

UPPER OBSERVATION POINT
LIGHTING CALCULATION

KARAK TOURISM DEVELOPMENT PROJECT

UPPER OBSERVATION POINT-STORE

Date: 12-07-2000
Customer: THE MINISTRY OF TOURISM AND ANTIQUITIES
Customer Representative: THE MINISTRY OF PLANNING
Designer: S.M

The nominal values shown in this report are the result of precision calculations, based upon precisely positioned luminaires in a fixed relationship to each other and to the area under examination. In practice the values may vary due to tolerances on luminaires, luminaire positioning, reflection properties and electrical supply.

CONSOLIDATED CONSULTANTS
AMMAN-JORDAN

Telephone: 4612377

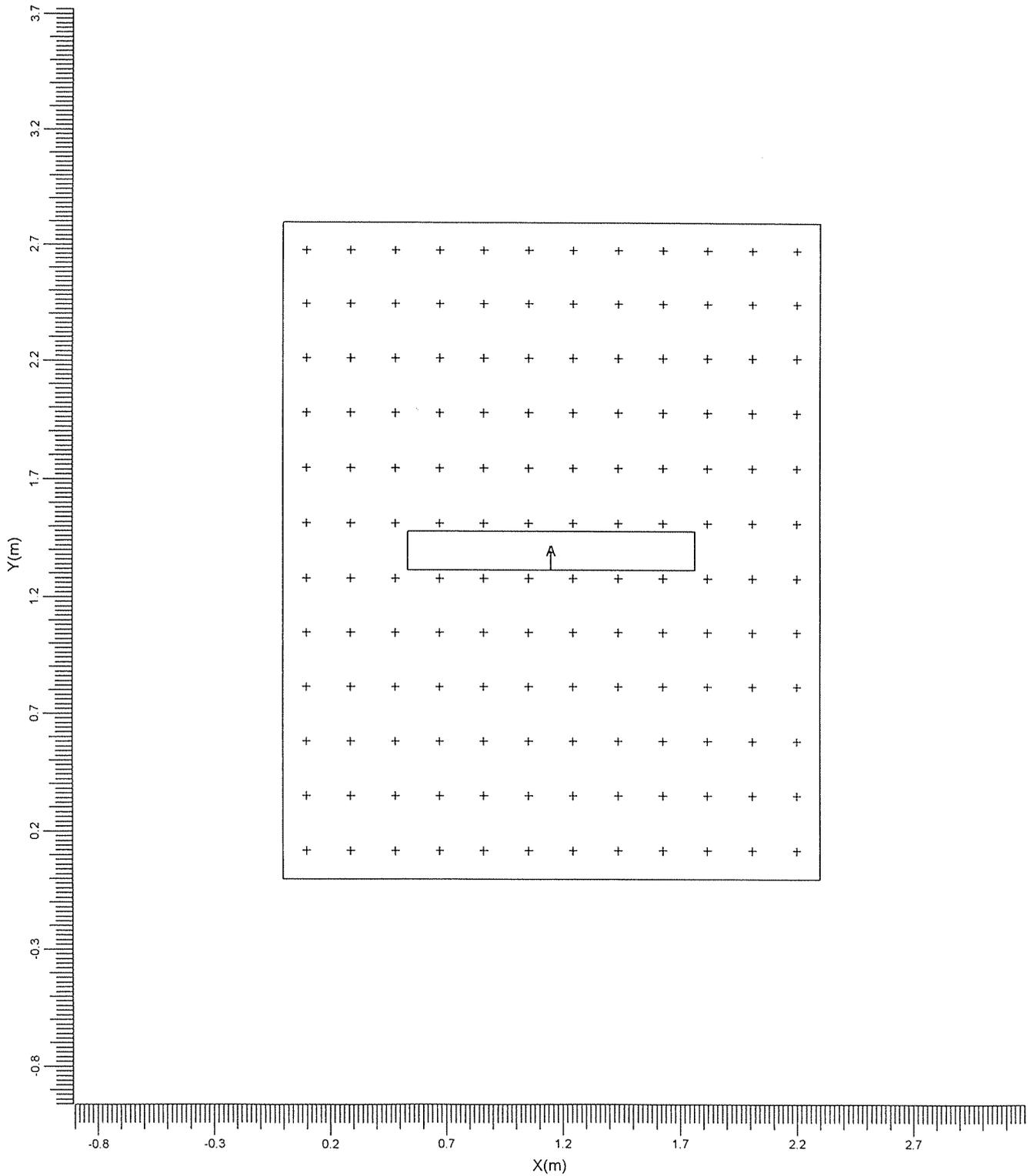
CalcuLuX Indoor 2.0b

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1. Project Description

1.1 Top Project Overview



A TMS 028/136

Width
2.30 m

Length
2.80 m

Height
2.90 m

Working Plane Height
0.00 m

Scale
1:25

2. Summary

2.1 Room Summary

Room Dimensions			Surface		Reflectance
Width	2.30	m	Ceiling		0.50
Length	2.80	m	Left Wall		0.30
Height	2.90	m	Right Wall		0.30
Working Plane Height	0.00	m	Front Wall		0.30
			Back Wall		0.30
			Floor		0.10

Room Position (Front Bottom Left)

X	0.00	m
Y	0.00	m

Total Average Room Surface Luminance (cd/m²):

Ceiling	Left	Right	Front	Back	Floor
