

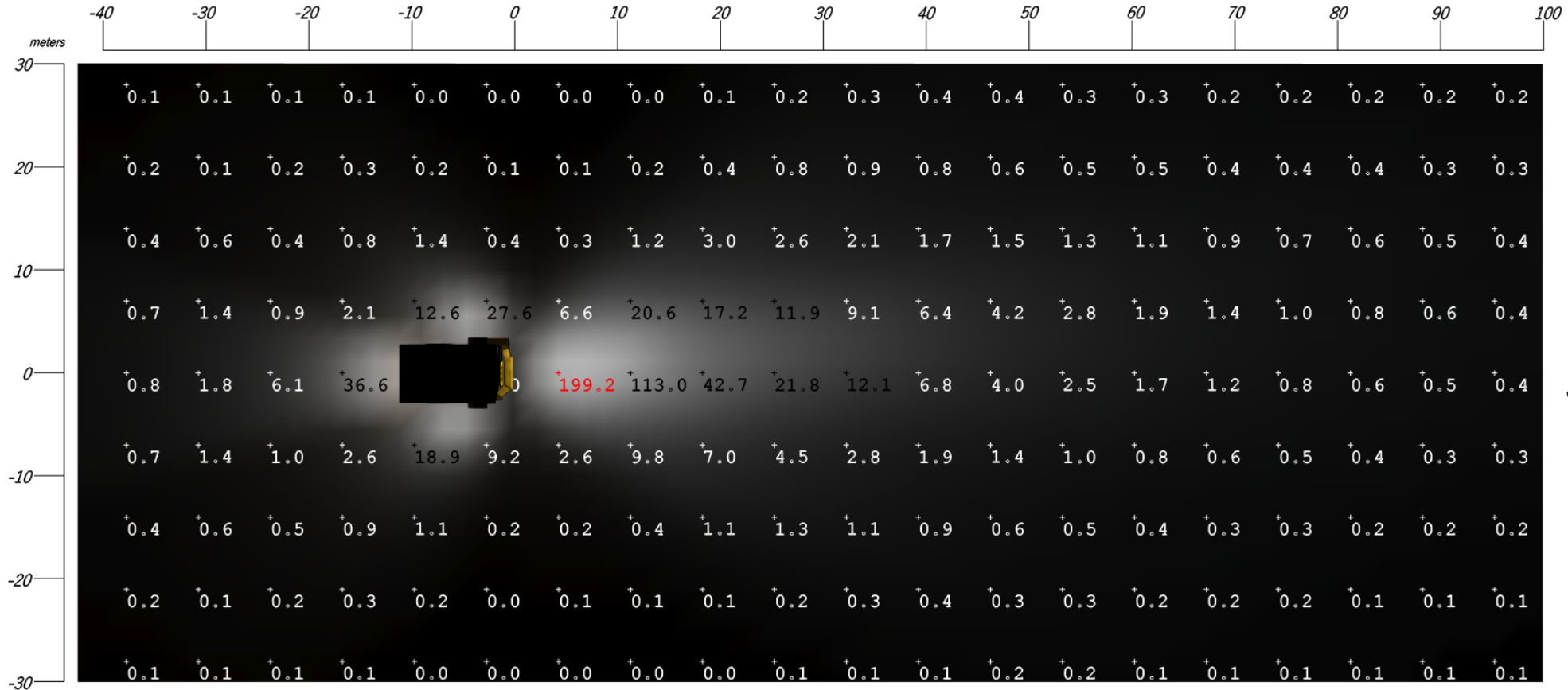
LIGHTS OPTIMISATION PLAN

Machine
CAT 777

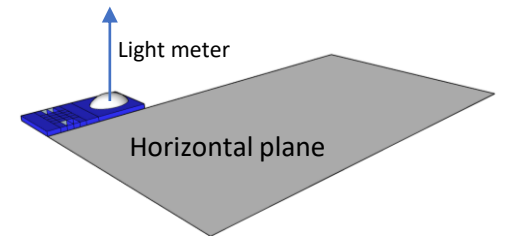


Simulation

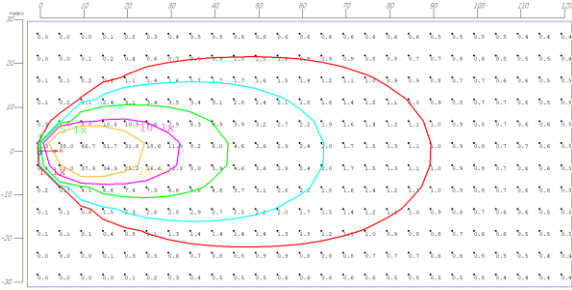
