

وزارة الشباب والرياضة

مشروع تطوير ورفع كفاءة ملاعب التدريب كرة القدم لبطولة أمم أفريقيا – مصر ٢٠١٩

دراسة ضوئية – ستاد نادى الأوليمبى السكندرى

تصميم الإضاءة بملاعب كرة القدم الرئيسى بنادى الأوليمبى السكندرى

بإستخدام كشافات ليد ٥٠٠ وات – أوروبى

V-TAC Europe Ltd, Bulgaria



BADRY SLS

BADRY GROUP MEMBER

2019

BADRY Sports Lighting Solutions

Poles (High Mast) / LED Light Fixtures Summary

A. Existing (E) LED Light Fixtures Summary

Pole ID	Pole Height	Fixture Qty	Light Fixture & Lamp Type	Series / Group
P1	18.0	30	15 LED (500W) + 15 LED (300W) - 2Y	LED 500/300
P2	18.0	30	15 LED (500W) + 15 LED (300W) - 2Y	LED 500/300
P3	18.0	30	15 LED (500W) + 15 LED (300W) - 2Y	LED 500/300
P4	18.0	30	15 LED (500W) + 15 LED (300W) - 2Y	LED 500/300
Main Stand	18.0	00	15 LED (500W) + 15 LED (300W) - 2Y	LED 500/300
SUM (E)	---	120	15 LED (500W) + 15 LED (300W) - 2Y	LED 500/300

B. NEW Adding (N) LED Light Fixtures Summary

Pole ID	Pole Height	Fixture Qty	Light Fixture & Lamp Type	Series / Group
P1	18.0	20	V-TAC LED 500W, 6000K - 40,000 LM	VT - 47500
P2	18.0	20	V-TAC LED 500W, 6000K - 40,000 LM	VT - 47500
P3	18.0	20	V-TAC LED 500W, 6000K - 40,000 LM	VT - 47500
P4	18.0	20	V-TAC LED 500W, 6000K - 40,000 LM	VT - 47500
Main Stand	18.0	24	V-TAC LED 500W, 6000K - 40,000 LM	VT - 47500
SUM (N)	---	104	V-TAC LED 500W, 6000K - 40,000 LM	VT - 47500

Calculati on Grid Summary

Grid Name	Calculation Metric	Light Level			HZ Uniformity		Groups	Fixture Qty	
		Type	Ave	Min	Max	Min/Max (U1)			Min/Ave (U2)
(1) Field Football	Horizontal Illuminance	Constant	508	290	655	0.44	0.57	VT- 47	104(N)+120(E)

Group Summary

Group	Description	Load (New)	Fixture Qty
VT- 47	V-TAC LED 500W, VT- 47500, 6000K - 40,000 LM	48.88 KW	104 (New)



V-TAC[®]
INNOVATIVE LED LIGHTING

LED Floodlights SMD High Power
500W LED Floodlight V-TAC Classic
PREMIUM Black Body SMD C.White

SKU: 5696 | VT: VT-47500

Sports Lighting Applications

Light color: Cool White
Color Temperature: 6000K
Luminous flux: 40000 lm
IP Rating: IP65

500W . IP-65 . 6000K

Wattage
500W
EQ. Wattage
2000W
Voltage
AC: 100-240V
Frequency
50/60Hz
Power Factor
>0.9

V-TAC Europe Ltd
Sofia, Bulgaria
www.v-tac.eu



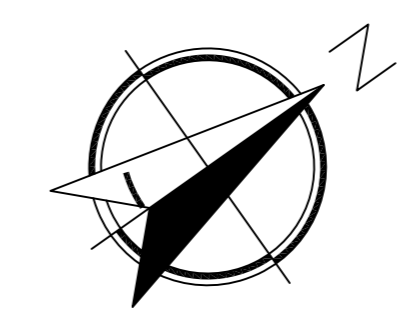
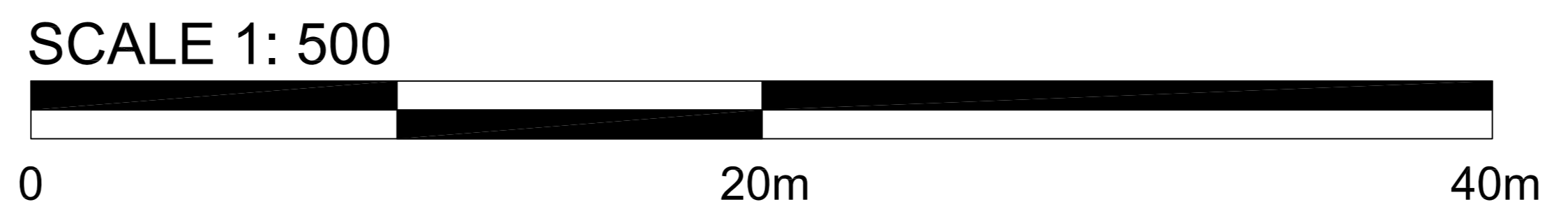
Name: Lighting Of Olympic Football Pitch
Location: Alexandria, Egypt



ENGINEERED LIGHTING DESIGN
By: Eng. Mohammed Khalil
File # / Date: 19590BPA_REV 0 15-May.19

EQUIPMENT LIST FOR AREAS SHOWN

Poles (High Masts) / Stands			Setback		V-TAC, VT-47500, LED 500W (N)			
QTY	LOCATION	Height	Configuration	SB-A = 15.8m	104 (N) - VT-47500, 500W	QTY / POLE	QTY / Stand	SUM All
4 + 1	4 Mast + Stand	18.0m	Mixed (S/C/S)	SB-B = 7.1m	120 (E) - LEDs 500W/300W	50	24	--
4 + 1	TOTALS					200	24	224



PROJECT
Name: Lighting Of Olympic Football Pitch
Location: Alexandria, Egypt

GRID SUMMARY
Name: Field Football Pitch
Size: 104m x 64m
Spacing: 10.5m x 10.5m
Height: Measuring; 1.0m above grade

CONSTANT ILLUMINATION

SUMMARY	HORIZONTAL LUX
Entire Grid	
Scan Average:	508
Maximum:	655
Minimum:	290
Min / Avg:	0.57
Min / Max:	0.44
GR (Glare Rating):	50
No. of Points:	60

LUMINAIRE INFORMATION
LuminaireType: VT-47500, LED 500W
Design Usage Hours: 5,000 hours
Design Lumens: 40,000
Avg Lamp Tilt Factor: 0.9
No. of Luminaires: 104 (N) + 120 (E)
Avg KW: 48.88 (New Adding Only)

Guaranteed Performance: The CONSTANT ILLUMINATION described above is guaranteed for the design usage hours of the system.