4.7	10.4	10.4	11.1	11.1	3.3

The overall maintenance factor used for this project is 1.00.

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
A	1	TMS 028/136	1 * TL-D 36W	44.1	1 * 3350

The total installed power: 0.0 (kWatt)

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
STORE	A 1	0.0

2.3 Calculation Results

(II) Luminance Calculations:

Calculation	Type	Unit	Ave	Min/Ave	Min/Max	Result
Grid	Surface Illuminance	lux	104	0.83	0.72	Total

3. Calculation Results

3.1 Grid: Textual Table

Grid : Grid at Z = 0.00 m
Calculation : Surface Illuminance (lux)
Result Type : Total

X (m)	0.10	0.29	0.48	0.67	0.86	1.05	1.25	1.44	1.63	1.82	2.01	2.20	
Y (m)	2.68	86<	89	93	95	97	98	98	97	95	93	89	86
	2.45	90	94	98	101	103	104	104	103	101	98	94	90
	2.21	94	98	102	105	108	109	109	108	105	102	98	94
	1.98	97	102	106	110	112	114	114	112	110	106	102	97
	1.75	99	105	109	113	116	117	117	116	113	109	105	99
	1.52	101	106	111	115	117	119>	119>	117	115	111	106	101
	1.28	101	106	111	115	117	119>	119>	117	115	111	106	101
	1.05	99	105	109	113	116	117	117	116	113	109	105	99
	0.82	97	102	106	110	112	114	114	112	110	106	102	97
	0.59	94	98	102	105	108	109	109	108	105	102	98	94
	0.35	90	94	98	101	103	104	104	103	101	98	94	90
	0.12	86<	89	93	95	97	98	98	97	95	93	89	86<