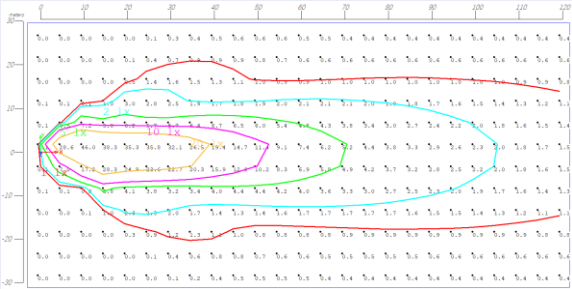
The simulation CAT 777 set up:



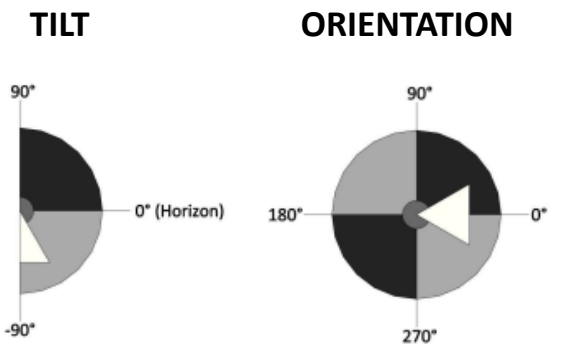
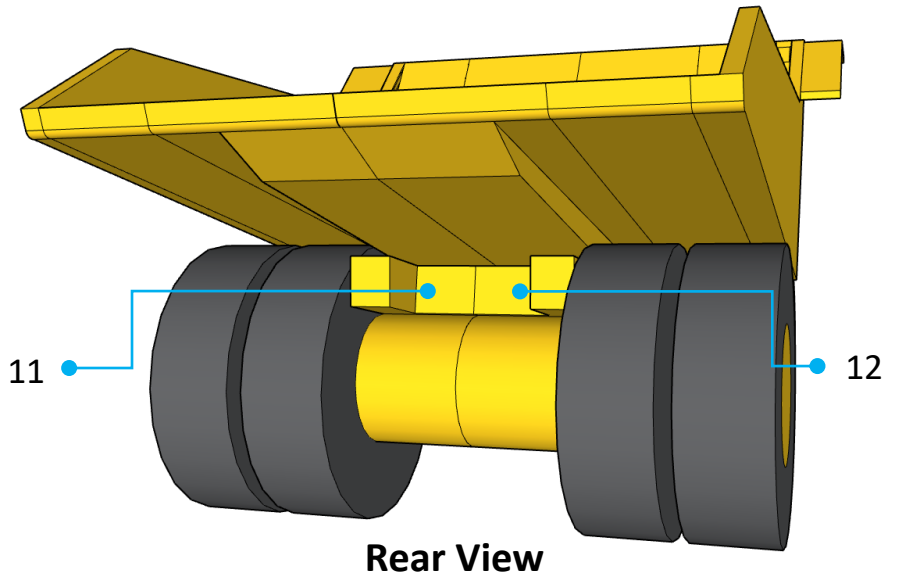
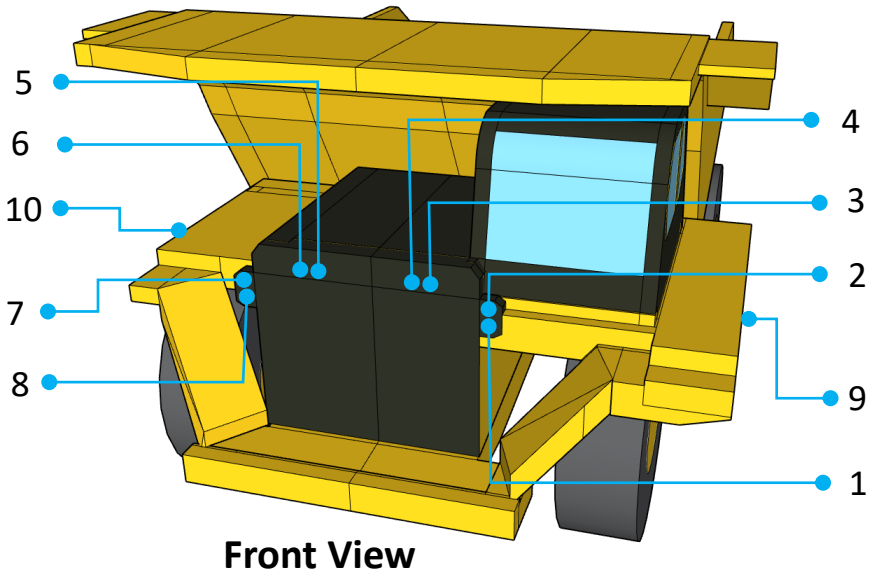
Note:



