

INTER OFFICE MEMO

ROWSONS MARKETING PRIVATE LIMITED

Product Manager

To :

M/s. SIGMA SEARCH LIGHTS LTD.,

CALCUTTA.

Our Ref. SIGMA/IM95/04 Date 21.6.2004

Your Ref. Date

Sub: Visit to M/s. Aro Granite Industries Ltd, Hoaur.

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We wish to inform you that the undersigned met Mr.R.Ravichandran, Manager - Maintenance on 17th June 2004 and conducted a demo of our products in their premises. Also detailed discussions were held with Mr.T.Sivabathasekaran, Works Manager.

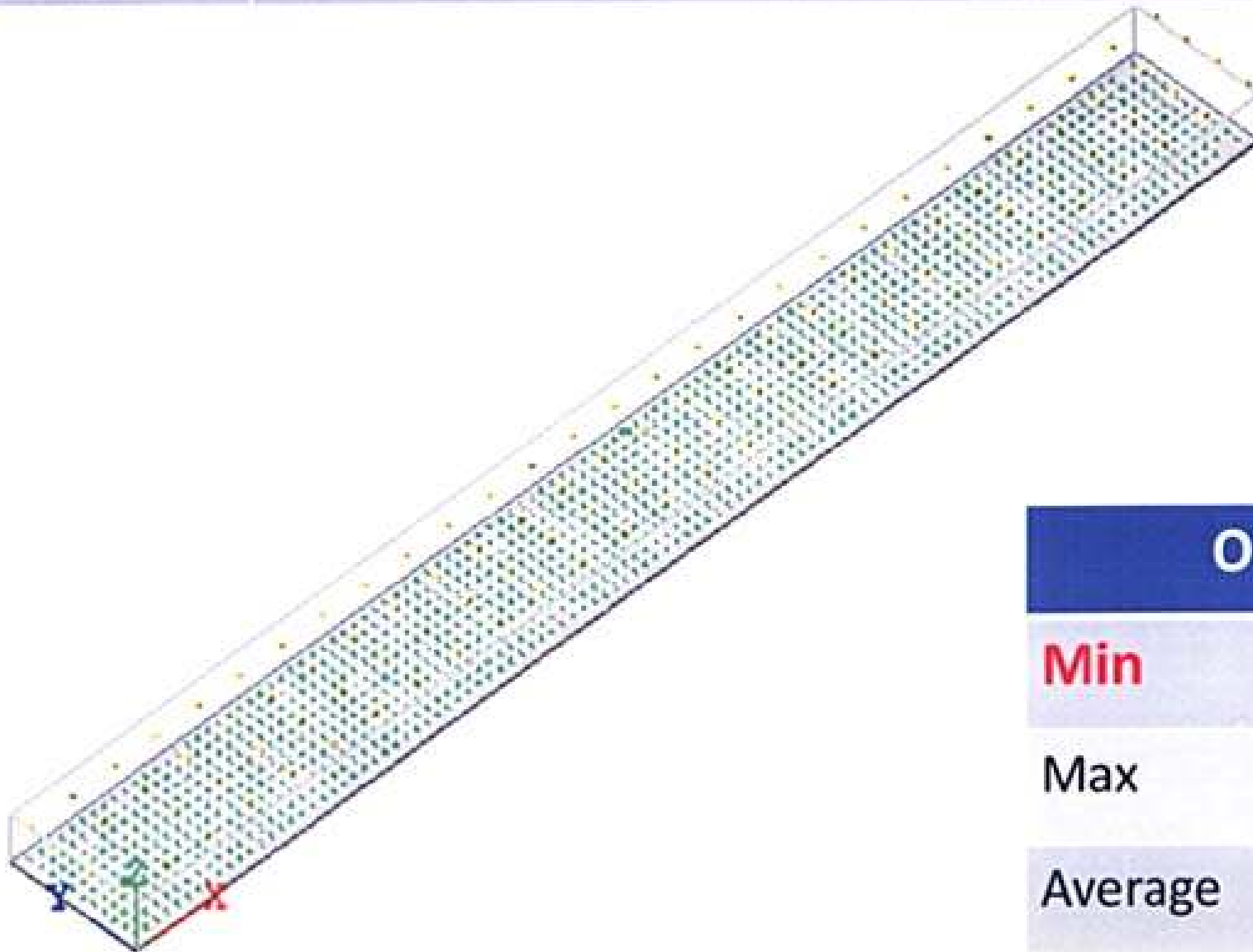
They are presently expanding their unit-II Granite processing plant. The shop

They have worked illumination data based on the package provided by Crompton Greaves (Aluminium anodized fittings). They have worked out a total of 220 Nos. of 250 W Metal Halide High Bay fittings. 28 Nos. of 250 W Metal Halide middle Bay fittings.

The average lux requirement is between 220 and 250 lux. We now have to provide them with an alternative illumination design using stainless steel fittings and suggest to them whether they have to fit 250 W Metal Halide (or) with less specification.

Workshop – 216 m (L) x 24m (W) x 8 m (H)