Average
104

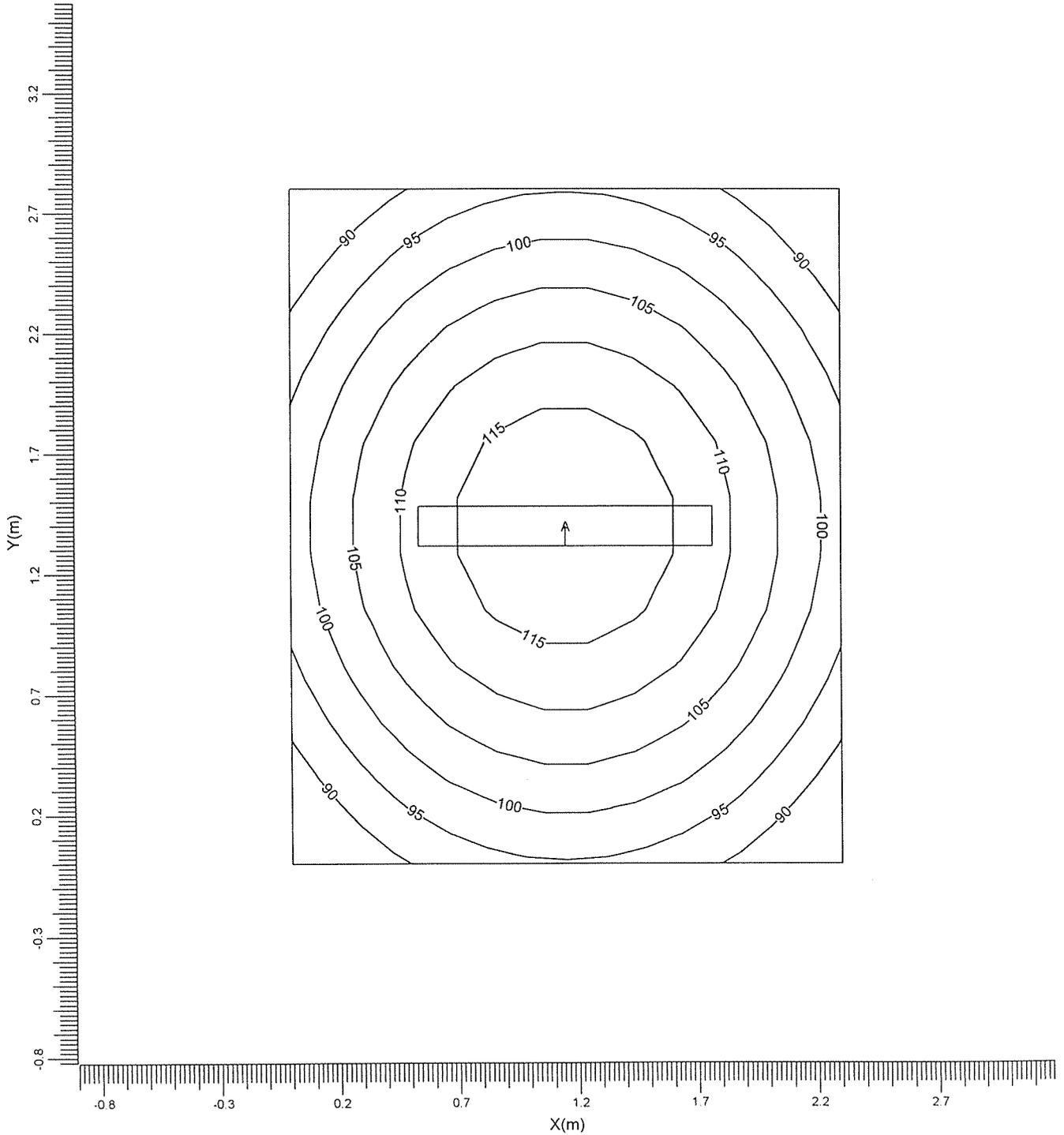
Min/Ave
0.83

Min/Max
0.72

Project maintenance factor
1.00

3.2 Grid: Iso Contour

Grid : Grid at Z = 0.00 m
 Calculation : Surface Illuminance (lux)
 Result Type : Total