Optimisation Package

| Qty | Lights | Beam Patterns | Patent | Wattage | Lumens | Warranty |
|-----|----------------------------------|---|----------|---------|--------|----------|
| 8 | Heavy Duty 5000Lu LED Flood |  | IP68/69K | 48W | 5000Lu | 5 Years |
| 4 | Heavy Duty 5000Lu LED Long Range |  | IP68/69K | 48W | 5000Lu | 5 Years |

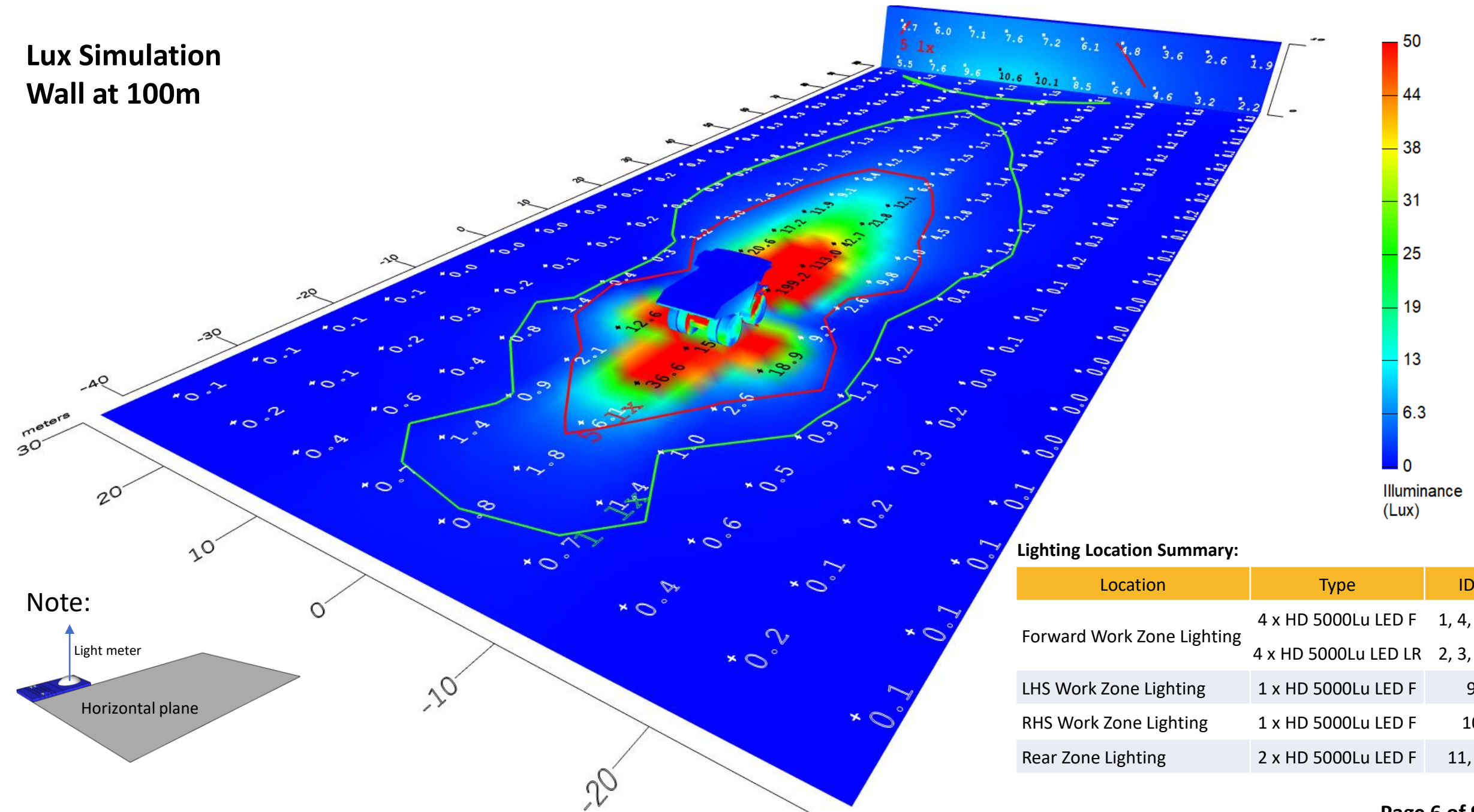
Light Positions



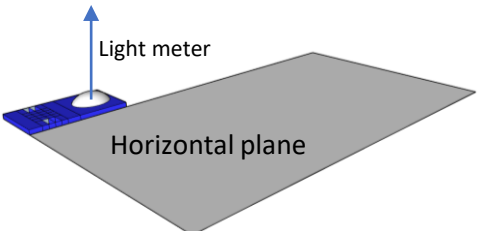
| | |
|---|----------------------------------|
| A | Heavy Duty 5000Lu LED Flood |
| B | Heavy Duty 5000Lu LED Long Range |

| No | Orient | Tilt | Height(m) | Lights |
|----|--------|------|-----------|--------|
| 1 | 5° | -10° | 2.91 | A |
| 2 | 5° | -5° | 3.06 | B |
| 3 | 5° | -5° | 3.28 | B |
| 4 | 5° | -10° | 3.28 | A |
| 5 | 5° | -10° | 3.28 | A |
| 6 | 5° | -5° | 3.28 | B |
| 7 | 5° | -5° | 3.06 | B |
| 8 | 5° | -10° | 2.91 | A |
| 9 | 160° | -30° | 2.79 | A |
| 10 | 200° | -30° | 2.89 | A |
| 11 | 170° | -15° | 2.11 | A |
| 12 | 190° | -15° | 2.11 | A |