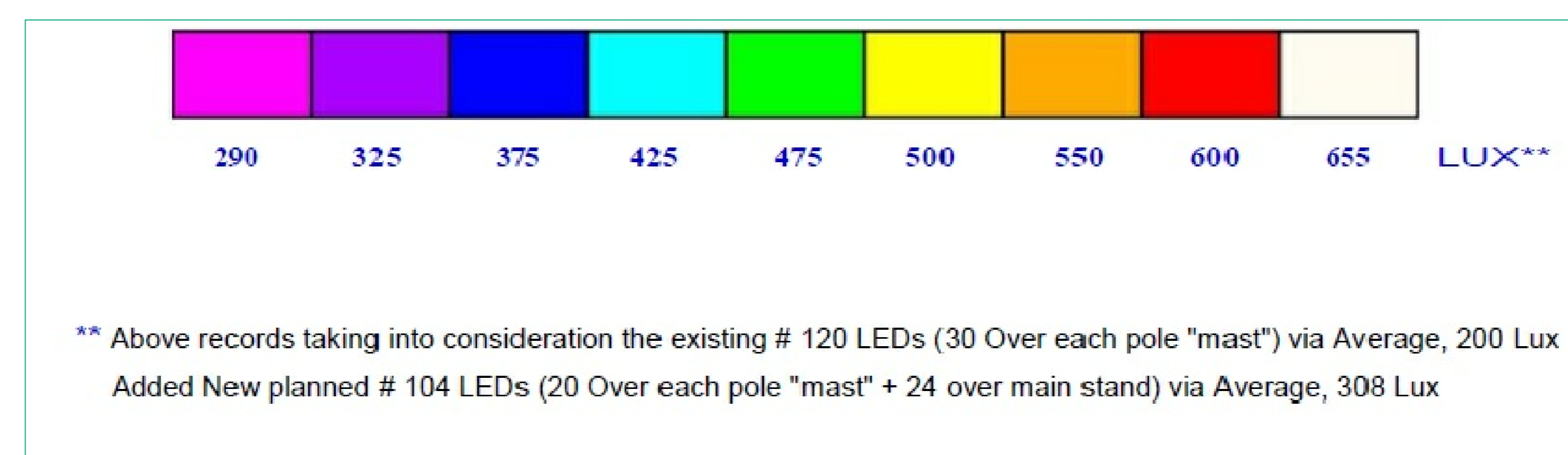
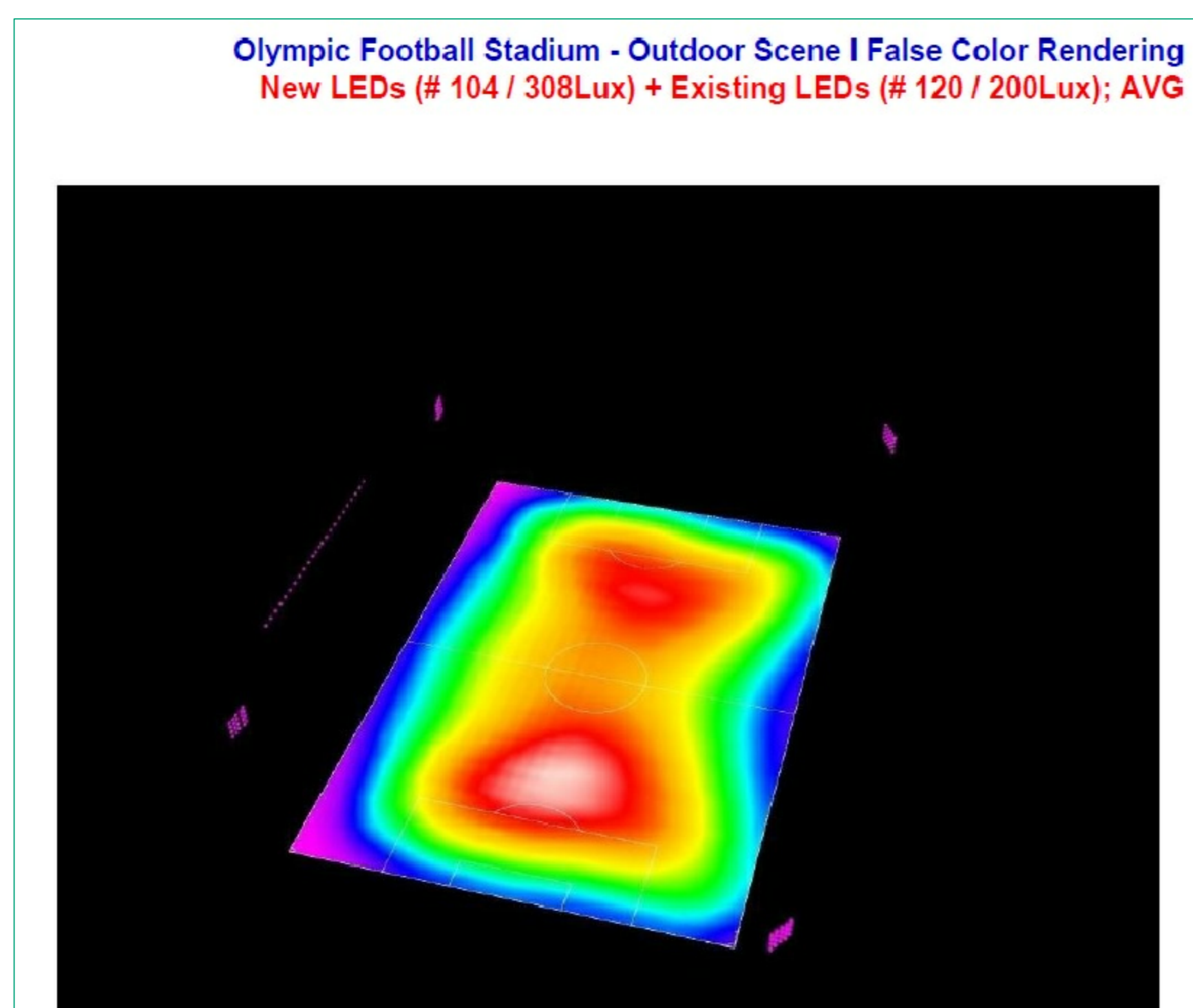
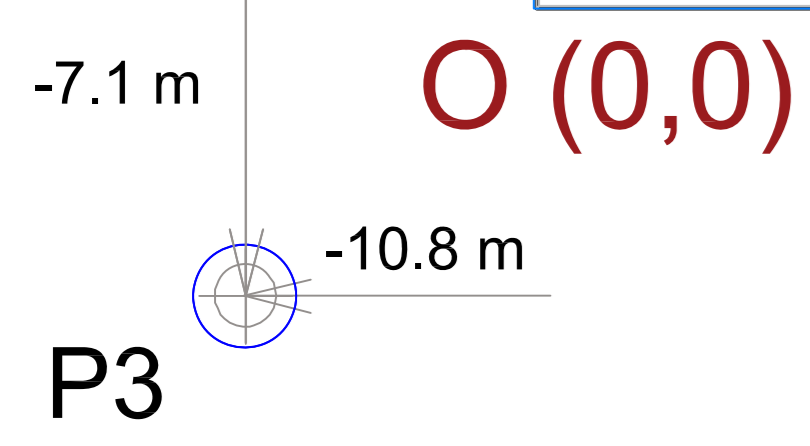
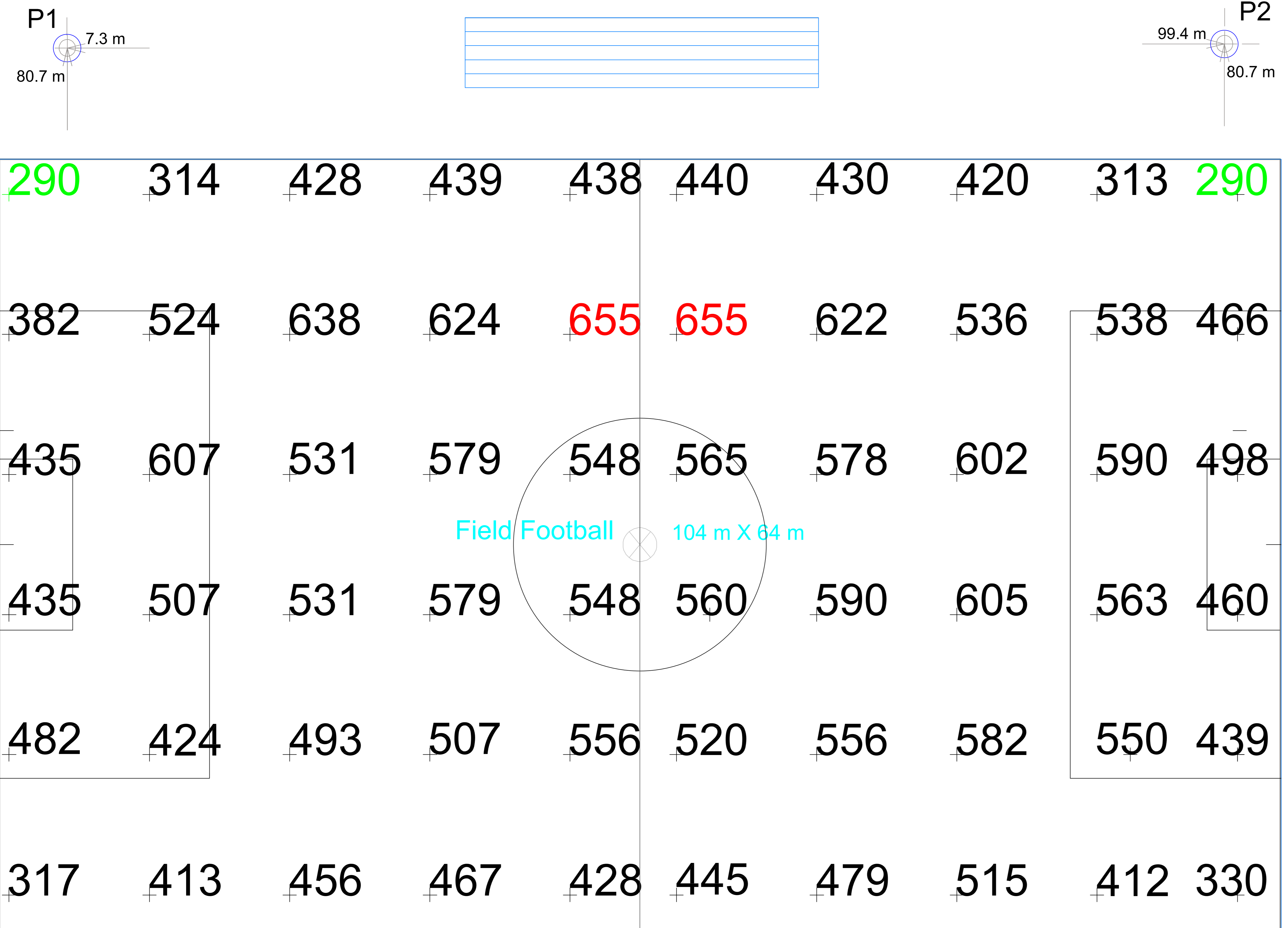
Field Measurements: Illumination measured in accordance with IESNA RP-6-15 and CIBSE LG4. Individual values may vary. See the Warranty document for details.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "SLS Control System Summary" for electrical sizing.

Installation Requirements: Results assume +/- 5% nominal voltage at line side of the ballast and structures located within 2M of design locations.

Coordinations, Axis, Mast Points (Poles); all are measured and referenced to Point O

ENGINEERED LIGHTING DESIGN
 By: Eng. Mohammed Khalil
 File # / Date: 19590PBP_REV 0 15-May.19



V-TAC[®]
INNOVATIVE LED LIGHTING

5 YEAR
WARRANTY



LED Floodlights SMD High Power

Sports Lighting Applications

500W . IP-65 . 6000K

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INNOVATIVE LED LIGHTING

LED Floodlights SMD High Power
500W LED Floodlight V-TAC Classic
PREMIUM Black Body SMD C.White

SKU: 5696 | VT: VT-47500

Sports Lighting Applications

Light color: Cool White
Color Temperature: 6000K
Luminous flux: 40000 lm
IP Rating: IP65

500W . IP-65 . 6000K

Wattage
500W
EQ. Wattage
2000W
Voltage
AC: 100-240V
Frequency
50/60Hz
Power Factor
>0.9



V-TAC Europe Ltd
Sofia, Bulgaria
www.v-tac.eu

LED Floodlights SMD High Power (500W)



VT- 47500

HIGHLIGHTS :

WATTS



500

EQ. WATTS



2000

LUMINOUS



40000

BEAM ANGLE



60

Item No	:	VT-47500
SKU Code	:	5696
Watts	:	500 (470 Actual)
EQ. Watts	:	2000
Voltage	:	100-240V,50/60Hz
Lumen (lm)	:	40000
Color Temperature	:	6000K
Beam Angle	:	30 / 60 / 90
PF	:	>0.9
LED Chip Type	:	SMD
CRI	:	>70
Energy rating label	:	A
Certification	:	CE,EMC,ROHS
IP Rating Protection Class	:	IP65
Body type	:	DIE CAST ALUMINUM
Dimmable	:	No
Life Time	:	>20000 Hours
Operation Temperature	:	-25 ~50°C
EAN code Unit	:	3800157603812
Size Packing	:	500x510x149mm
Details	:	1.00
Unit cbm	:	0.08940

PRODUCT FEATURES

- Available in White, Cool White and RGB Light output option
- Premium Quality Aluminium Alloy body
- Corrosion Resistant
- Built in Power supply, No external ballast required
- PIR Sensor Movement Detector – Optional
- Widely used for Lighting Courts, Gardens & Buildings, Commercial Bill, Boards & Hoardings, Plazas, Sports Grounds & Parking Lots

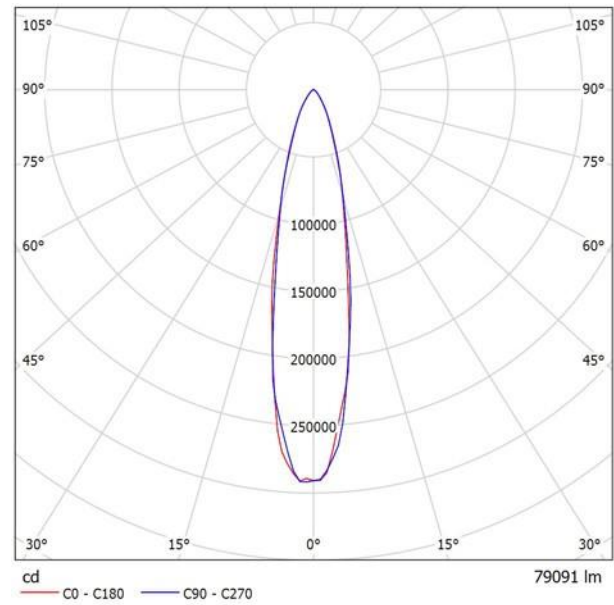
**V-TAC LIGHTING 500W, SKU: 5696 | VT: VT-47500 - 60Degree /
LED Floodlights SMD High Power (500W)**

See our luminaire catalog for technical Parameters.



Luminaire EAN Code: 3800157603812
CIE flux code: 90 97 99 100 100

Luminous emittance 1:



Due to missing symmetry properties, no UGR table can be displayed for this luminaire.

V-TAC Luminaire Model: VT-47

Power: 500W, 600W, 800W, 1000W (LED)

Selected Power: 500 W

Luminaire Code: VT-47500

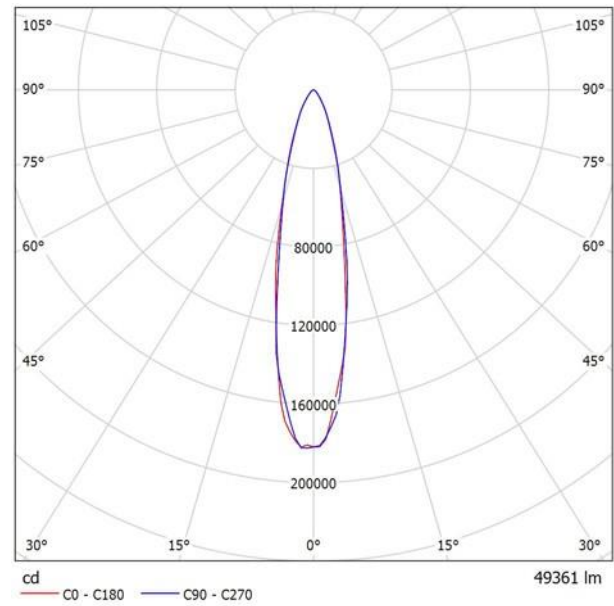
**V-TAC LIGHTING 500W, SKU: 5696 | VT: VT-47500 - 60Degree /
LED Floodlights SMD High Power (500W)**

See our luminaire catalog for technical Parameters.



Luminaire EAN Code: 3800157603812
CIE flux code: 90 97 99 100 100

Luminous emittance 1:



Due to missing symmetry properties, no UGR table can be displayed for this luminaire.