A ———▷ TMS 028/136

Average
104

Min/Ave
0.83

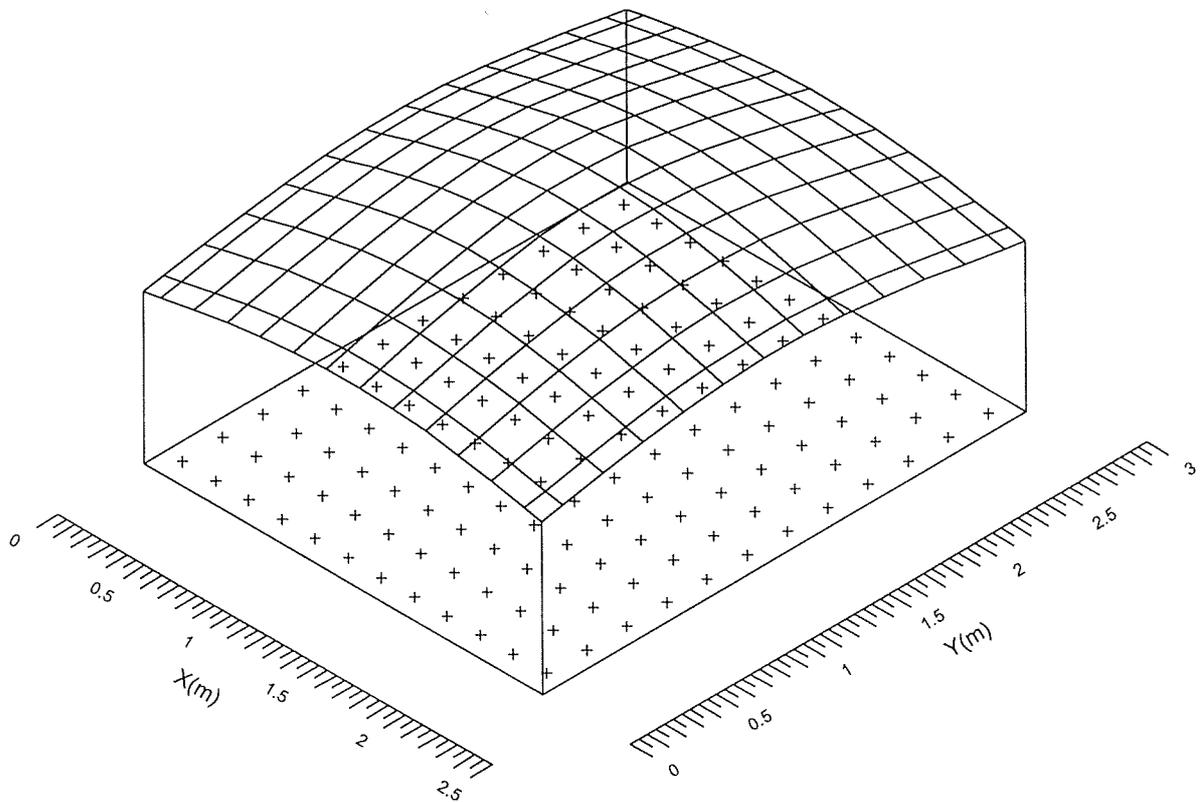
Min/Max
0.72

Project maintenance factor
1.00

Scale
1:25

3.3 Grid: Mountain Plot

Grid : Grid at Z = 0.00 m
Calculation : Surface Illuminance (lux)
Result Type : Total



Average
104

Min/Ave
0.83

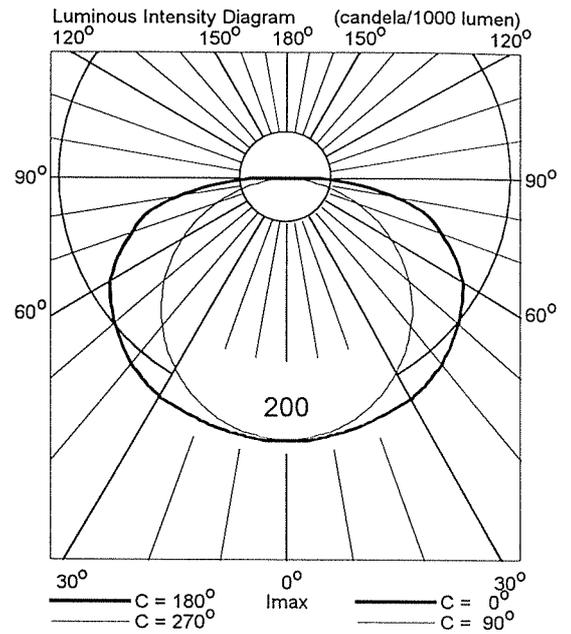
Min/Max
0.72

Project maintenance factor
1.00

4. Luminaire Details

4.1 Project Luminaires

Luminaire Name : TMS 028/136
Lamp name : TL-D 36W
Lamp Color : 840
Number of lamps/luminaire : 1
Lamp flux : 3350 lm
Ballast : Standard
Light output ratios
DLOR : 0.87
ULOR : 0.00
TLOR : 0.87
Luminaire wattage : 44.1 W
Luminaire voltage : 230.0 V
Measurement code : LVN7943000