Lights **112 nos** of 250 W Sigma Bay Lights



Output

Min **200 lux**

Max 309 lux

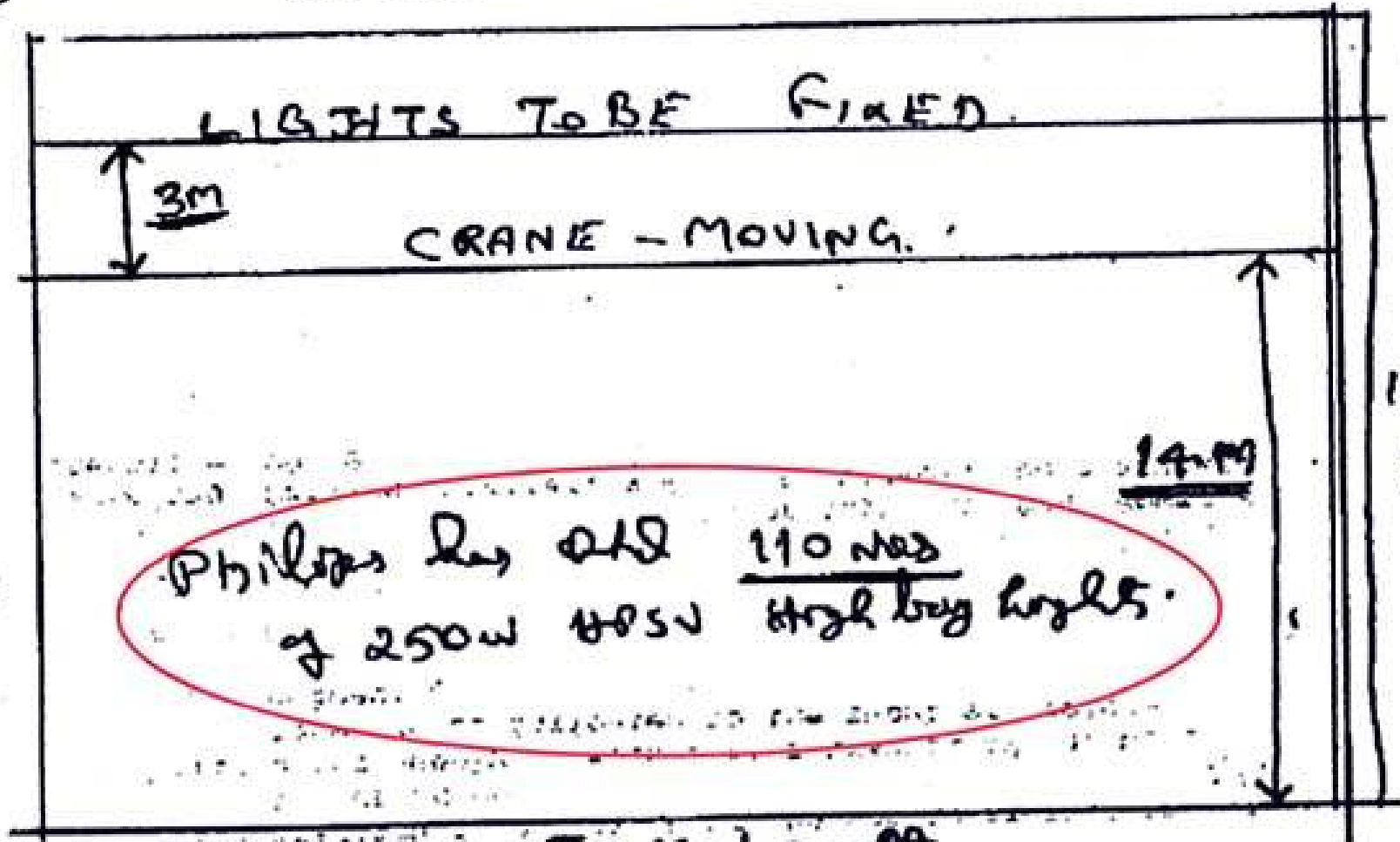
Average 251 lux

Workshop – 216 m (L) x 24m (W) x 8 m (H)

	With Standard Bay Lights	With Sigma Bay Lights
Wattage of Lights	250 W	250W
Watt Loss	29 W	29 W
Total Wattage	279 W	279 W
No. of Lights	248 nos	112 nos
Total Energy Consumption	248 x 279W = 69.2 KW	112 x 279W = 31.2KW
Total Energy Saved	38 KW per hr	
Saving in Rupees	38 KW x 10 hrs x 365 days x Rs.7 per unit = Rs.9,70,900.00 per year + cost of 136 extra fittings	

STEEL MELTING SHOP.

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Philips has old 110 nos
of 250w HPSV High bay lights.