V-TAC Luminaire Model: VT-47

Power: 500W, 600W, 800W, 1000W (LED)

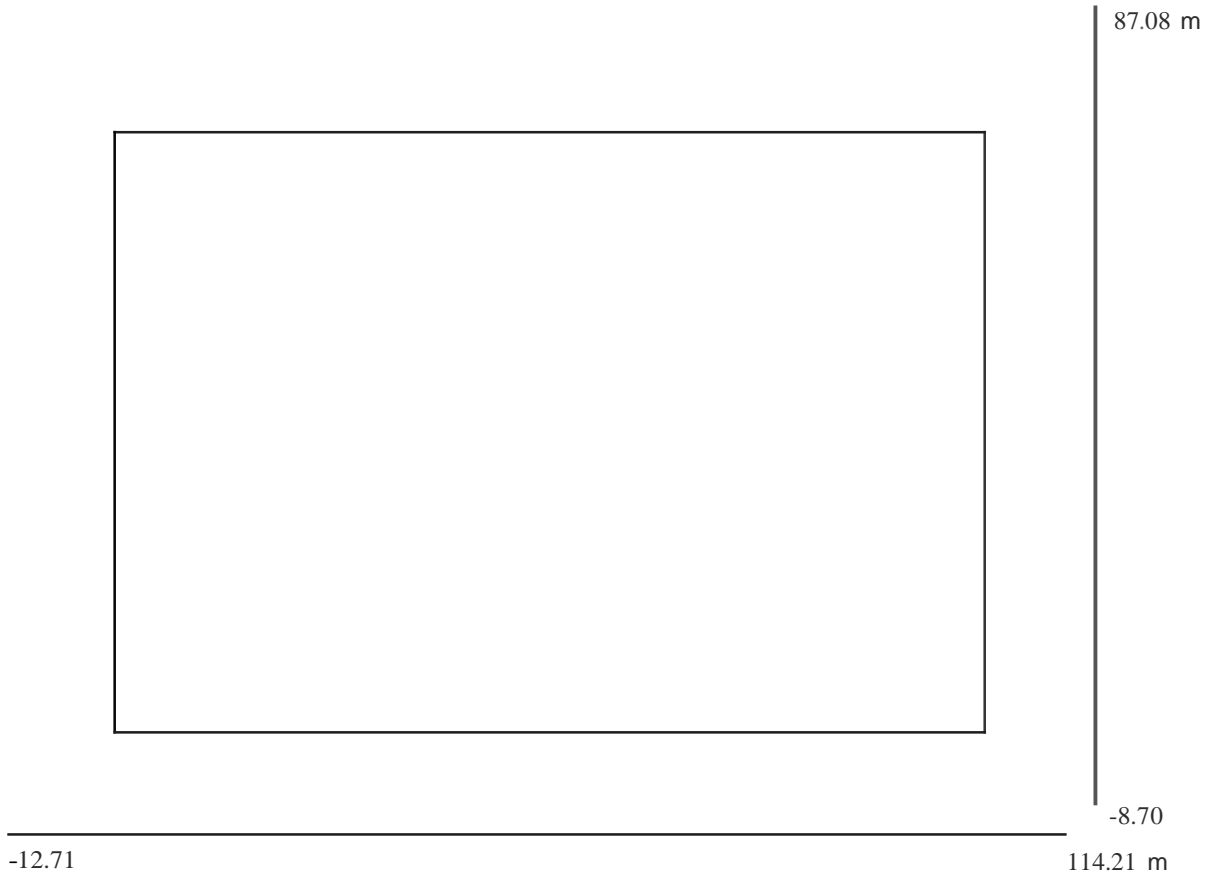
Selected Power: 500 W

Luminaire Code: VT-47500



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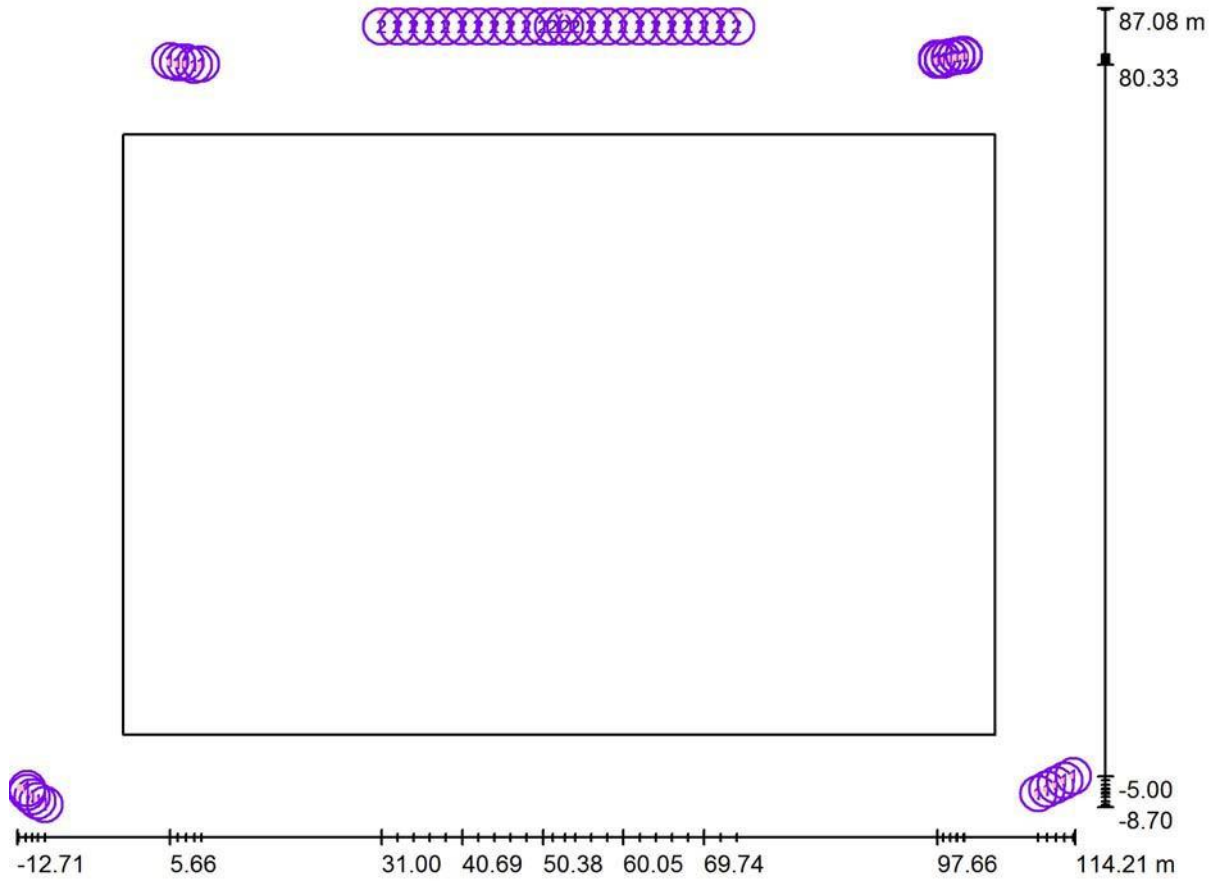
Olympic Football Stadium - Outdoor Scene / Floor plan



Scale 1 : 908



Olympic Football Stadium - Outdoor Scene / Luminaires (Layout Plan)



Scale 1 : 908

Luminaire Parts List

No.	Pieces	Designation
1	80	V-TAC LED LIGHTING – VT-47500, 500W, 6000K, 40K.lm - 60 Degree (4-Masts)
2	24	V-TAC LED LIGHTING – VT-47500, 500W, 6000K, 40K.lm - 60 Degree (Main Stand)

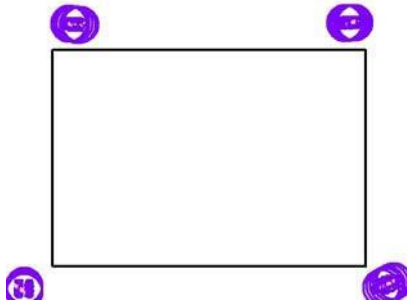


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Olympic Football Stadium - Outdoor Scene / Luminaires (Coordinates List) / 4 Masts

V-TAC LIGHTING 500W, SKU: 5696 I VT: VT-47500 - 60Degree

40000 lm, 470.0 W, 1 x 1 x User defined (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	9.388	80.402	18.000	76.7	0.0	-153.4
2	8.543	80.328	18.000	76.0	0.0	-162.1
3	7.539	80.631	18.000	75.6	0.0	-169.9
4	6.562	80.620	18.000	75.5	0.0	-175.0
5	5.663	80.786	18.000	75.5	0.0	176.0
6	97.673	81.069	18.000	76.9	0.0	152.4
7	98.377	81.007	18.000	76.1	0.0	161.2
8	99.247	81.215	18.000	75.7	0.0	169.6
9	100.040	81.359	18.000	75.6	0.0	175.4
10	100.898	81.426	18.000	75.5	0.0	-178.4
11	9.388	80.402	19.021	76.1	0.0	-153.4
12	8.543	80.328	19.021	75.3	0.0	-162.1
13	7.539	80.631	19.021	74.9	0.0	-169.9
14	6.562	80.620	19.021	74.8	0.0	-175.0
15	5.663	80.786	19.021	74.8	0.0	176.0
16	97.692	80.930	19.021	76.2	0.0	152.4
17	98.399	80.930	19.021	75.5	0.0	161.2
18	99.248	81.213	19.021	75.0	0.0	169.6
19	100.026	81.425	19.021	74.9	0.0	175.4
20	100.874	81.566	19.021	74.9	0.0	-178.3
21	9.388	80.402	20.042	75.4	0.0	-153.4
22	8.543	80.328	20.042	74.6	0.0	-162.1
23	7.539	80.631	20.042	74.2	0.0	-169.9
24	6.562	80.620	20.042	74.1	0.0	-175.0
25	5.663	80.786	20.042	74.1	0.0	176.0
26	97.659	80.918	20.042	75.6	0.0	152.4
27	98.366	80.918	20.042	74.8	0.0	161.2
28	99.215	81.200	20.042	74.4	0.0	169.6

Olympic Football Stadium - Outdoor Scene / Luminaires (Coordinates List) / 4 Masts

No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
29	99.993	81.413	20.042	74.2	0.0	175.4
30	100.841	81.554	20.042	74.2	0.0	-178.3
31	-9.348	-8.422	18.000	79.6	0.0	-68.7
32	-10.244	-8.009	18.000	80.2	0.0	-60.9
33	-10.900	-7.500	18.000	80.7	0.0	-55.5
34	-11.688	-6.966	18.000	79.8	0.0	-50.8
35	-12.500	-6.500	18.000	78.8	0.0	-45.3
36	-9.348	-8.422	19.031	79.2	0.0	-68.7
37	-10.244	-8.009	19.031	79.8	0.0	-60.9
38	-10.900	-7.500	19.031	80.3	0.0	-55.5
39	-11.688	-6.966	19.031	79.3	0.0	-50.8
40	-12.500	-6.500	19.031	78.3	0.0	-45.3
41	-9.348	-8.422	20.061	78.7	0.0	-68.7
42	-10.244	-8.009	20.061	79.3	0.0	-60.9
43	-10.900	-7.500	20.061	79.9	0.0	-55.5
44	-11.688	-6.966	20.061	78.9	0.0	-50.8
45	-12.500	-6.500	20.061	77.8	0.0	-45.3
46	109.800	-7.100	18.000	79.3	0.0	68.6
47	110.850	-6.575	18.000	80.0	0.0	60.4
48	111.900	-6.050	18.000	80.5	0.0	55.1
49	112.950	-5.525	18.000	79.6	0.0	50.5
50	114.000	-5.000	18.000	78.5	0.0	44.6
51	109.800	-7.100	19.031	78.8	0.0	68.6
52	110.850	-6.575	19.031	79.5	0.0	60.4
53	111.900	-6.050	19.031	80.1	0.0	55.1
54	112.950	-5.525	19.031	79.1	0.0	50.5
55	114.000	-5.000	19.031	78.0	0.0	44.6
56	109.800	-7.100	20.062	78.3	0.0	68.6
57	110.850	-6.575	20.062	79.1	0.0	60.4
58	111.900	-6.050	20.062	79.6	0.0	55.1
59	112.950	-5.525	20.062	78.7	0.0	50.5
60	114.000	-5.000	20.062	77.5	0.0	44.6
61	9.388	80.402	20.904	74.9	0.0	-153.4
62	8.543	80.328	20.904	74.1	0.0	-162.1
63	7.539	80.631	20.904	73.7	0.0	-169.9
64	6.562	80.620	20.904	73.5	0.0	-175.0
65	5.663	80.786	20.904	73.5	0.0	176.0
66	97.659	80.918	20.904	75.1	0.0	152.4