KARAK TOURISM DEVELOPMENT PROJECT

UPPER OBSERVATION POINT-KITCHEN

Date: 12-07-2000
Customer: THE MINISTRY OF TOURISM AND ANTIQUITIES
Customer Representative: THE MINISTRY OF PLANNING
Designer: S.M

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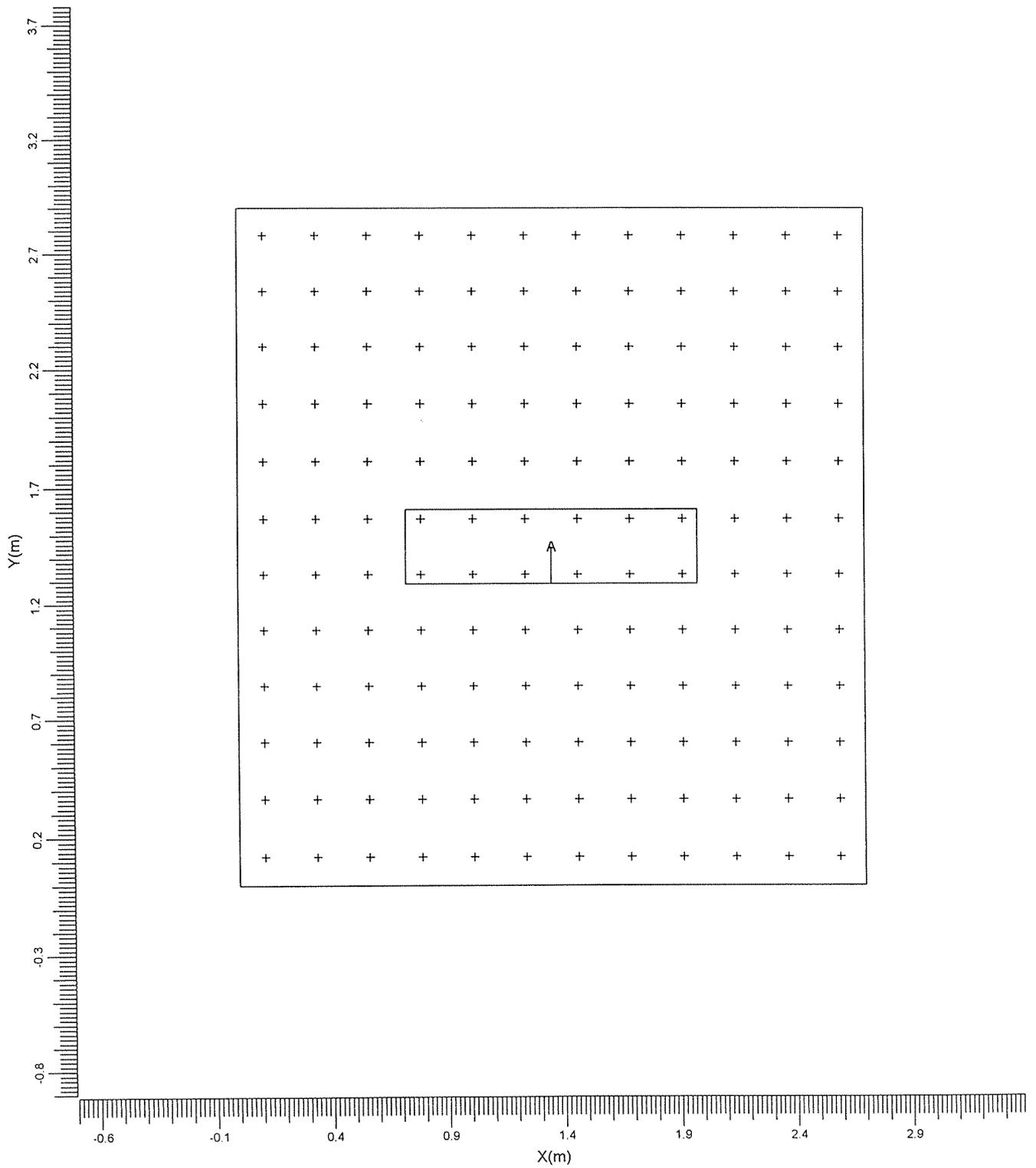
CalcuLuX Indoor 2.0b

