	25.7	26.0	26.2	26.5	27.0	22.1	22.5	22.6	22.9	23.4		
8H       25.6       25.9       26.1       26.4       26.9       22.1       22.3       22.6       22.8       23.4         12H       25.7       25.9       26.3       26.5       27.0       22.4       22.6       23.0       23.1       23.7         12H       4H       25.4       25.8       25.9       26.2       26.7       21.7       22.0       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         Variation of the observer position for the luminaire distance S         S = 1.0H       +3.5 / -4.0       +4.3 / -3.1       +6.9 / -3.5         S = 2.0H       +7.9 / -5.0       +8.9 / -4.3         BK01     BK01   Correction summand  To be a constant and a cons	8H	4H	25.5	25.8	25.9	26.3	26.7	21.7	22.1	22.2	22.5	23.0		
12H       25.7       25.9       26.3       26.5       27.0       22.4       22.6       23.0       23.1       23.7         12H       4H       25.4       25.8       25.9       26.2       26.7       21.7       22.0       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         Variation of the observer position for the luminaire distance S         S = 1.0H       +3.5 / -4.0       +4.3 / -3.1         S = 1.5H       +6.0 / -4.4       +6.0 / -4.4       +6.9 / -3.5         S = 2.0H       BK01       BK01         Correction summand       7.6       4.0		6H	25.5	25.8	26.0	26.3	26.8	21.9	22.2	22.4	22.7	23.2		
12H       4H       25.4       25.8       25.9       26.2       26.7       21.7       22.0       22.2       22.5       23.0         6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         Variation of the observer position for the luminaire distance S         S = 1.0H       +3.5 / -4.0       +4.3 / -3.1       +6.9 / -3.5         S = 1.5H       +6.0 / -4.4       +6.9 / -3.5       +8.9 / -4.3         Standard table       BK01       BK01		8H	25.6	25.9	26.1	26.4	26.9	22.1	22.3	22.6	22.8	23.4		
6H       25.5       25.8       26.0       26.3       26.8       21.9       22.2       22.4       22.7       23.2         Variation of the observer position for the luminaire distance S         S = 1.0H       +3.5 / -4.0       +4.3 / -3.1         S = 1.5H       +6.0 / -4.4       +6.9 / -3.5         S = 2.0H       +7.9 / -5.0       BK01         Standard table       BK01         Correction summand       7.6		12H	25.7	25.9	26.3	26.5	27.0	22.4	22.6	23.0	23.1	23.7		
8H       25.6       25.8       26.1       26.3       26.9       22.2       22.4       22.7       22.9       23.4         Variation of the observer position for the luminaire distance S         S = 1.0H       +3.5 / -4.0       +4.3 / -3.1       +6.9 / -3.5       +6.9 / -3.5       +8.9 / -4.3       +8.9 / -4.3       Standard table       BK01	12H	4H	25.4	25.8	25.9	26.2	26.7	21.7	22.0	22.2	22.5	23.0		
Variation of the observer position for the luminaire distance S         S = 1.0H       +3.5 / -4.0       +4.3 / -3.1         S = 1.5H       +6.0 / -4.4       +6.9 / -3.5         S = 2.0H       +7.9 / -5.0       +8.9 / -4.3         Standard table       BK01       BK01         Correction summand       7.6       4.0		6H	25.5	25.8	26.0	26.3	26.8	21.9	22.2	22.4	22.7	23.2		
S = 1.0H       +3.5 / -4.0       +4.3 / -3.1         S = 1.5H       +6.0 / -4.4       +6.9 / -3.5         S = 2.0H       +7.9 / -5.0       +8.9 / -4.3         Standard table       BK01       BK01         Correction summand       7.6       4.0		8H	25.6	25.8	26.1	26.3	26.9	22.2	22.4	22.7	22.9	23.4		
S = 1.5H       +6.0 / -4.4       +6.9 / -3.5         S = 2.0H       +7.9 / -5.0       +8.9 / -4.3         Standard table       BK01       BK01         Correction summand       7.6       4.0	Variation of	of the obse	rver pos	sition for	the lumir	naire dis	tance S							
S = 2.0H       +7.9 / -5.0       +8.9 / -4.3         Standard table       BK01       BK01         Correction summand       7.6       4.0	S = 1	.0H		+3	3.5 / -4	1.0		+4.3 / -3.1						
Standard table BK01 BK01  Correction summand 7.6 4.0	S = 1	.5H		+6	6.0 / -4	1.4		+6.9 / -3.5						
Correction 7.6 4.0	S = 2	.0H		+7	7.9 / -5	5.0		+8.9 / -4.3						
summand 7.6 4.0	Standard	d table			BK01			BK01						
Corrected glare indices referring to 115lm total luminous flux					7.6					4.0				
	Corrected	Corrected glare indices referring to 115lm total luminous flux												