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Olympic Football Stadium - Outdoor Scene / Luminaires (Coordinates List) / 4 Masts

No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
67	98.366	80.918	20.904	74.3	0.0	161.2
68	99.215	81.200	20.904	73.8	0.0	169.6
69	99.993	81.413	20.904	73.6	0.0	175.4
70	100.841	81.554	20.904	73.6	0.0	-178.3
71	-9.348	-8.422	20.923	78.3	0.0	-68.7
72	-10.244	-8.009	20.923	79.0	0.0	-60.9
73	-10.900	-7.500	20.923	79.5	0.0	-55.5
74	-11.688	-6.966	20.923	78.5	0.0	-50.8
75	-12.500	-6.500	20.923	77.4	0.0	-45.3
76	109.800	-7.100	20.924	77.9	0.0	68.6
77	110.850	-6.575	20.924	78.7	0.0	60.4
78	111.900	-6.050	20.924	79.3	0.0	55.1
79	112.950	-5.525	20.924	78.3	0.0	50.5
80	114.000	-5.000	20.924	77.0	0.0	44.6

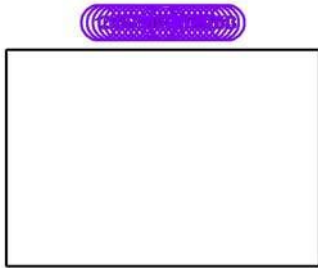


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Olympic Football Stadium - Outdoor Scene / Luminaires (Coordinates List) / Main Stand

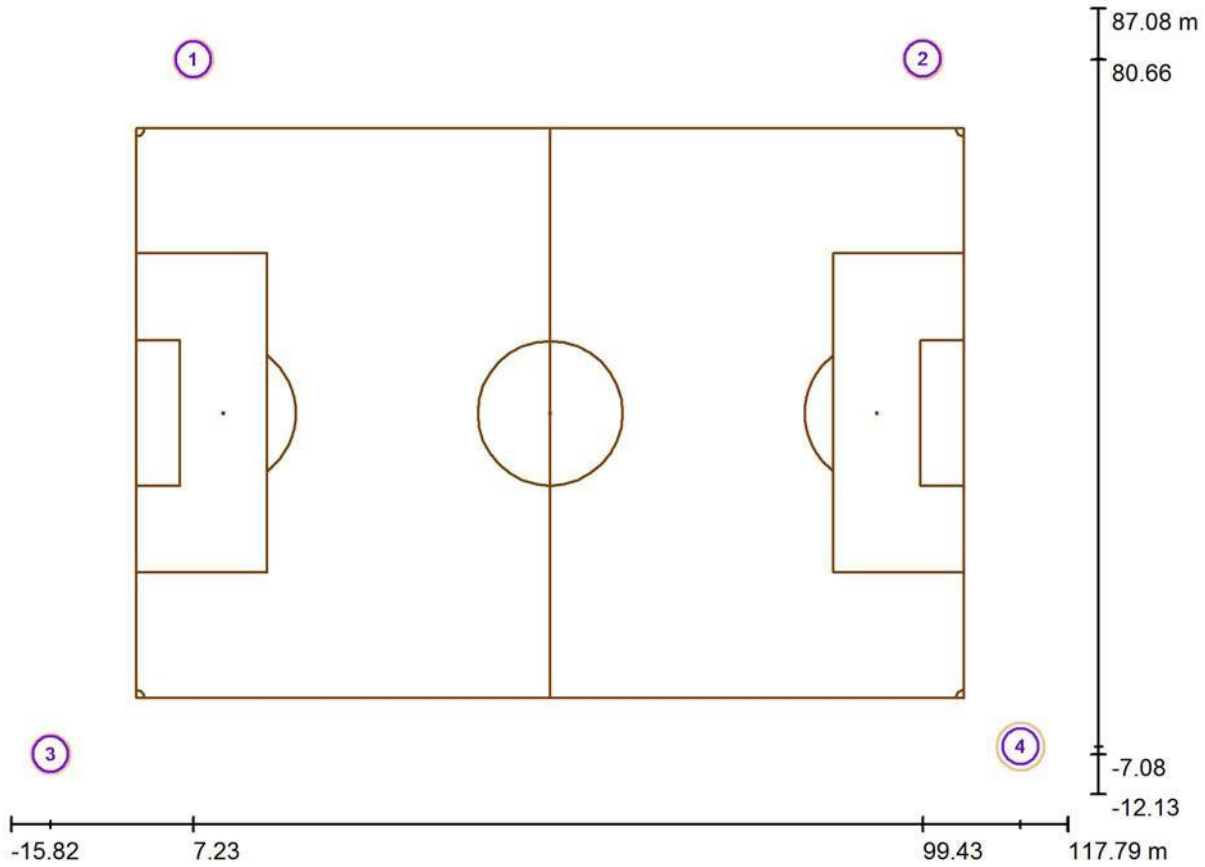
V-TAC LIGHTING 500W, SKU: 5696 I VT: VT-47500 - 60Degree

40000 lm, 470.0 W, 1 x 1 x User defined (Correction Factor 1.000).



No.	Position [m]			Rotation [°]		
	X	Y	Z	X	Y	Z
1	30.999	86.964	18.000	77.0	0.0	160.4
2	32.937	86.964	18.000	76.9	0.0	161.4
3	34.875	86.964	18.000	76.8	0.0	162.9
4	36.813	86.964	18.000	76.7	0.0	164.3
5	38.750	86.964	18.000	76.6	0.0	166.0
6	40.688	86.964	18.000	76.6	0.0	167.8
7	42.626	86.964	18.000	76.5	0.0	169.8
8	44.564	86.964	18.000	76.4	0.0	171.3
9	46.501	86.964	18.000	76.4	0.0	173.1
10	48.439	86.964	18.000	76.4	0.0	174.8
11	50.377	86.964	18.000	76.3	0.0	176.5
12	51.565	86.943	18.000	76.3	0.0	178.7
13	73.615	86.964	18.000	77.0	0.0	-160.4
14	71.677	86.964	18.000	76.9	0.0	-161.6
15	69.740	86.964	18.000	76.8	0.0	-162.9
16	67.802	86.964	18.000	76.7	0.0	-165.1
17	65.864	86.964	18.000	76.6	0.0	-166.7
18	63.926	86.964	18.000	76.5	0.0	-168.3
19	61.989	86.964	18.000	76.5	0.0	-170.1
20	60.051	86.964	18.000	76.4	0.0	-171.8
21	58.113	86.964	18.000	76.4	0.0	-173.3
22	56.175	86.964	18.000	76.3	0.0	-175.0
23	54.238	86.964	18.000	76.3	0.0	-176.6
24	53.049	86.943	18.000	76.3	0.0	-178.5

Olympic Football Stadium - Outdoor Scene / Poles "Masts" Positions (Coordinates List)

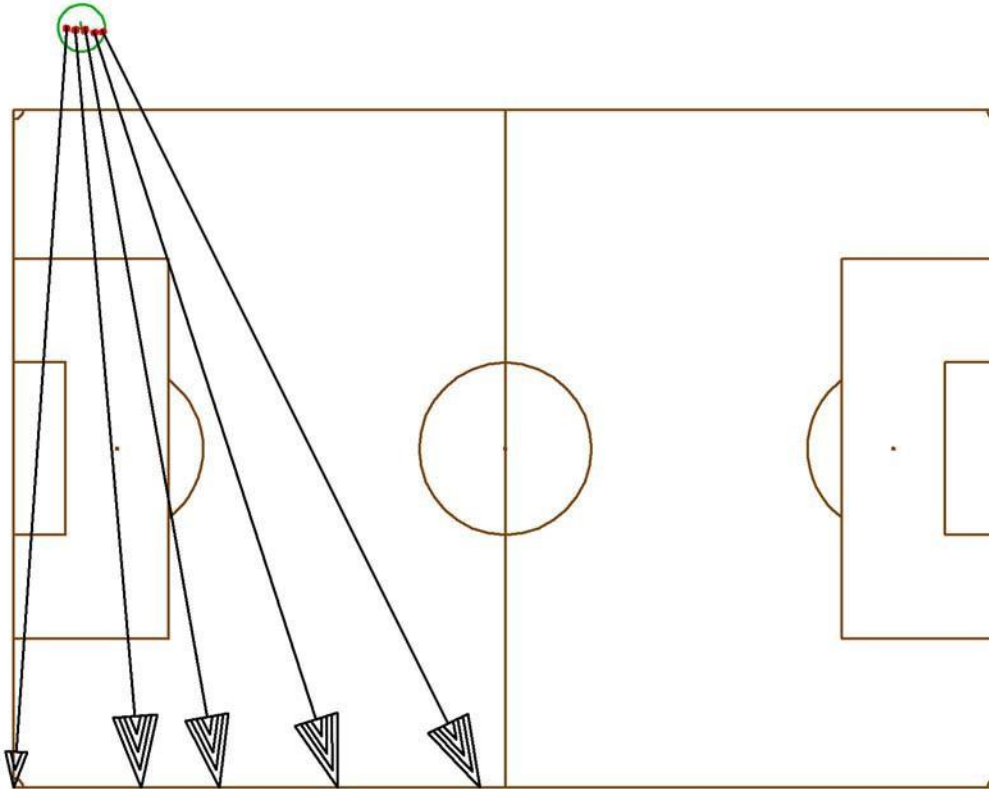


Scale 1 : 956

List of the Pole Positions

No.	Designation	Positionon [m]		
		X	Y	Z
1	Lamp post position 1	7.229	80.662	0.000
2	Lamp post position 2	99.433	80.724	0.000
3	Lamp post position 3	-10.823	-7.083	0.000
4	Lamp post position 4	111.792	-6.126	0.000

Olympic Football Stadium - Outdoor Scene / Pole "Mast" (1) Luminaires (Summary)



P1 (High Mast # 1); Position: (7.229 m, 80.662 m, 0.000 m)

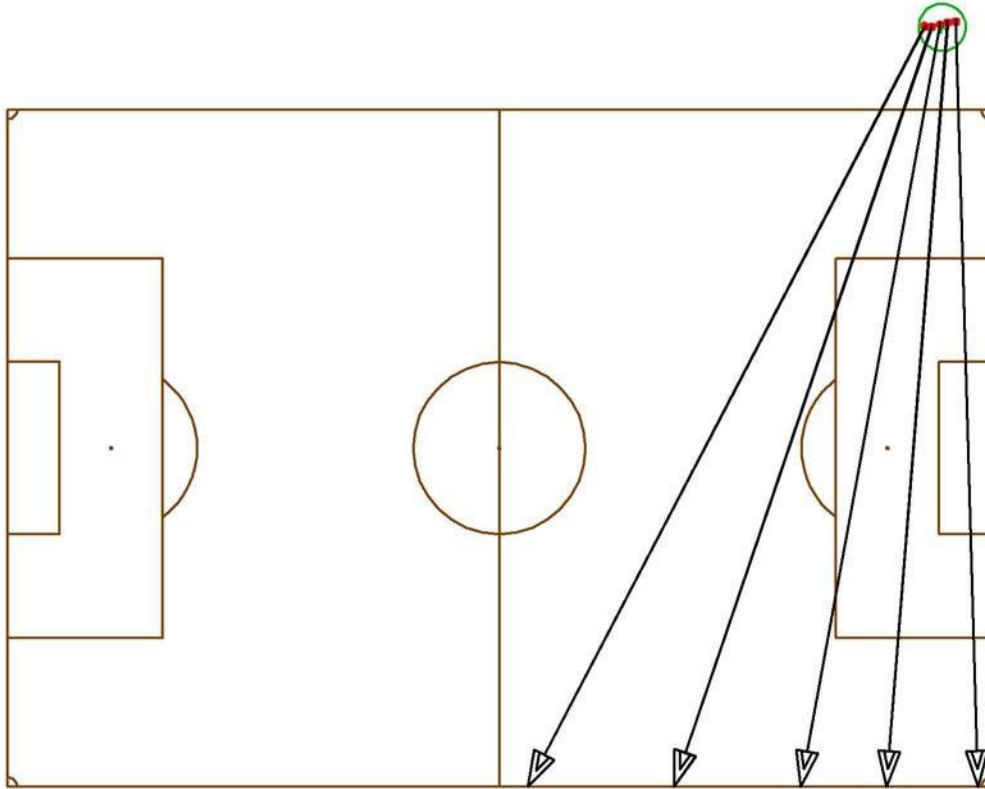
No.	Luminaire	Model	Wattage	Code	Degree	Aiming Points (m)			Angle °	Alignment
						X	Y	Z		
1	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	49.627	0.000	0.000	11.3	C 90, VT/GI Max
2	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	34.518	0.000	0.000	12	C 90, VT/GI Max
3	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	21.892	0.000	0.000	12.4	C 90, VT/GI Max
4	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	13.566	0.000	0.000	12.5	C 90, VT/GI Max