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1. Project Description

1.1 Top Project Overview



A ———▷ TCS 314/236 P3

Width
2.70 m

Length
2.90 m

Height
2.90 m

Working Plane Height
0.80 m

Scale
1:25

2. Summary

2.1 Room Summary

Room Dimensions			Surface	Reflectance
Width	2.70	m	Ceiling	0.50
Length	2.90	m	Left Wall	0.30
Height	2.90	m	Right Wall	0.30
Working Plane Height	0.80	m	Front Wall	0.30
			Back Wall	0.30
			Floor	0.10

Room Position (Front Bottom Left)

X	0.00	m
Y	0.00	m

Total Average Room Surface Luminance (cd/m²):

Ceiling	Left	Right	Front	Back	Floor
5.3	12.0	12.0	11.4	11.4	6.2

The overall maintenance factor used for this project is 1.00.

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
A	1	TCS 314/236 P3	2 * TL-D 36W	88.2	2 * 3350

The total installed power: 0.1 (kWatt)

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
KITCHEN	A 1	0.1

2.3 Calculation Results

(II)luminance Calculations:

Calculation	Type	Unit	Ave	Min/Ave	Min/Max	Result
Grid	Surface Illuminance	lux	283	0.55	0.38	Total

3. Calculation Results

3.1 Grid: Textual Table

Grid : Grid at Z = 0.80 m
Calculation : Surface Illuminance (lux)
Result Type : Total

X (m)	0.11	0.34	0.56	0.79	1.01	1.24	1.46	1.69	1.91	2.14	2.36	2.59	
Y (m)	2.78	156	178	199	216	229	236	236	229	216	199	178	156<
	2.54	182	209	236	258	275	284	284	275	258	236	209	182
	2.30	206	239	270	298	318	329	329	318	298	270	239	206
	2.05	226	264	300	332	356	368	368	356	332	300	264	226
	1.81	240	281	322	357	384	398	398	384	357	322	281	240
	1.57	248	291	334	371	399	414	414	399	371	334	291	248
	1.33	248	291	334	371	399	414>	414	399	371	334	291	248
	1.09	240	281	322	357	384	398	398	384	357	322	281	240
	0.85	226	264	300	332	356	368	368	356	332	300	264	226
	0.60	206	239	270	298	318	329	329	318	298	270	239	206
	0.36	182	209	236	258	275	284	284	275	258	236	209	182
	0.12	156	178	199	216	229	236	236	229	216	199	178	156