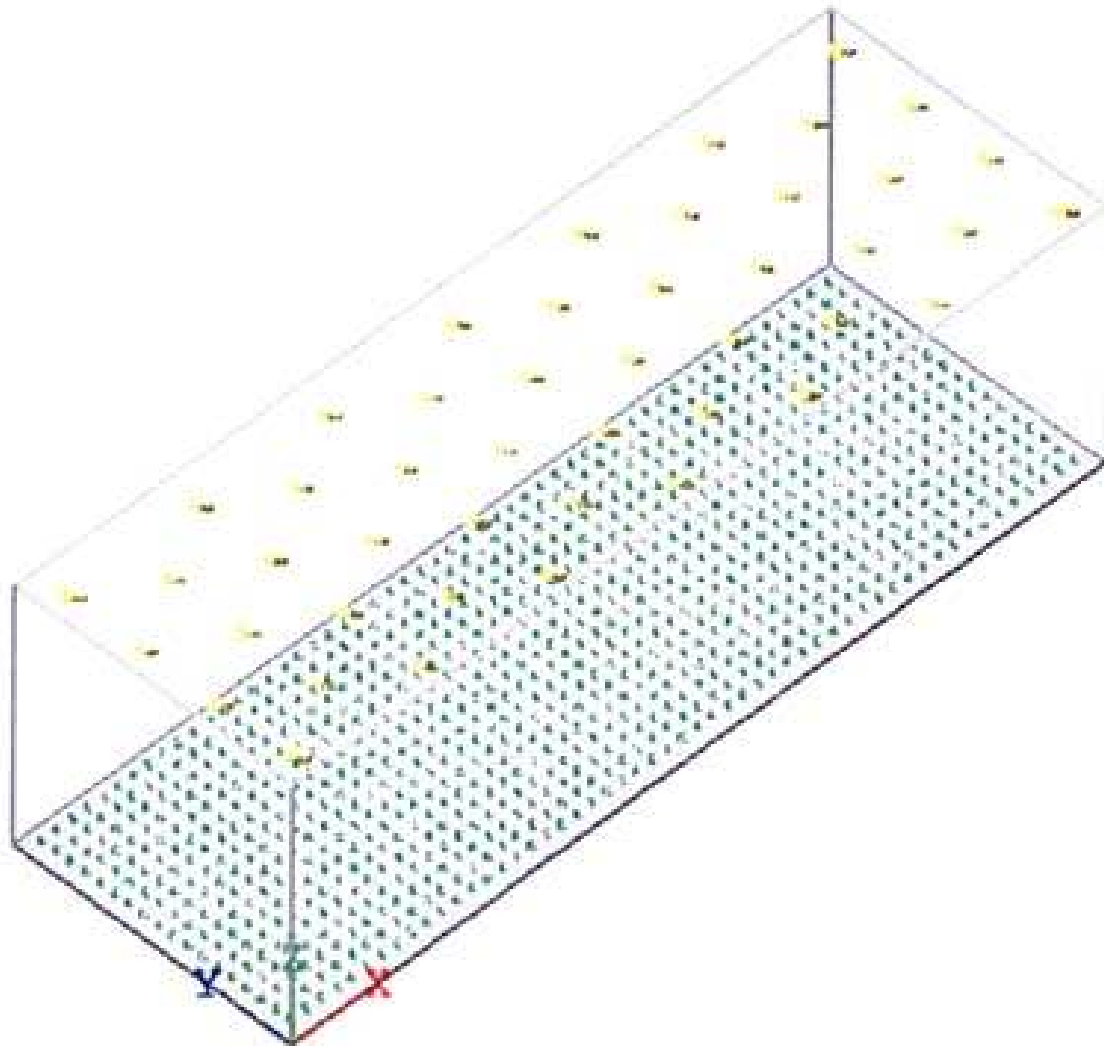
54 M Length
18.5 M Width

17.2 M Height:

At. In Distance

Workshop – 54 m (L) x 18.5 m (W) x 17.2 m (H)

Lights **42 nos** of 150 W Sigma Bay Lights
4 nos of 250 W Sigma Bay Lights



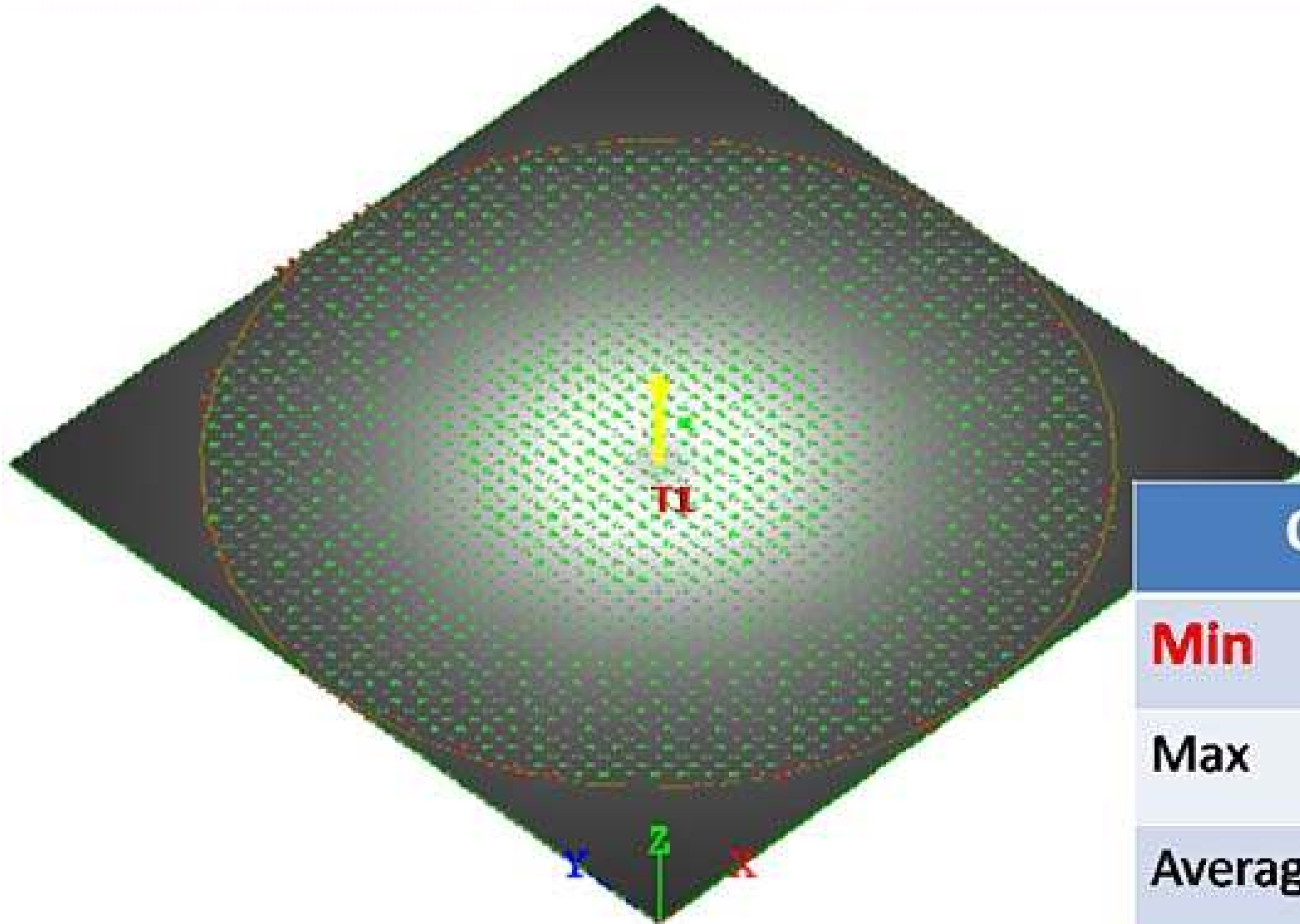
Output	
Min	190 lux
Max	293 lux
Average	253 lux

Workshop – 54 m (L) x 18.5 m (W) x 17.2 m (H)

	With Standard Bay Lights	With Sigma Bay Lights
Wattage of Lights	250 W	150W & 250W
Watt Loss	29 W	150W - 20 W 250W - 29W
Total Wattage	279 W	170W , 279W
No. of Lights	110 nos	150W – 42 nos + 250W – 4 nos
Total Energy Consumption	110 x 279W=30.69 KW	42 x 170W + 4 x 279W = 8.25 KW
Total Energy Saved		22.44 KW per hr
Saving in Rupees		22.44 KW x 10 hrs x 365 days x Rs.7 per unit = Rs.5,73,342.00 per year + cost of 64 extra fittings

Area – 250 mtr dia

Tower	30 meter	Lights	12 nos of 2 x 400 W Standard Flood Lights
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Output	
Min	0.88 lux
Max	29 lux
Average	5.5 lux