Olympic Football Stadium - Outdoor Scene / Pole "Mast" (1) Luminaires (Summary)

P1 (High Mast # 1); Position: (7.229 m, 80.662 m, 0.000 m) - Continued

No.	Luminaire	Model	Wattage	Code	Degree	Aiming Points (m)			Angle °	Alignment
						X	Y	Z		
5	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.000	0.000	0.000	12.5	C 90, VT/GI Max
6	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	49.627	0.000	0.000	11.9	C 90, VT/GI Max
7	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	34.518	0.000	0.000	12.7	C 90, VT/GI Max
8	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	21.892	0.000	0.000	13.1	C 90, VT/GI Max
9	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	13.566	0.000	0.000	13.2	C 90, VT/GI Max
10	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.000	0.000	0.000	13.2	C 90, VT/GI Max
11	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	49.627	0.000	0.000	12.6	C 90, VT/GI Max
12	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	34.518	0.000	0.000	13.4	C 90, VT/GI Max
13	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	21.892	0.000	0.000	13.8	C 90, VT/GI Max
14	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	13.566	0.000	0.000	13.9	C 90, VT/GI Max
15	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	0.000	0.000	13.9	C 90, VT/GI Max
16	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	49.627	0.000	0.000	13.1	C 90, VT/GI Max
17	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	34.518	0.000	0.000	13.9	C 90, VT/GI Max
18	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	21.892	0.000	0.000	14.3	C 90, VT/GI Max
19	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	13.566	0.000	0.000	14.5	C 90, VT/GI Max
20	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	0.000	0.000	14.5	C 90, VT/GI Max

Olympic Football Stadium - Outdoor Scene / Pole "Mast" (2) Luminaires (Summary)



P2 (High Mast # 2); Position: (99.433 m, 80.724 m, 0.000 m)

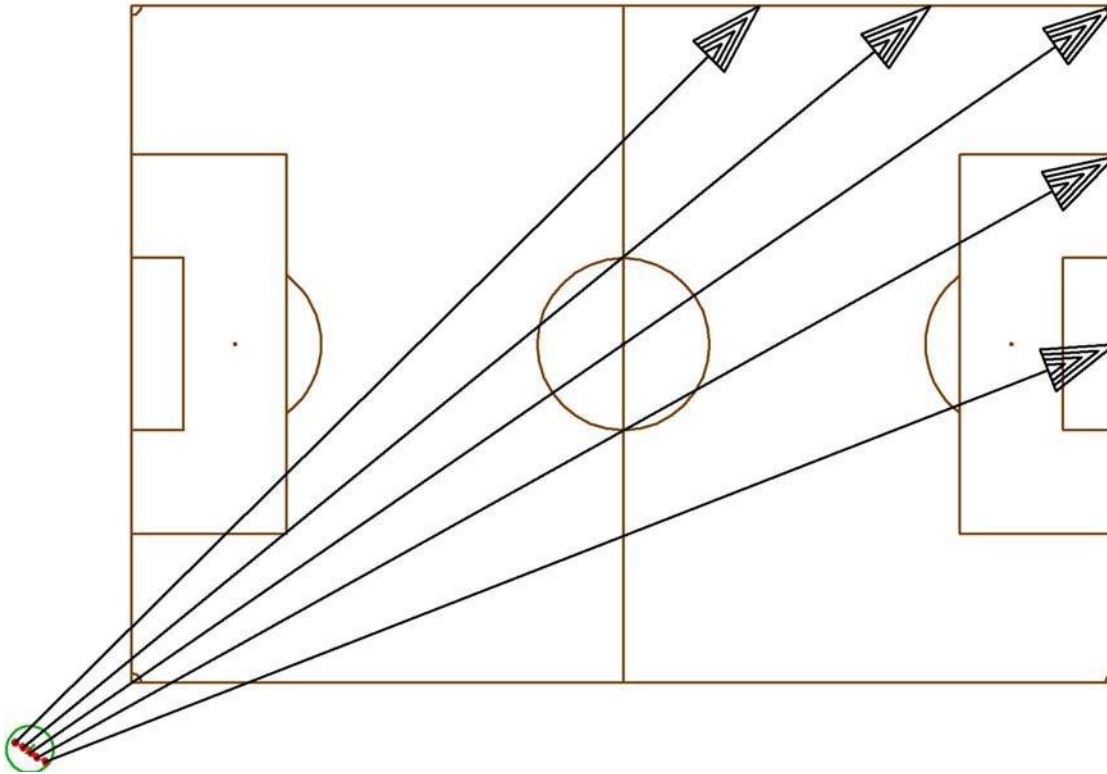
No.	Luminaire	Model	Wattage	Code	Degree	Aiming Points (m)			Angle °	Alignment
						X	Y	Z		
1	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	55.323	0.000	0.000	11.1	C 90, VT/GI Max
2	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	70.866	0.000	0.000	11.9	C 90, VT/GI Max
3	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	84.354	0.000	0.000	12.3	C 90, VT/GI Max
4	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	93.495	0.000	0.000	12.4	C 90, VT/GI Max

Olympic Football Stadium - Outdoor Scene / Pole "Mast" (2) Luminaires (Summary)

P2 (High Mast # 2); Position: (99.433 m, 80.724 m, 0.000 m) - Continued

No.	Luminaire	Model	Wattage	Code	Degree	Aiming Points (m)			Angle °	Alignment
						X	Y	Z		
5	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	103.229	0.000	0.000	12.5	C 90, VT/GI Max
6	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	55.323	0.000	0.000	11.8	C 90, VT/GI Max
7	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	70.866	0.000	0.000	12.5	C 90, VT/GI Max
8	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	84.354	0.000	0.000	13.0	C 90, VT/GI Max
9	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	93.495	0.000	0.000	13.1	C 90, VT/GI Max
10	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	103.229	0.000	0.000	13.1	C 90, VT/GI Max
11	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	55.323	0.000	0.000	12.4	C 90, VT/GI Max
12	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	70.866	0.000	0.000	13.2	C 90, VT/GI Max
13	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	84.354	0.000	0.000	13.6	C 90, VT/GI Max
14	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	93.495	0.000	0.000	13.8	C 90, VT/GI Max
15	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	103.229	0.000	0.000	13.8	C 90, VT/GI Max
16	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	55.323	0.000	0.000	12.9	C 90, VT/GI Max
17	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	70.866	0.000	0.000	13.7	C 90, VT/GI Max
18	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	84.354	0.000	0.000	14.2	C 90, VT/GI Max
19	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	93.495	0.000	0.000	14.4	C 90, VT/GI Max
20	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	103.229	0.000	0.000	14.4	C 90, VT/GI Max

Olympic Football Stadium - Outdoor Scene / Pole "Mast" (3) Luminaires (Summary)



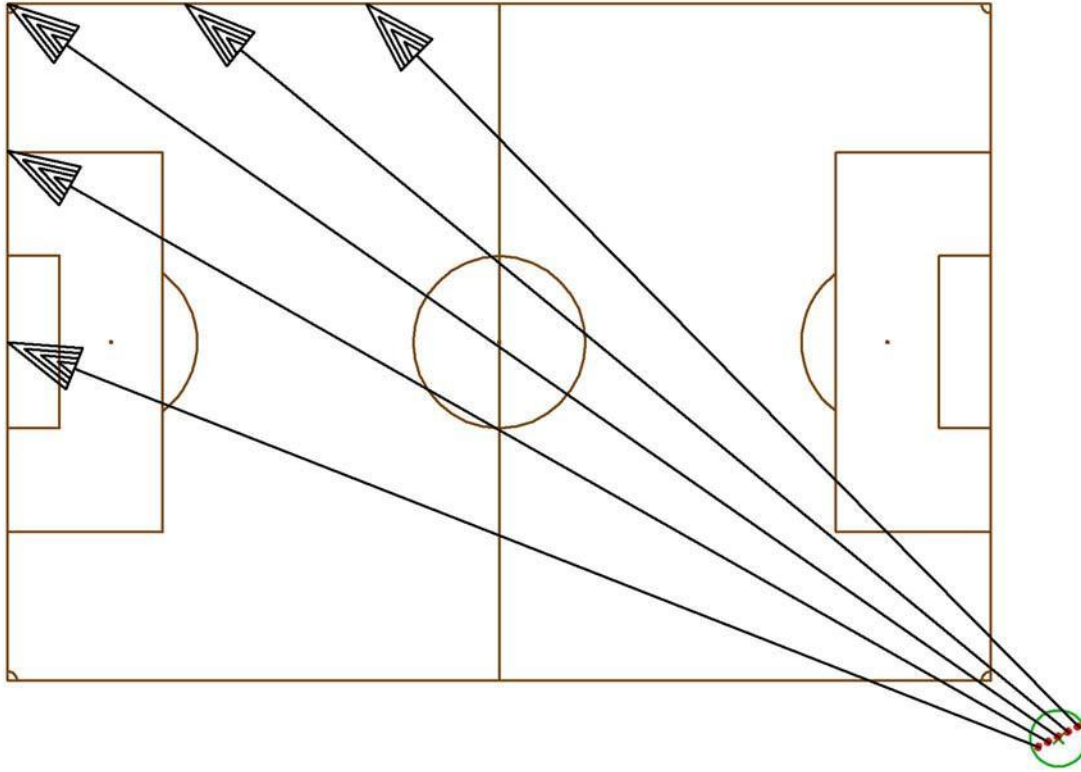
P3 (High Mast # 3); Position: (-10.823 m, -7.083 m, 0.000 m)										
No.	Luminaire	Model	Wattage	Code	Degree	Aiming Points (m)			Angle °	Alignment
						X	Y	Z		
1	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	35.980	0.000	8.4	C 90, VT/GI Max
2	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	55.936	0.000	7.8	C 90, VT/GI Max
3	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	71.960	0.000	7.3	C 90, VT/GI Max
4	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	84.993	71.960	0.000	8.2	C 90, VT/GI Max

. Olympic Football Stadium - Outdoor Scene / Pole "Mast" (3) Luminaires (Summary)

P3 (High Mast # 3); Position: (-10.823 m, -7.083 m, 0.000 m) - Continued

No.	Luminaire	Model	Wattage	Code	Degree	Aiming Points (m)			Angle °	Alignment
						X	Y	Z		
5	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	66.817	71.960	0.000	9.2	C 90, VT/GI Max
6	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	35.980	0.000	8.8	C 90, VT/GI Max
7	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	55.936	0.000	8.2	C 90, VT/GI Max
8	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	71.960	0.000	7.7	C 90, VT/GI Max
9	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	84.993	71.960	0.000	8.7	C 90, VT/GI Max
10	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	66.817	71.960	0.000	9.7	C 90, VT/GI Max
11	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	35.980	0.000	9.3	C 90, VT/GI Max
12	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	55.936	0.000	8.7	C 90, VT/GI Max
13	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	71.960	0.000	8.1	C 90, VT/GI Max
14	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	84.993	71.960	0.000	9.1	C 90, VT/GI Max
15	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	66.817	71.960	0.000	10.2	C 90, VT/GI Max
16	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	35.980	0.000	9.7	C 90, VT/GI Max
17	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	55.936	0.000	9.0	C 90, VT/GI Max
18	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	104.610	71.960	0.000	8.5	C 90, VT/GI Max
19	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	84.993	71.960	0.000	9.5	C 90, VT/GI Max
20	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	66.817	71.960	0.000	10.6	C 90, VT/GI Max