Average
283

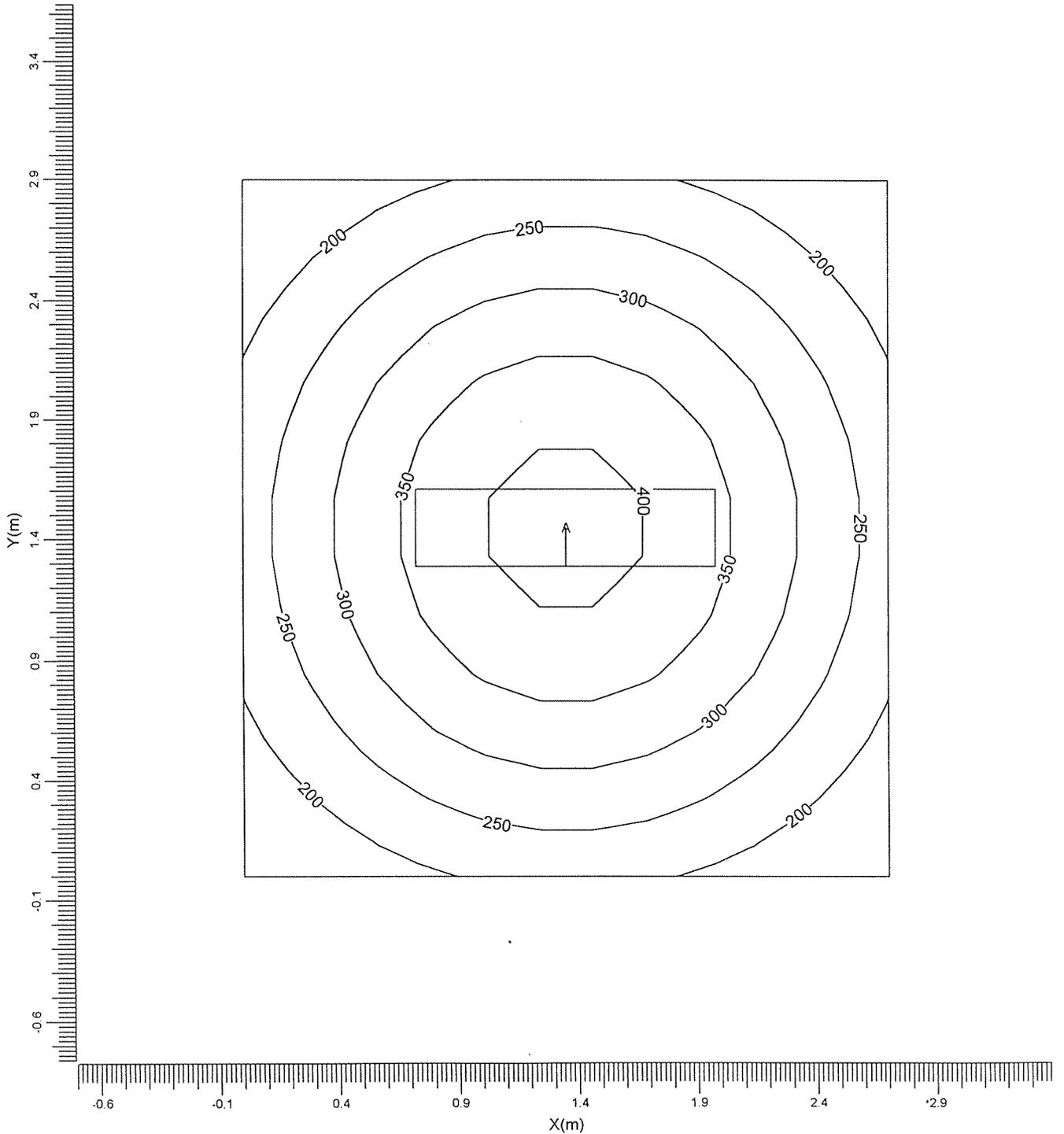
Min/Ave
0.55

Min/Max
0.38

Project maintenance factor
1.00

3.2 Grid: Iso Contour

Grid : Grid at Z = 0.80 m
 Calculation : Surface Illuminance (lux)
 Result Type : Total