Lux Simulation Wall at 100m



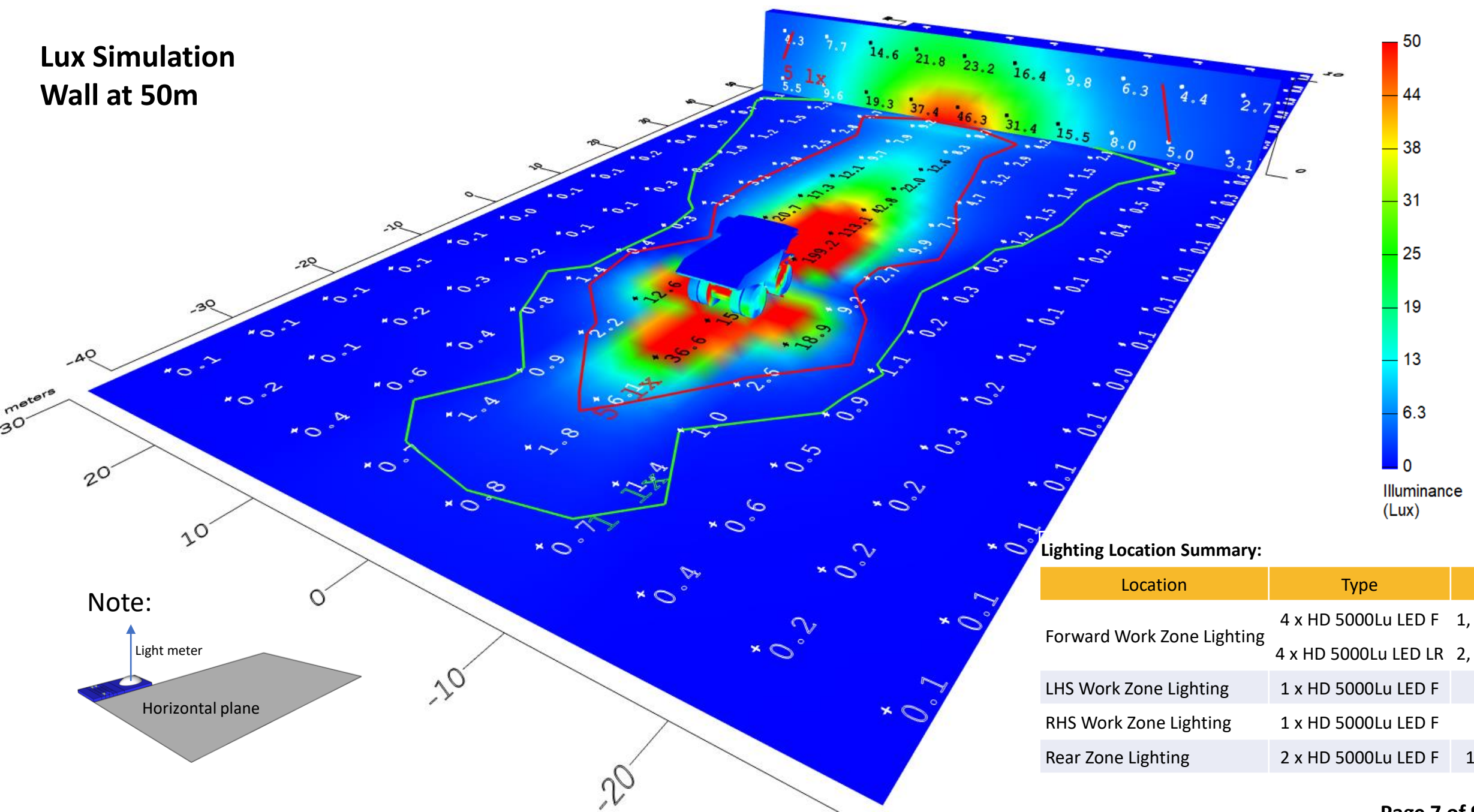
Note:



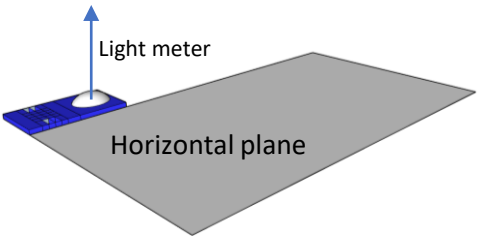
Lighting Location Summary:

| Location | Type | ID# |
|----------------------------|----------------------|------------|
| Forward Work Zone Lighting | 4 x HD 5000Lu LED F | 1, 4, 5, 8 |
| | 4 x HD 5000Lu LED LR | 2, 3, 6, 7 |
| LHS Work Zone Lighting | 1 x HD 5000Lu LED F | 9 |
| RHS Work Zone Lighting | 1 x HD 5000Lu LED F | 10 |
| Rear Zone Lighting | 2 x HD 5000Lu LED F | 11, 12 |