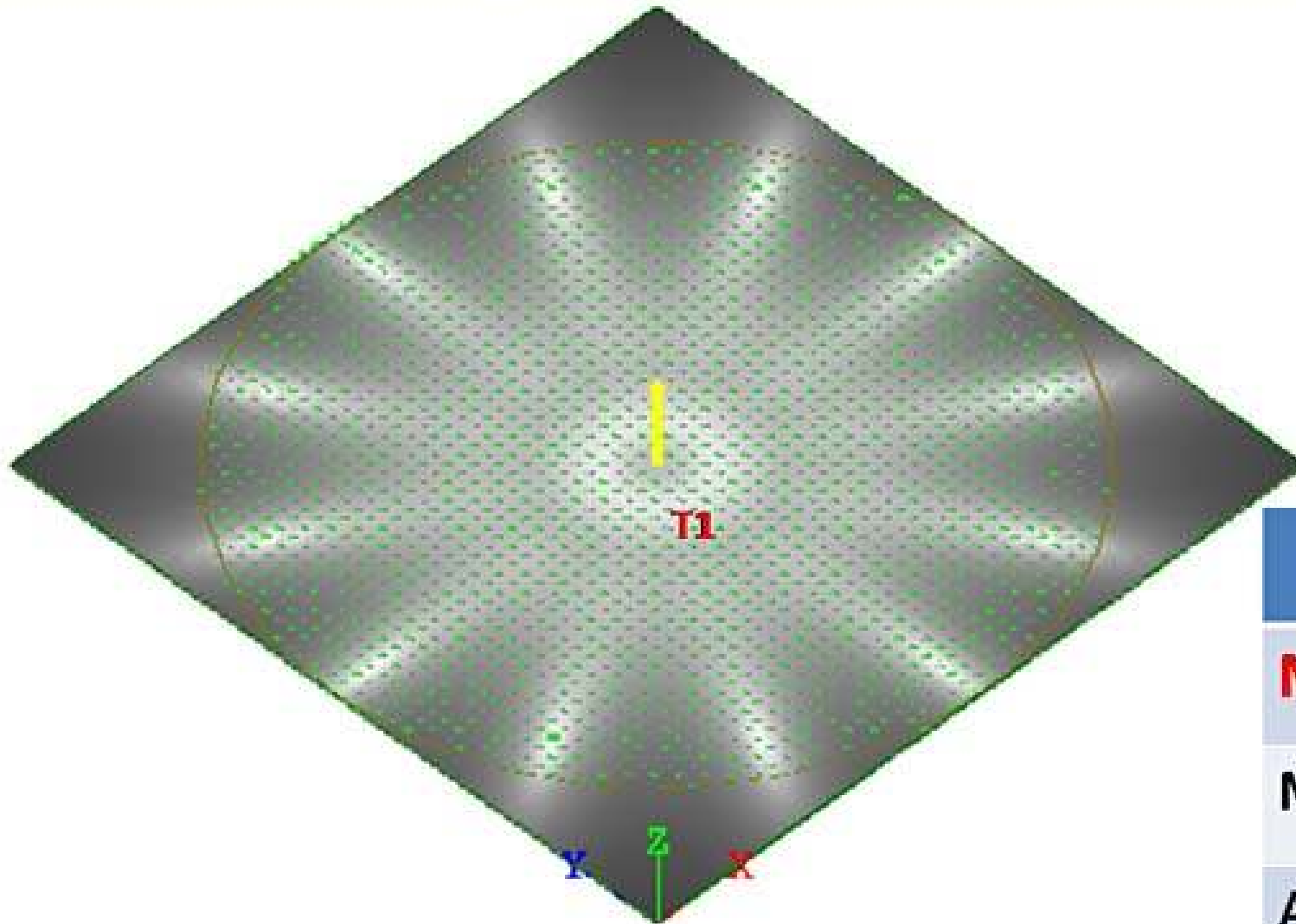
Area – 250 mtr dia

Tower

30 meter

Lights

12 nos of **1 x 400 W Sigma**
Flood Lights



Output

Min **1 lux**

Max **12 lux**

Average **3.9 lux**

Area - 250 mtr dia

	Standard Method With 2 x 400W Lights	Sigma Method With 1 x 400 W Lights
Wattage of Lights	2 x 400W = 800W	1 x 400W = 400W
Watt Loss	2 x 40W = 80W	1 x 40W = 40W
Total Wattage	880W	440W
No. of Lights	12	12
Total Energy Consumption	12 x 880 = 10.56 KW	12 x 440W = 5.28 KW
Total Energy Saved per mast per hour		5.28 KW
Saving in Rupees	5.28 KW x 10 hrs x 365 days x Rs.7 per unit = Rs.1,34,904.00 per year	