. Olympic Football Stadium - Outdoor Scene / Pole "Mast" (4) Luminaires (Summary)



P4 (High Mast # 4); Position: (111.792 m, -6.126 m, 0.000 m)										
No.	Luminaire	Model	Wattage	Code	Degree	Aiming Points (m)			Angle °	Alignment
						X	Y	Z		
1	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	35.984	0.000	8.4	C 90, VT/GI Max
2	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	56.355	0.000	8.0	C 90, VT/GI Max
3	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	71.960	0.000	7.5	C 90, VT/GI Max
4	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	18.895	71.960	0.000	8.4	C 90, VT/GI Max

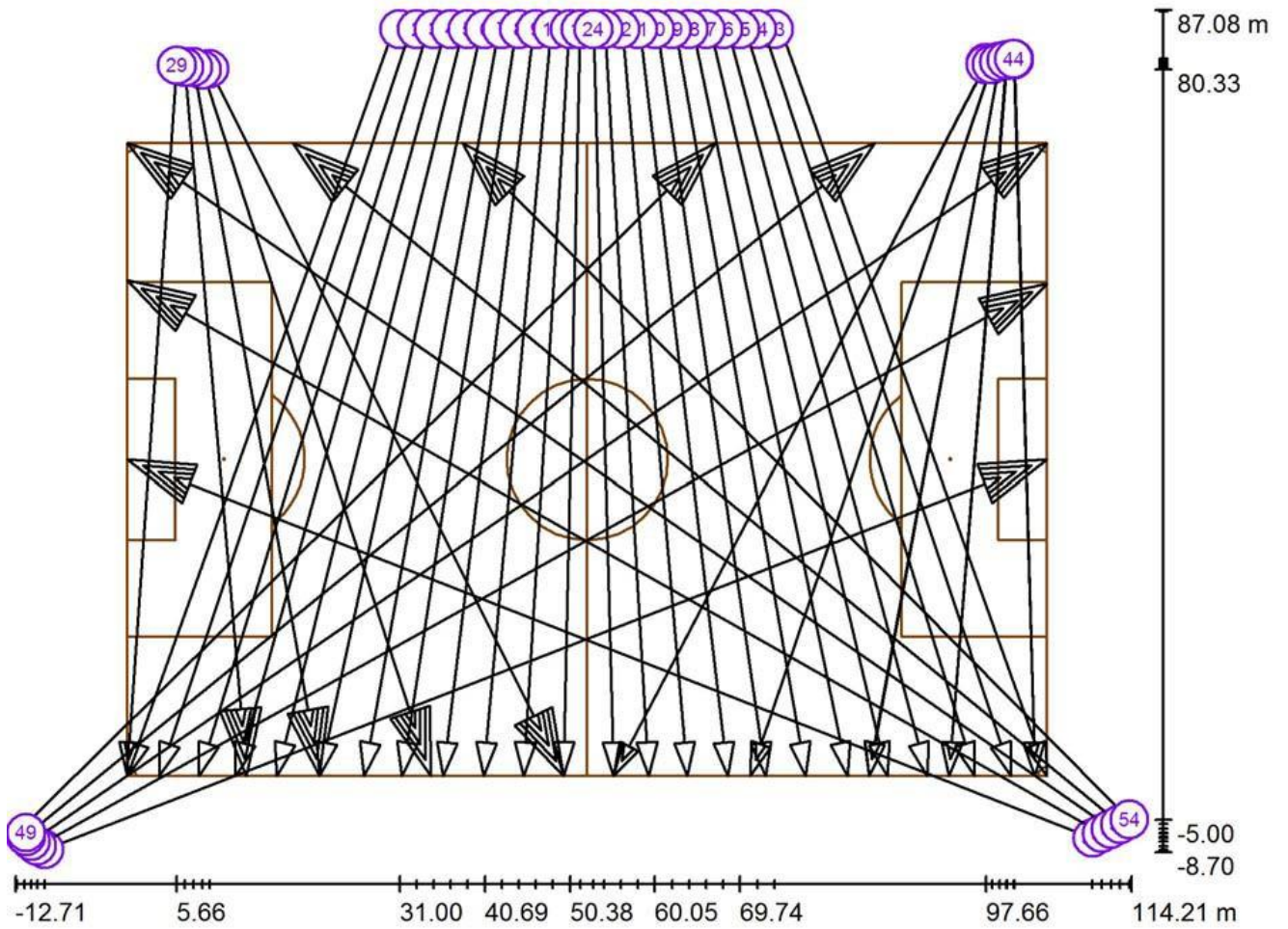
. Olympic Football Stadium - Outdoor Scene / Pole "Mast" (4) Luminaires (Summary)

P4 (High Mast # 4); Position: (111.792 m, -6.126 m, 0.000 m) - Continued

No.	Luminaire	Model	Wattage	Code	Degree	Aiming Points (m)			Angle °	Alignment
						X	Y	Z		
5	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	38.152	71.960	0.000	9.5	C 90, VT/GI Max
6	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	35.984	0.000	9.2	C 90, VT/GI Max
7	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	56.355	0.000	8.5	C 90, VT/GI Max
8	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	71.960	0.000	7.9	C 90, VT/GI Max
9	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	18.895	71.960	0.000	8.9	C 90, VT/GI Max
10	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	38.152	71.960	0.000	10.0	C 90, VT/GI Max
11	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	35.984	0.000	9.7	C 90, VT/GI Max
12	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	56.355	0.000	8.9	C 90, VT/GI Max
13	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	71.960	0.000	8.4	C 90, VT/GI Max
14	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	18.895	71.960	0.000	9.3	C 90, VT/GI Max
15	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	38.152	71.960	0.000	10.5	C 90, VT/GI Max
16	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	35.984	0.000	10.1	C 90, VT/GI Max
17	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	56.355	0.000	9.3	C 90, VT/GI Max
18	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	0.002	71.960	0.000	8.7	C 90, VT/GI Max
19	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	18.895	71.960	0.000	9.7	C 90, VT/GI Max
20	V-TAC LED LIGHTING	VT-47 LED	500W	VT-47500	60 Deg.	38.152	71.960	0.000	11.0	C 90, VT/GI Max



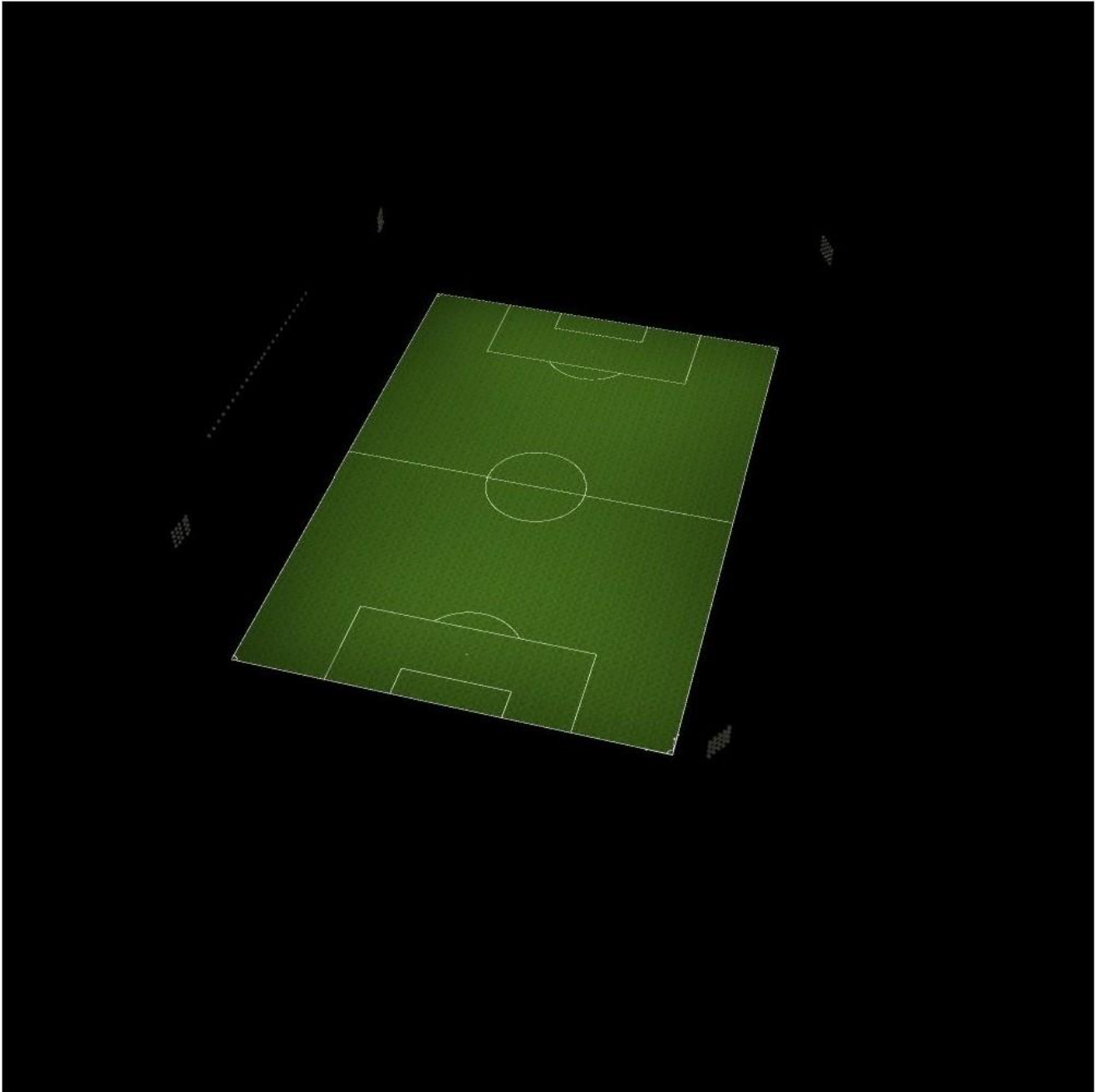
Olympic Football Stadium - Outdoor Scene / Sport Luminaires Layout