Lux Simulation Wall at 50m

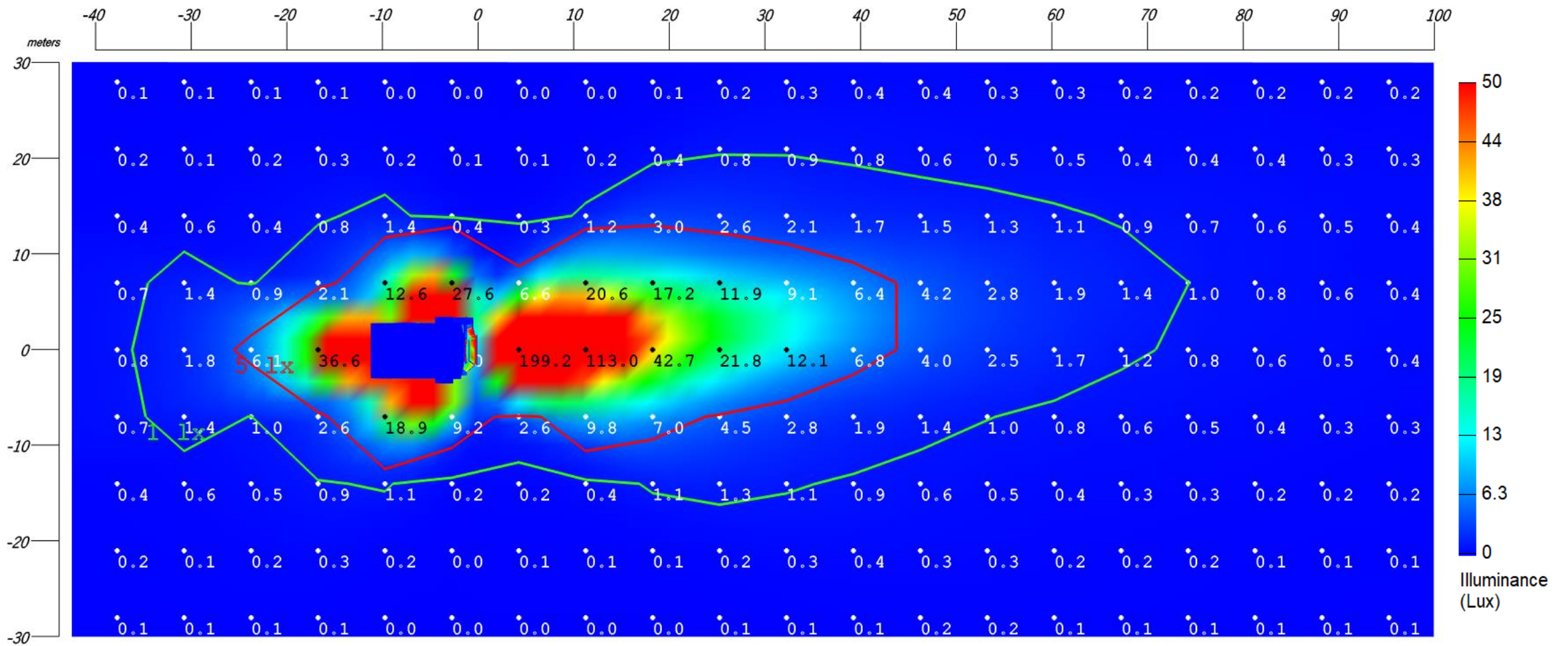


Note:



Lighting Location Summary:

| Location | Type | ID# |
|----------------------------|----------------------|------------|
| Forward Work Zone Lighting | 4 x HD 5000Lu LED F | 1, 4, 5, 8 |
| | 4 x HD 5000Lu LED LR | 2, 3, 6, 7 |
| LHS Work Zone Lighting | 1 x HD 5000Lu LED F | 9 |
| RHS Work Zone Lighting | 1 x HD 5000Lu LED F | 10 |
| Rear Zone Lighting | 2 x HD 5000Lu LED F | 11, 12 |

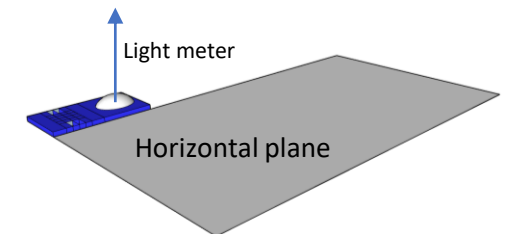


Lighting Location Summary:

| Location | Type | ID# |
|----------------------------|----------------------|------------|
| Forward Work Zone Lighting | 4 x HD 5000Lu LED F | 1, 4, 5, 8 |
| | 4 x HD 5000Lu LED LR | 2, 3, 6, 7 |
| LHS Work Zone Lighting | 1 x HD 5000Lu LED F | 9 |
| RHS Work Zone Lighting | 1 x HD 5000Lu LED F | 10 |
| Rear Zone Lighting | 2 x HD 5000Lu LED F | 11, 12 |

Top View

Note:



Iso Lux Lines

Top view of the CAT 777 is in the picture on this page.

Lux point values and Isolux lines are calculated from light meter placed vertically to the ground level and all pointing towards the source of the light.

Different lux values are represented by each color: 1 lux, 2 lux, 5 lux, 10 lux, and 20 lux.