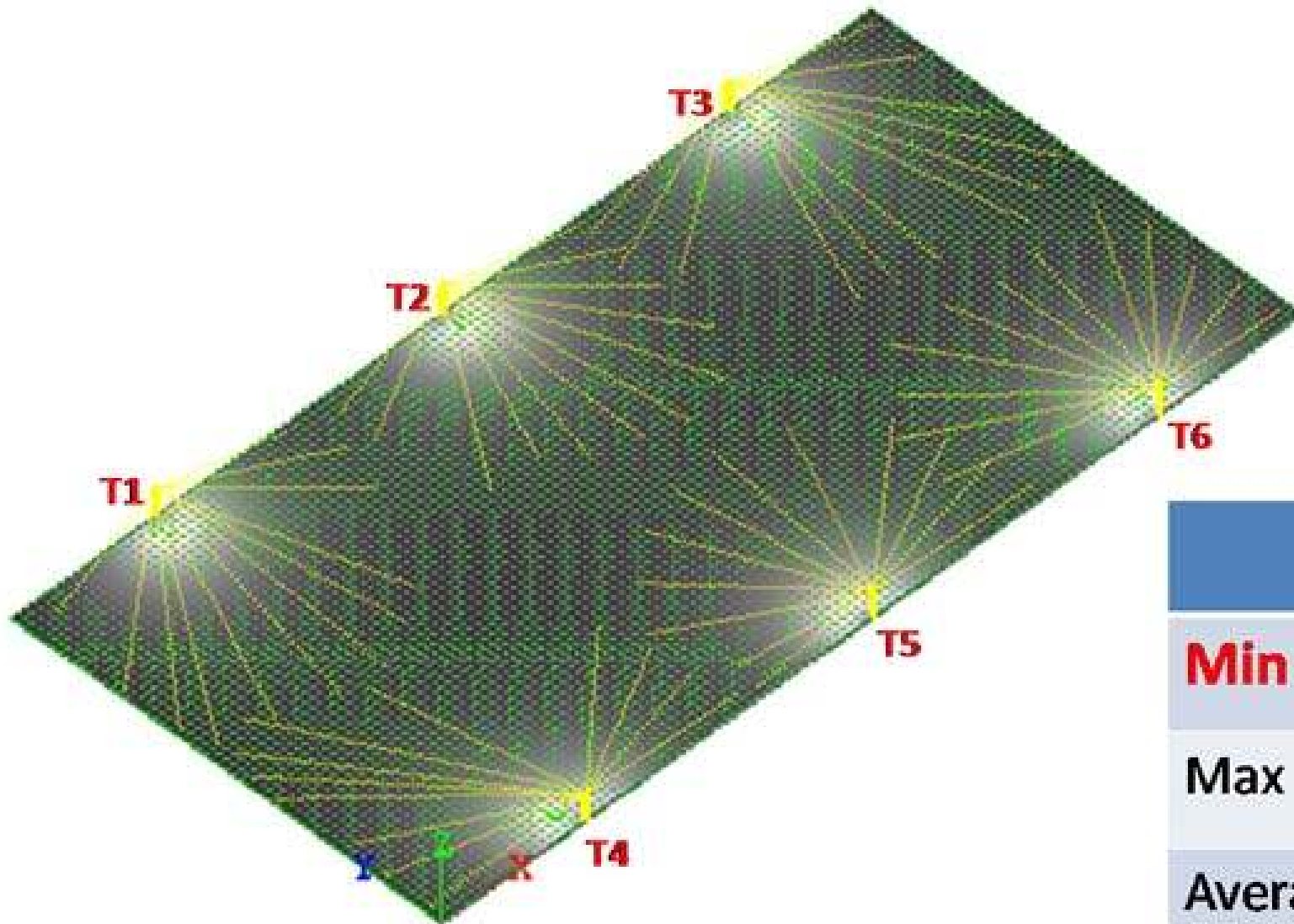
Uniformity of Illumination in case of Sigma proposal is far better than that with standard fittings.

Standard Fittings – 1:6:5

Sigma – 1:4:3

Area – 600 mtr x 300 mtr

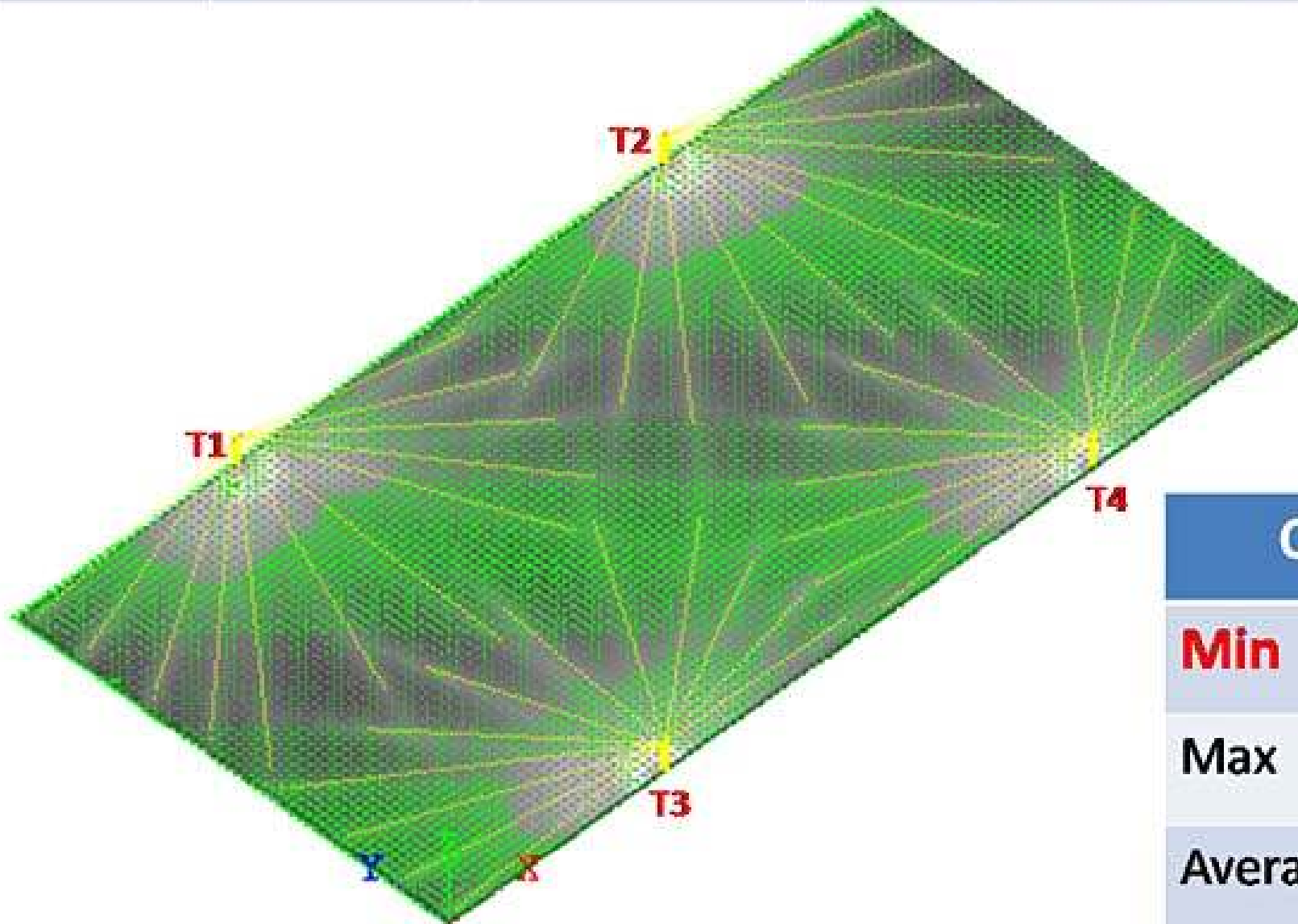
Tower	6 nos of 20 meter	Lights	12 nos of 2 x 400 W Standard Flood Lights on each tower
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Output	
Min	1 lux
Max	118 lux
Average	8.4 lux