Scale 1 : 908

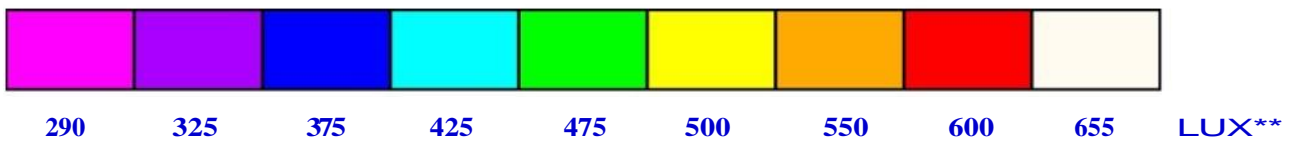
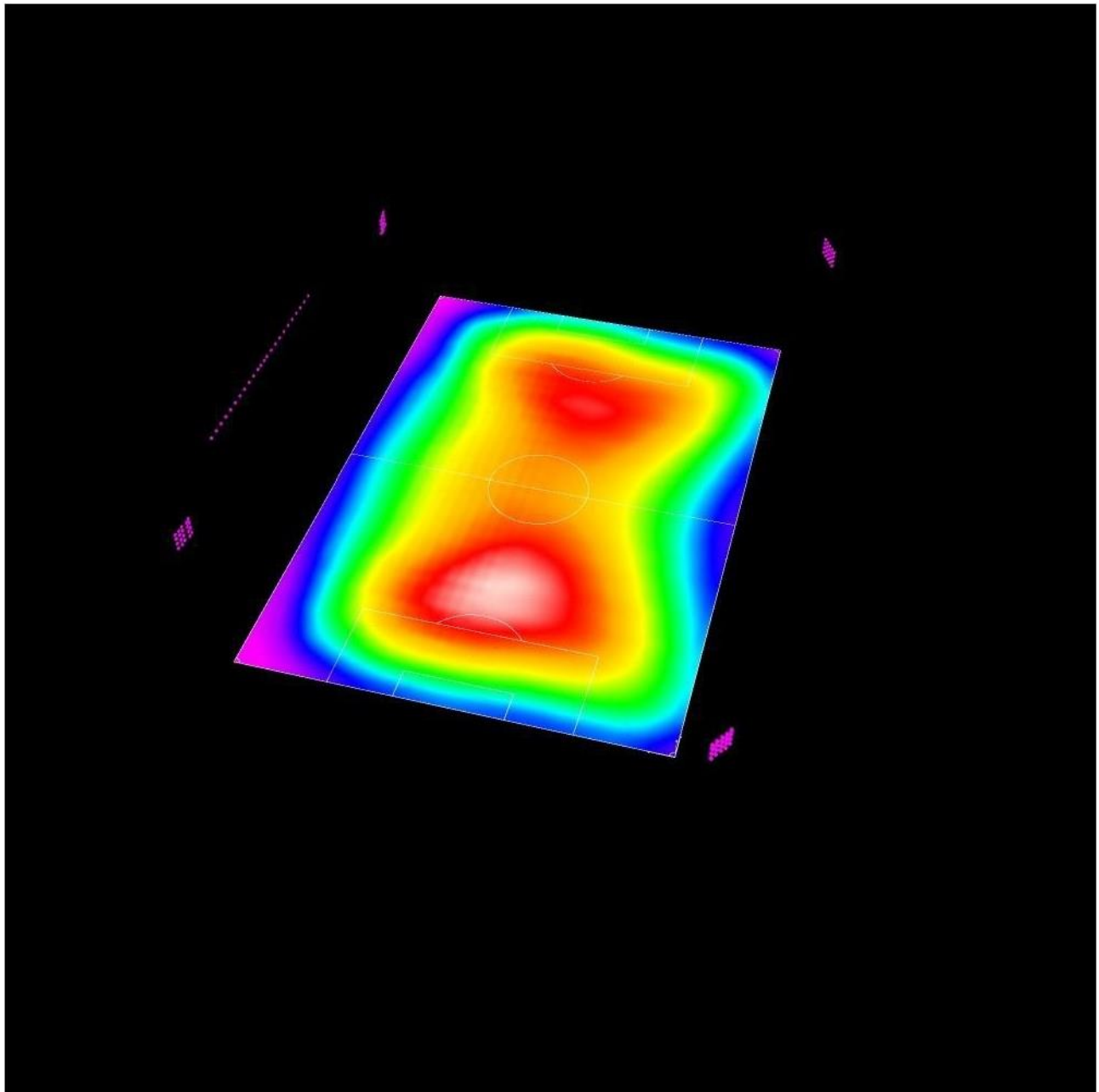


Olympic Football Stadium - Outdoor Scene /3D Rendering



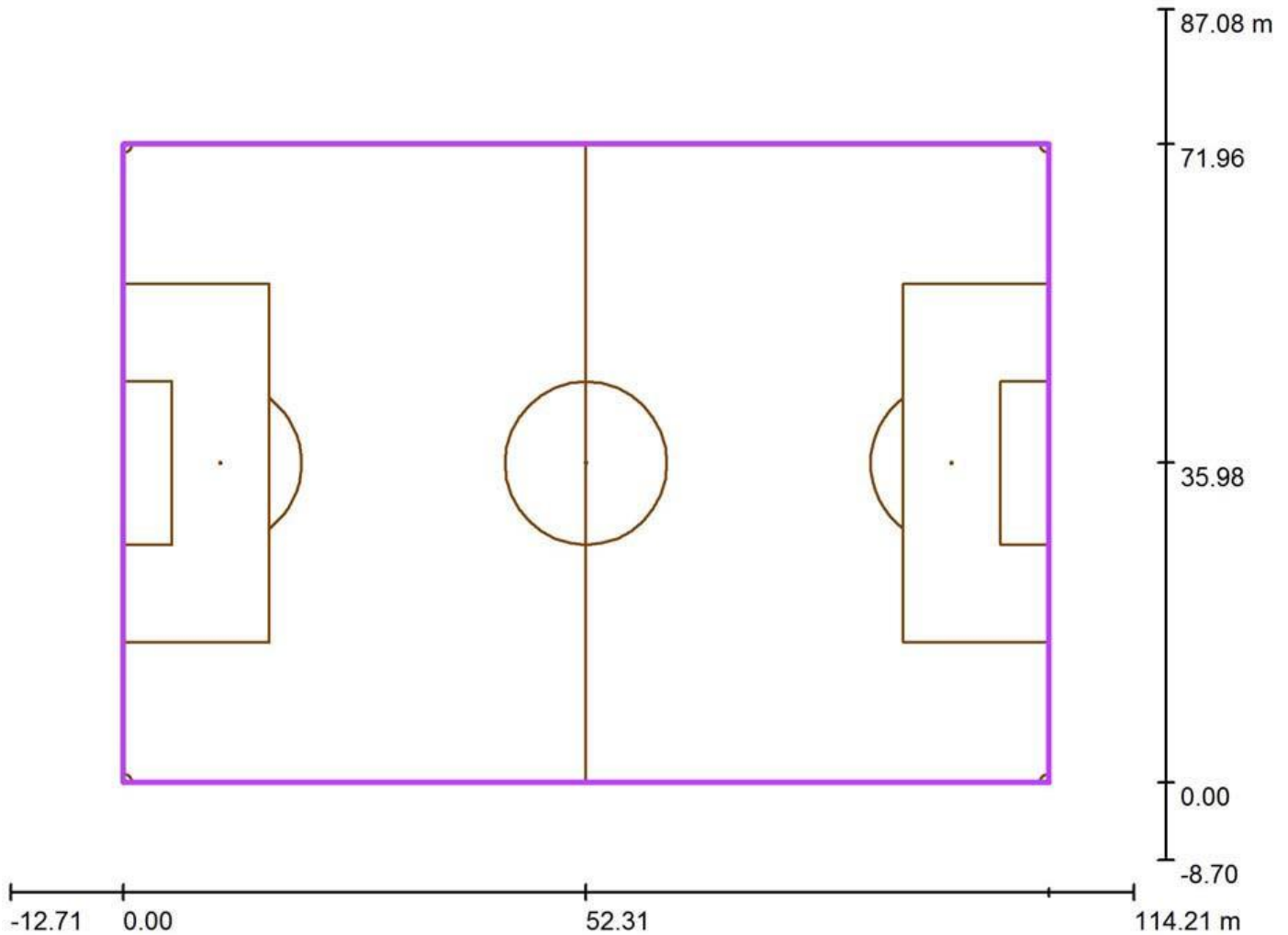


Olympic Football Stadium - Outdoor Scene I False Color Rendering
New LEDs (# 104 / 308Lux) + Existing LEDs (# 120 / 200Lux); AVG



** Above records taking into consideration the existing # 120 LEDs (30 Over each pole "mast") via Average, 200 Lux
Added New planned # 104 LEDs (20 Over each pole "mast" + 24 over main stand) via Average, 308 Lux

Olympic Football Stadium - Field Computing Grid (PA) / Summary
New LEDs (# 104 / 308Lux) + Existing LEDs (# 120 / 200Lux); AVG



Scale 1 : 914

Position: (52.307 m, 35.984 m, 0.000 m)
 Size: (104.610 m, 71.960 m)
 Rotation: (0.0°, 0.0°, 0.0°)
 Type: Normal, Grid: 21 x 15 Points
 Belongs to the following sport arena: Football Field

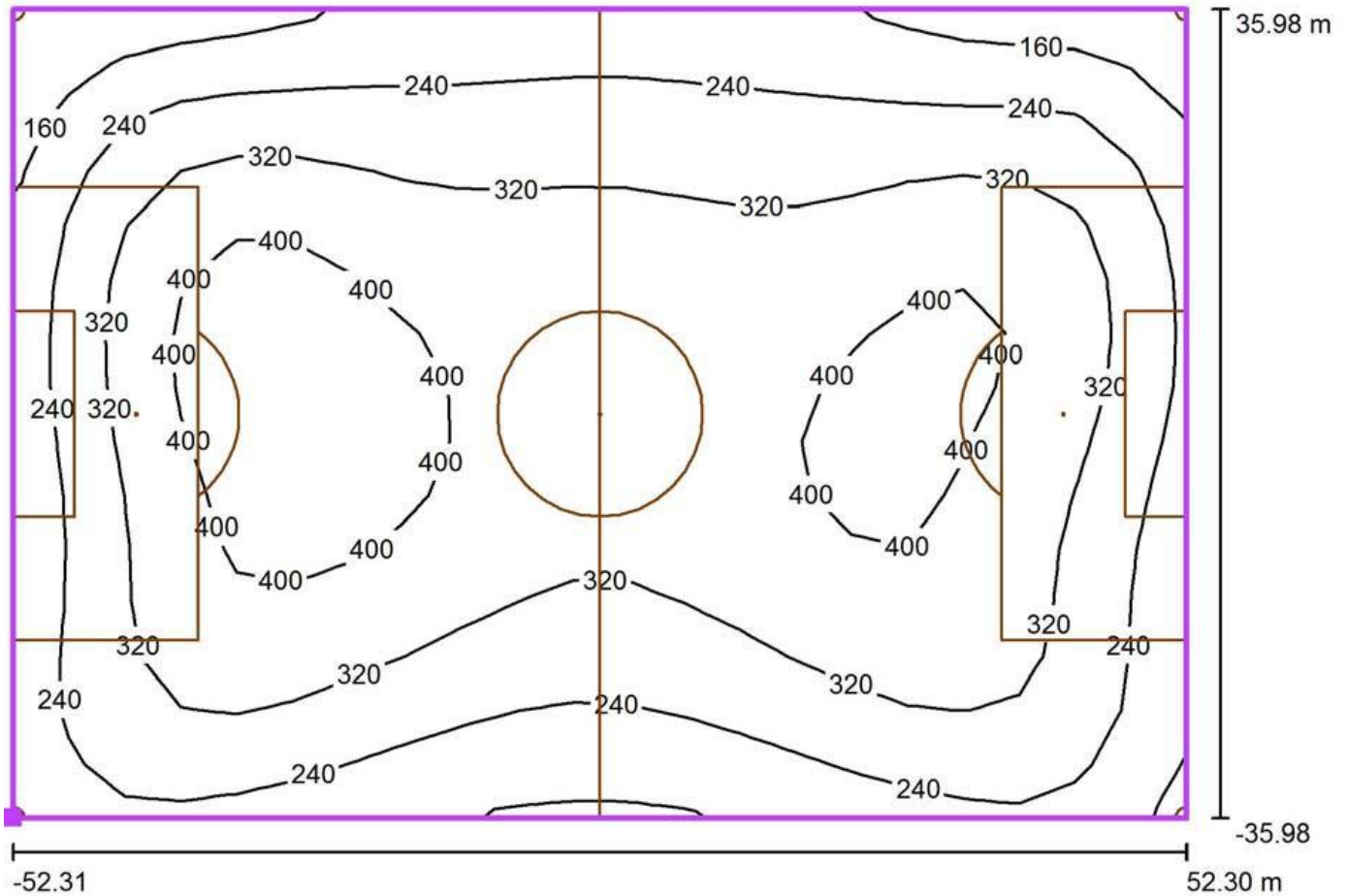
Results Overview **

No.	Type	E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	U0	E_{min} / E_{max}	$E_{h\ m} / E_m$	H [m]	Camera
1	Horizontal	508	290	655	0.57	0.44	/	1.000	/
2	Vertical, 0.0°	300	15	500	0.05	0.03	1.69	1.000	/

$E_{h\ m} / E_m$ = Relationship between middle horizontal and vertical illuminance,
 H = Measuring Height

** Above records taking into consideration the existing # 120 LEDs (30 Over each pole "mast") via Average, 200 Lux
 Added New planned # 104 LEDs (20 Over each pole "mast" + 24 over main stand) via Average, 308 Lux

Olympic Football Stadium - Field Computing Grid (PA) / ISO-Lines (E, Horizontal)
New LEDs Only (# 104 V-TAC 500W LEDs / 308Lux); AVG



Values in Lux, Scale 1 : 748

Position of Surface in External Scene:
 Marked Point: (0.002 m, 0.004 m, 0.000 m)