Area - 600 mtr x 300 mtr

Tower	4 nos of 20 meter	Lights	12 nos of 1 x 400 W Sigma Flood Lights on each tower
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Output	
Min	1 lux
Max	28 lux
Average	4.1 lux

Area - 600 mtr x 300 mtr

	Standard Method With 2 x 400W Lights	Sigma Method With 1 x 400 W Lights
Wattage of Lights	2 x 400W = 800W	1 x 400W = 400W
Watt Loss	2 x 40W = 80W	1 x 40W = 40W
Total Wattage	880W	440W
No. of Lights	12 x 6 towers = 72 nos	12 x 4 towers = 48 nos
Total Energy Consumption	72 x 880W = 63.3 KW	48 x 440W = 21.1 KW
Total Energy Saved	42.3 KW per hr	
Saving in Rupees	42.3 KW x 10 hrs x 365 days x Rs.7 per unit = Rs.10,80,765.00 per year + cost of 2 additional 20 mtr masts	

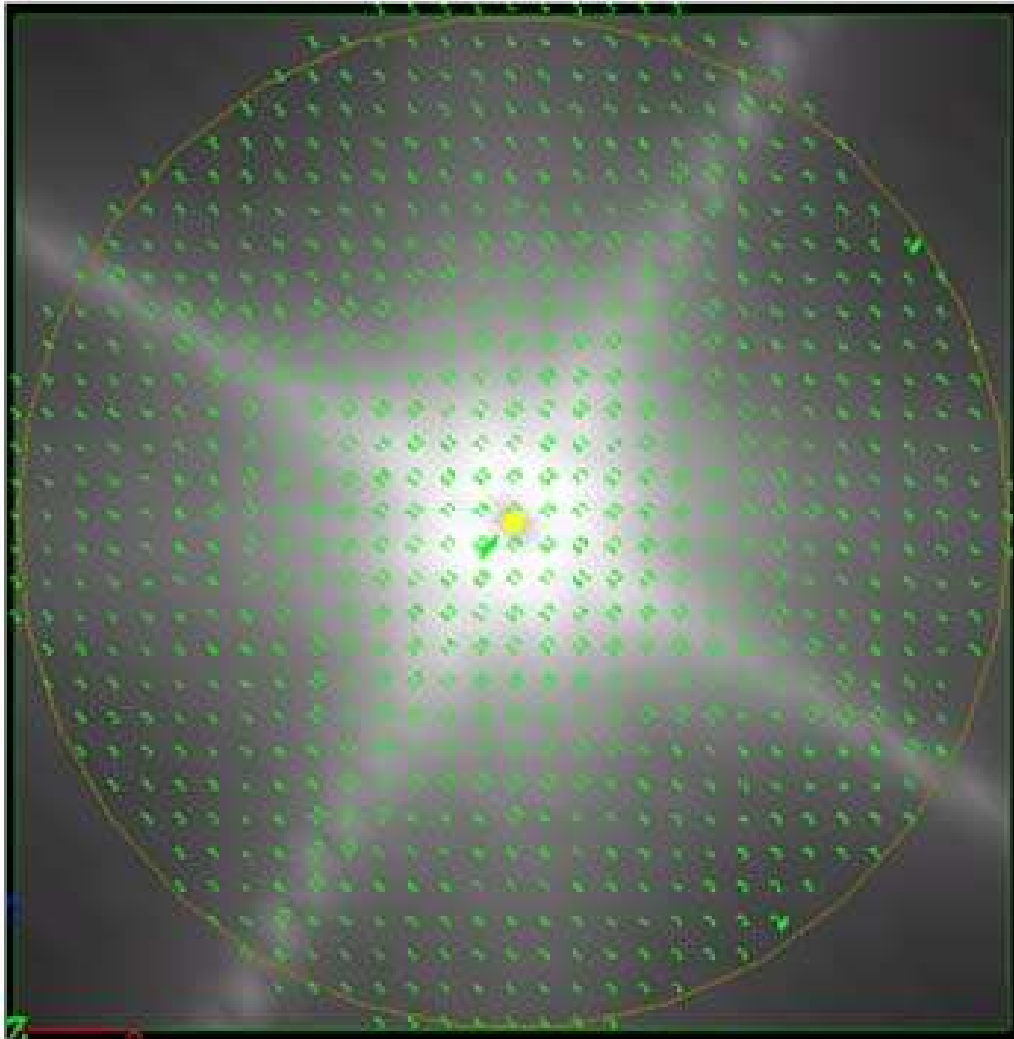
Uniformity of Illumination in case of Sigma proposal is far better than that with standard fittings.

Standard Fittings – 1:8:14

Sigma – 1:4:7

Area – 150 mtr dia

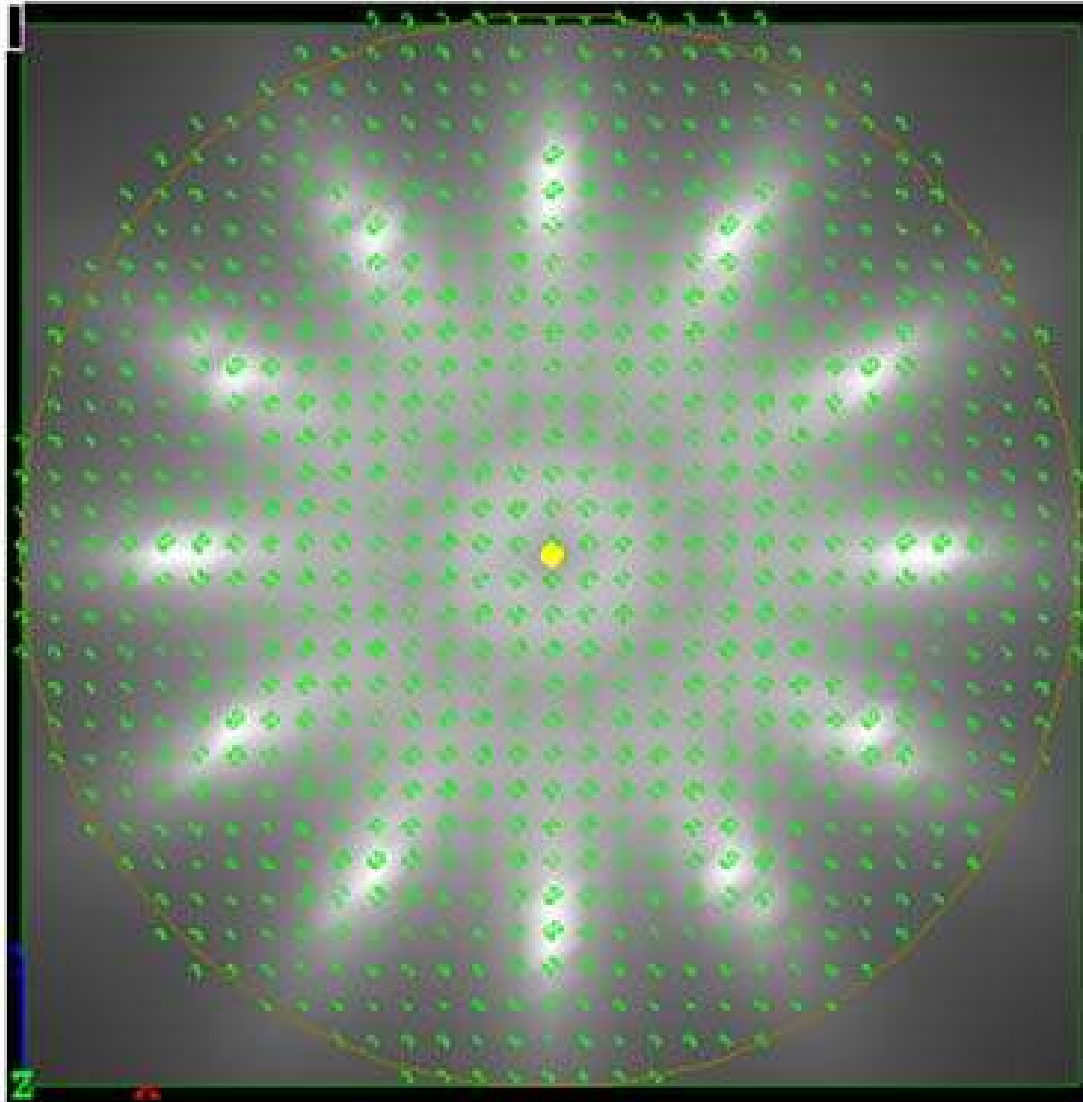
Tower	21 meter	Lights	1000W (long Range) – 4 nos 2 x 400W (Wide Spread) – 4 nos 400W - (Long Range) - 4 nos
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Output	
Min	2 lux
Max	92 lux
Average	13lux

Area – 150 mtr dia

Tower	21 meter	Lights	400W - (Long Range) - 12 nos
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Output

Min	2 lux
Max	60 lux
Average	13 lux

Area - 150 mtr dia

	Standard Method With 1000W / 2 x 400W / 400W Lights	Sigma Method With 1 x 400 W Lights
Wattage of Lights	1000W , 2 x 400W & 400W	400W
Watt Loss	70W, 80W & 40W	40W
Total Wattage	1070W, 880W & 440W	440W
No. of Lights	1000W - 4 nos + 2x400W - 4 nos + 400W - 4 nos	12 nos
Total Energy Consumption	1070W x 4 + 880 x 4 + 440W x 4 = 9.6 KW	440W x 12 = 5.28 KW
Total Energy Saved per mast per hour		4.32 KW
Saving in Rupees		4.32 KW x 10 hrs x 365 days x Rs.7 per unit = Rs.1,10,376.00 per year