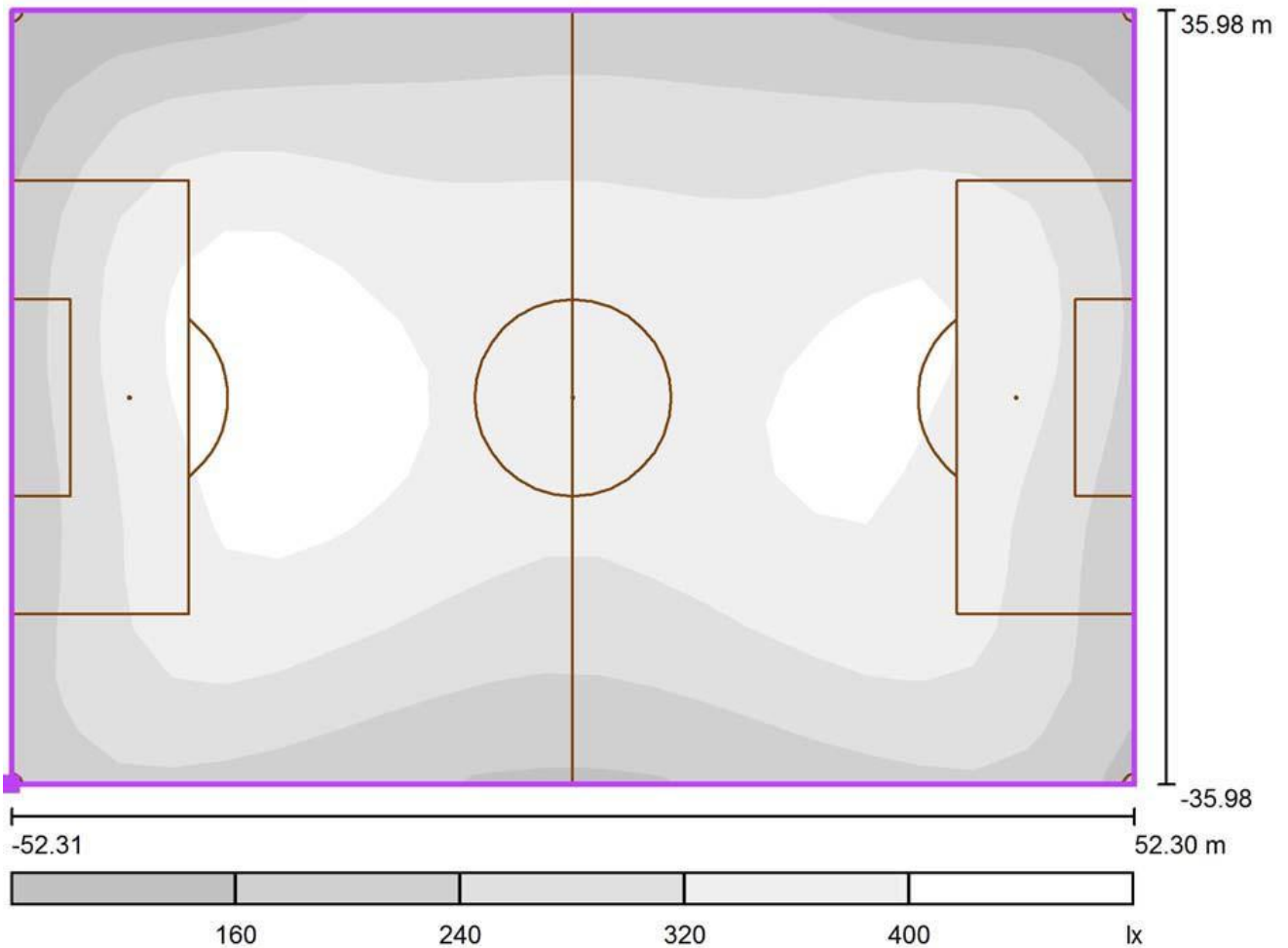
Grid: 21 x 15 Points **

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	U0	E_{min} / E_{max}
308	90	455	0.29	0.20

** Above records taking only the new planned # 104 LEDs V-TAC 500W,
 (20 Over each pole "mast" + 24 Over Main Stand); via Average illumination of 308 Lux



Olympic Football Stadium - Field Computing Grid (PA) / Grey-Scale (E, Horizontal)
New LEDs Only (# 104 V-TAC 500W LEDs / 308Lux); AVG



Scale 1 : 748

Position of Surface in External Scene:
 Marked Point: (0.002 m, 0.004 m, 0.000 m)



Grid: 21 x 15 Points **

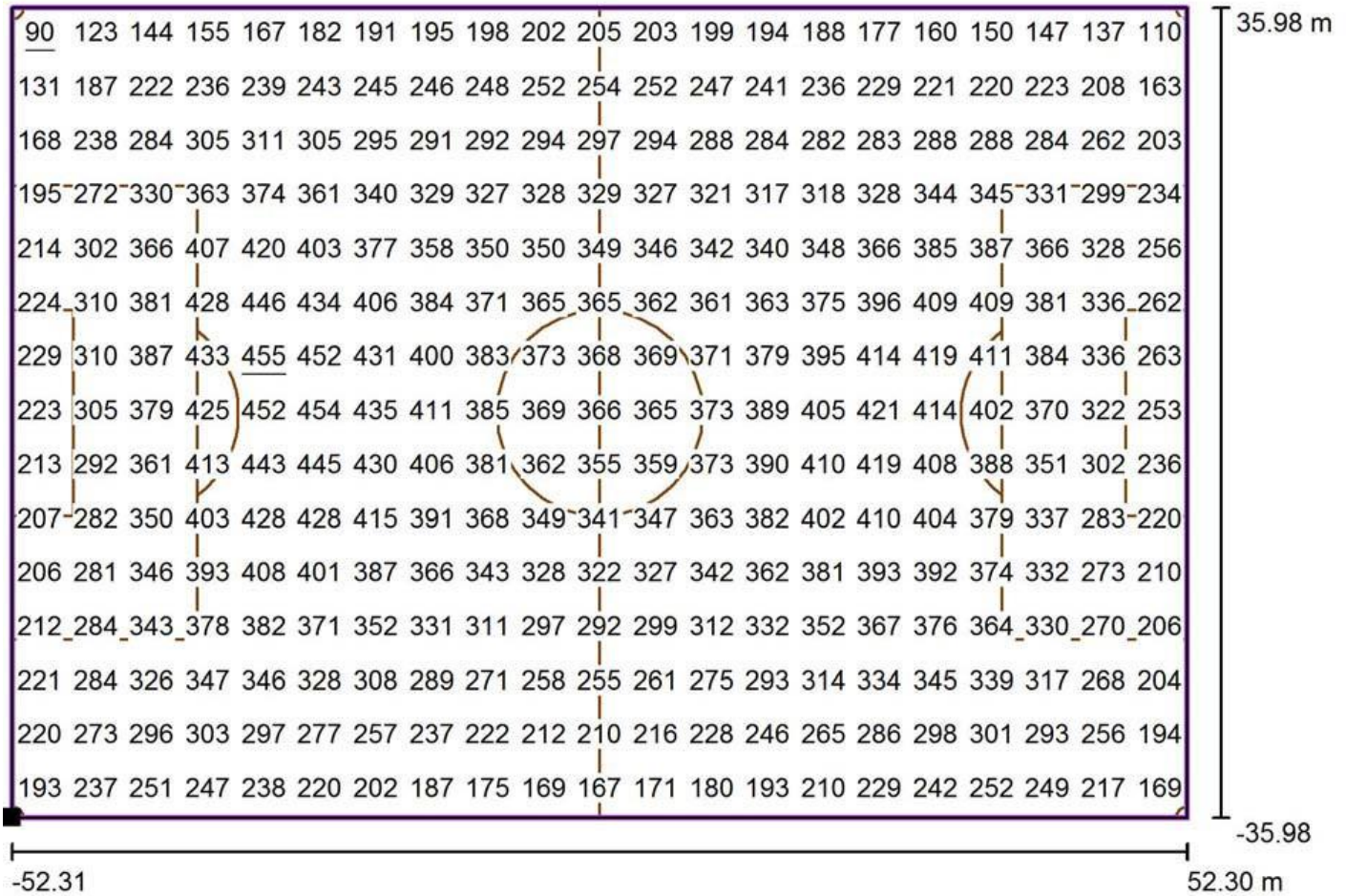
E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	U0	E_{min} / E_{max}
308	90	455	0.29	0.20

** Above records taking only the new planned # 104 LEDs V-TAC 500W,
 (20 Over each pole "mast" + 24 Over Main Stand); via Average illumination of 308 Lux



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Olympic Football Stadium - Field Computing Grid (PA) / Value Chart (E, Horizontal)
New LEDs Only (# 104 V-TAC 500W LEDs / 308Lux); AVG



Values in Lux, Scale 1 : 748

Position of Surface in External Scene:
 Marked Point: (0.002 m, 0.004 0.000 m)



Grid: 21 x 15 Points **

E_{av} [lx] 308	E_{min} [lx] 90	E_{max} [lx] 455	U0 0.29	E_{min} / E_{max} 0.20
-----------------------------	-----------------------------	------------------------------	-------------------	------------------------------------

** Above records taking only the new planned # 104 LEDs V-TAC 500W, (20 Over each pole "mast" + 24 Over Main Stand); via Average illumination of 308 L



HUBBELL

SpecWriter for Windows: Outdoor Estimator
Version: 4.0

Date : 03/09/2019

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Date : 03/09/2019

FOR:

Alex. Olympic Football Stadium - 500 LUX Light Level
LED Stadium Sports Lighting Fixtures - 400W LED

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HUBBELL "OUTDOOR ESTIMATOR"

FOR:

Alex. Olympic Football Stadium - 500 LUX Light Level

PHOTOMETRIC ID: HP05517S.IES
 CATALOG NUMBER: LED-400W-X2X
 LUMENS PER LAMP: 55000.
 LENGTH: 104.0 METERS
 WIDTH: 64.0 METERS
 AREA: 6656. SQ METERS
 AVG. MTG. HEIGHT: 18.0 METERS
 AVG. SETBACK FROM AREA: 15.0 METERS

FOLLOWING TABLE GIVES REQUIRED NUMBER OF LUMINAIRES FOR A GIVEN MAINTAINED ILLUMINATION (ALONG ROWS) AND FOR GIVEN LIGHT LOSS FACTORS (DOWN COLUMNS)

NOTE: ESTIMATES ARE BASED ON AVERAGE LAMP TILT FACTOR= 0.88

LUX	<--- LIGHT LOSS FACTORS --->								
	1.00	0.95	0.90	0.85	0.80	0.75	0.70	0.65	0.60
1000	312.9	329.4	347.7	368.1	391.1	417.2	447.0	481.4	521.5
750	234.7	247.0	260.7	276.1	293.3	312.9	335.2	361.0	391.1
500	156.4	164.7	173.8	184.1	195.6	208.6	223.5	240.7	260.7
400	125.2	131.7	139.1	147.2	156.4	166.9	178.8	192.5	208.6
300	93.9	98.8	104.3	110.4	117.3	125.2	134.1	144.4	156.4
200	62.6	65.9	69.5	73.6	78.2	83.4	89.4	96.3	104.3
100	31.3	32.9	34.8	36.8	39.1	41.7	44.7	48.1	52.1
50	15.6	16.5	17.4	18.4	19.6	20.9	22.3	24.1	26.1
40	12.5	13.2	13.9	14.7	15.6	16.7	17.9	19.3	20.9
30	9.4	9.9	10.4	11.0	11.7	12.5	13.4	14.4	15.6
20	6.3	6.6	7.0	7.4	7.8	8.3	8.9	9.6	10.4
10	3.1	3.3	3.5	3.7	3.9	4.2	4.5	4.8	5.2

Upgrade to 224 LED 500 LUX by Adding # 104 LED Each 400W 20 LED X 4 On Masts 24 LED On Stand

Existing 120 LED 250 LUX 30 LED X 4 On Masts

CAUTION !

THE ABOVE INFORMATION SHOULD BE USED FOR ESTIMATING PURPOSES ONLY. ACTUAL POINT-BY-POINT CALCULATIONS SHOULD BE USED FOR THE FINAL DESIGN.

شركة البدرى لإضاءة الملاعب الرياضية

إحدى شركات مجموعة البدرى للتنمية والاستثمار

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