**Uniformity of Illumination in case of Sigma proposal is
far better than that with standard fittings.**

Standard Fittings – 1:6:7

Sigma – 1:6:5

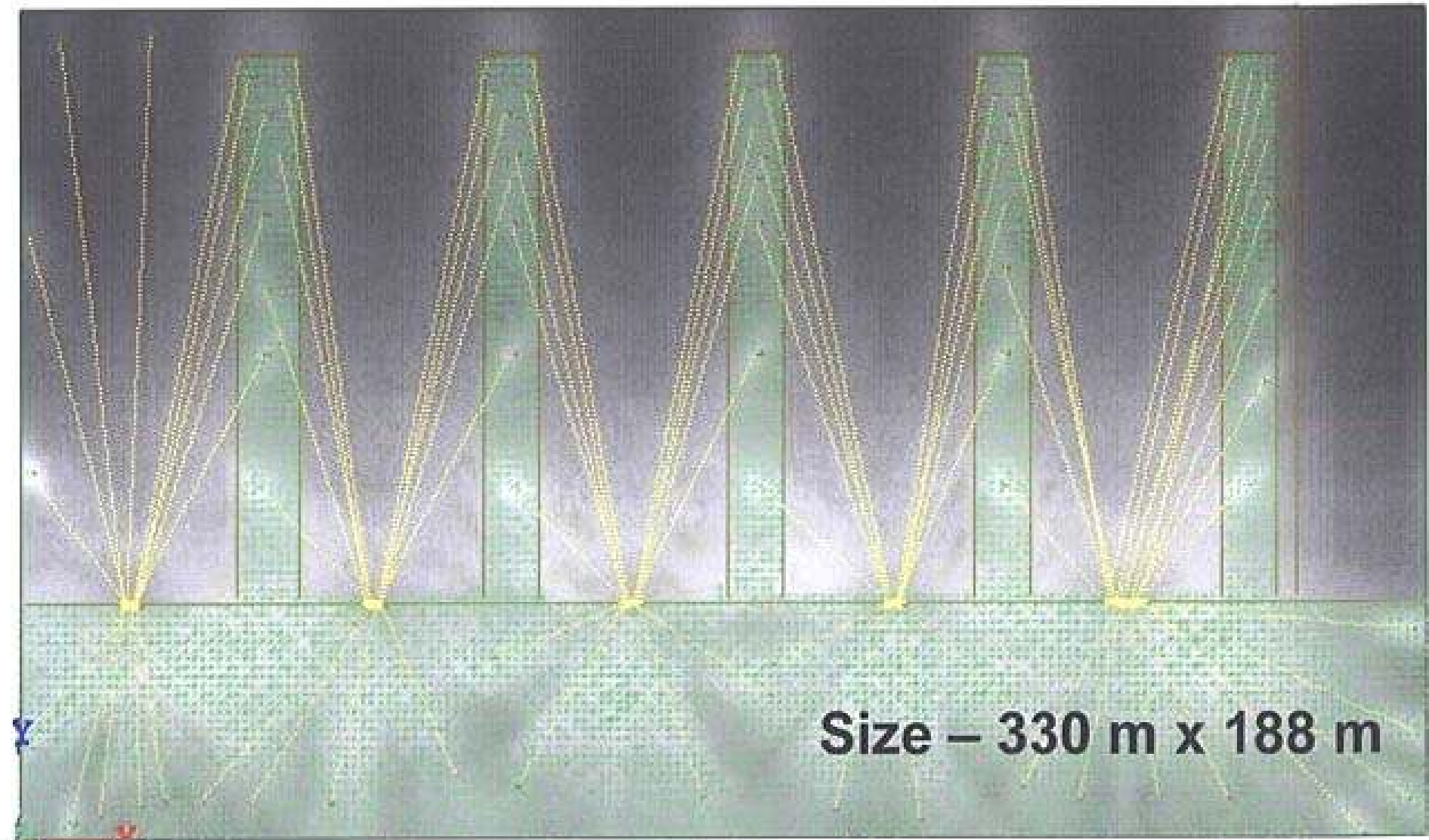
Illumination of Jetty & Waterfront

SI No.	Luminaries	Luminaries Proposed to be used	Luminaires used as per our Design
1	400 W Fittings	16	53
2	2 x 400 W Fittings	53	20
3	1000 W Fittings	10	5
	Total	79	78
	Total Energy	58.8 KW	42.2 KW

which is a saving of 16.6 KW

Illumination of Jetty

Minimum requirement of 25 lux



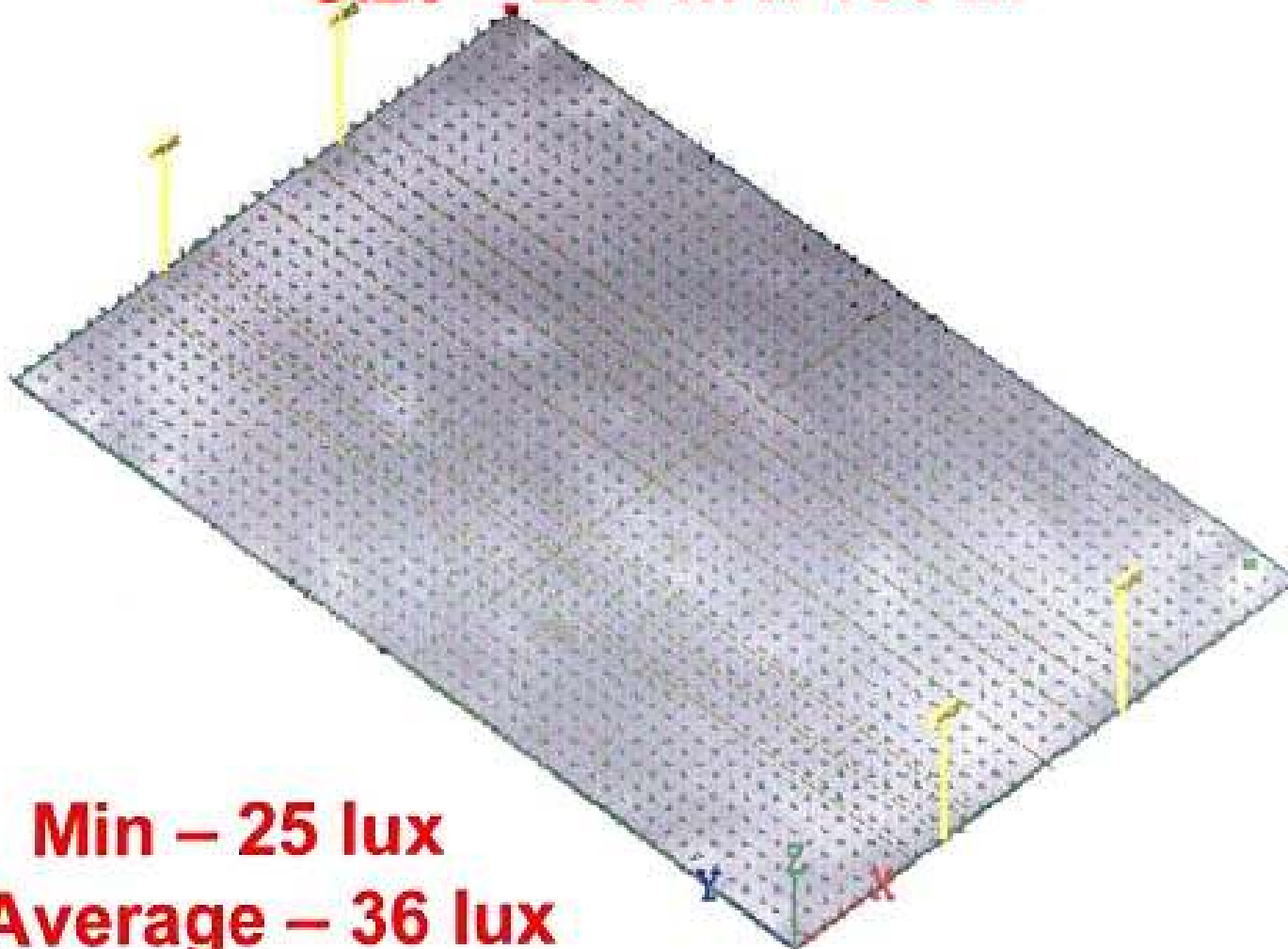
Min – 25 lux

Average – 58 lux

Illumination of Container Yard

Minimum requirement of 25 lux

Size – 250 m x 160 m



Min – 25 lux

Average – 36 lux

**Luminaries used are only 8.8 KW / tower against
24 KW / tower proposed by the party**