A ———▷ TCS 314/236 P3

Average
283

Min/Ave
0.55

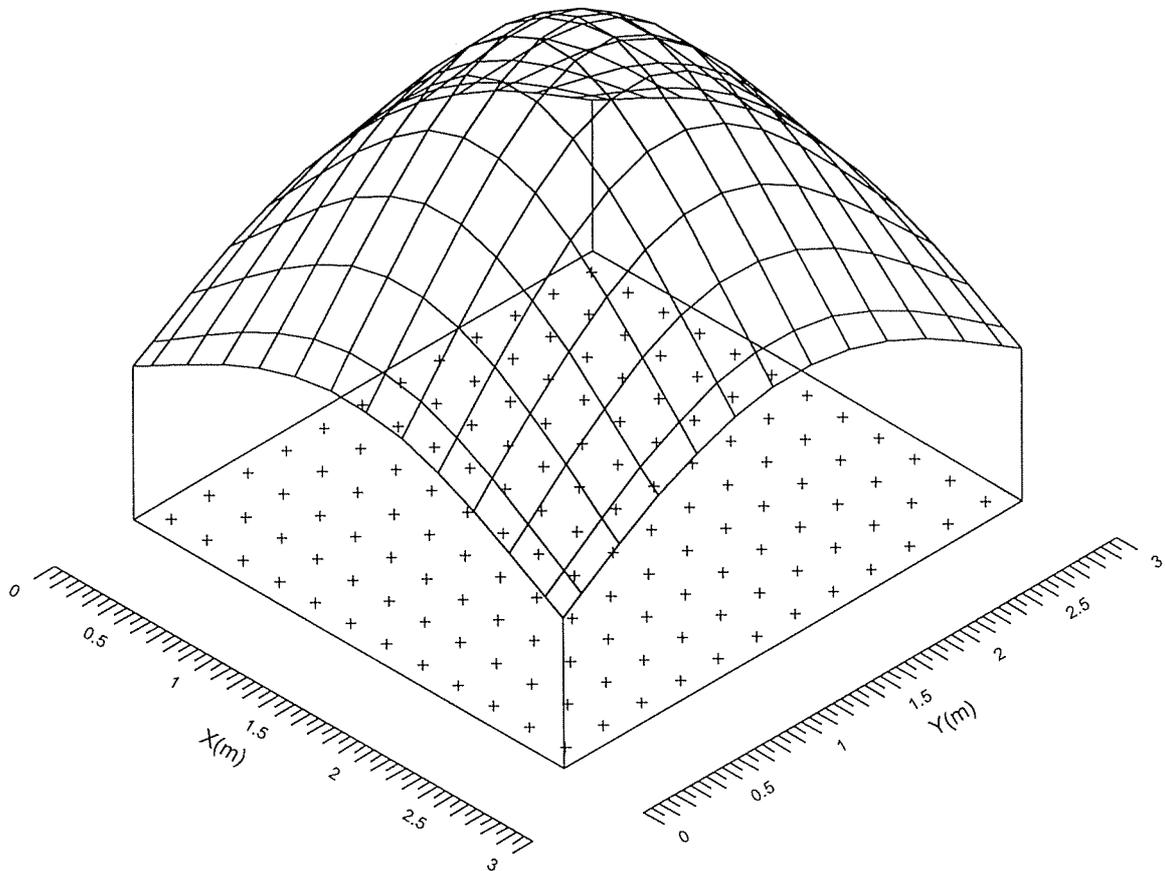
Min/Max
0.38

Project maintenance factor
1.00

Scale
1:25

3.3 Grid: Mountain Plot

Grid : Grid at Z = 0.80 m
Calculation : Surface Illuminance (lux)
Result Type : Total



Average
283

Min/Ave
0.55

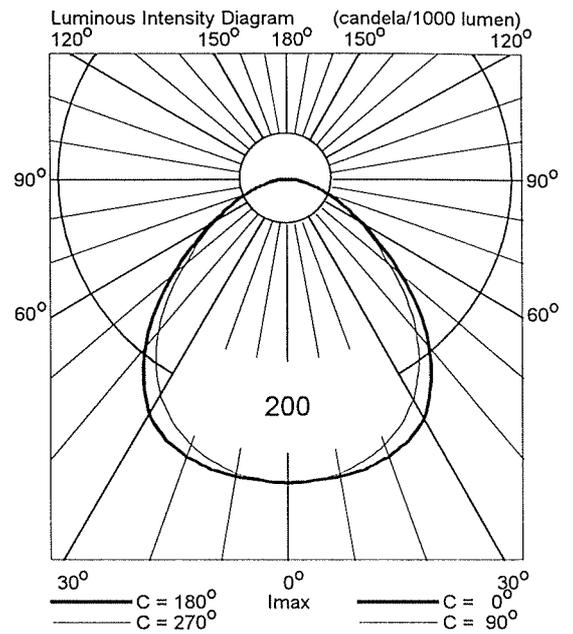
Min/Max
0.38

Project maintenance factor
1.00

4. Luminaire Details

4.1 Project Luminaires

Luminaire Name : TCS 314/236 P3
Lamp name : TL-D 36W
Lamp Color : 840
Number of lamps/luminaire : 2
Lamp flux : 3350 lm
Ballast : Standard
Light output ratios :
DLOR : 0.63
ULOR : 0.00
TLOR : 0.63
Luminaire wattage : 88.2 W
Measurement code : LVW0844900



KARAK TOURISM DEVELOPMENT PROJECT

UPPER OBSERVATION POINT-CAFE

Date: 12-07-2000
Customer: THE MINISTRY OF TOURISM AND ANTIQUITIES
Customer Representative: THE MINISTRY OF PLANNING
Designer: S.M

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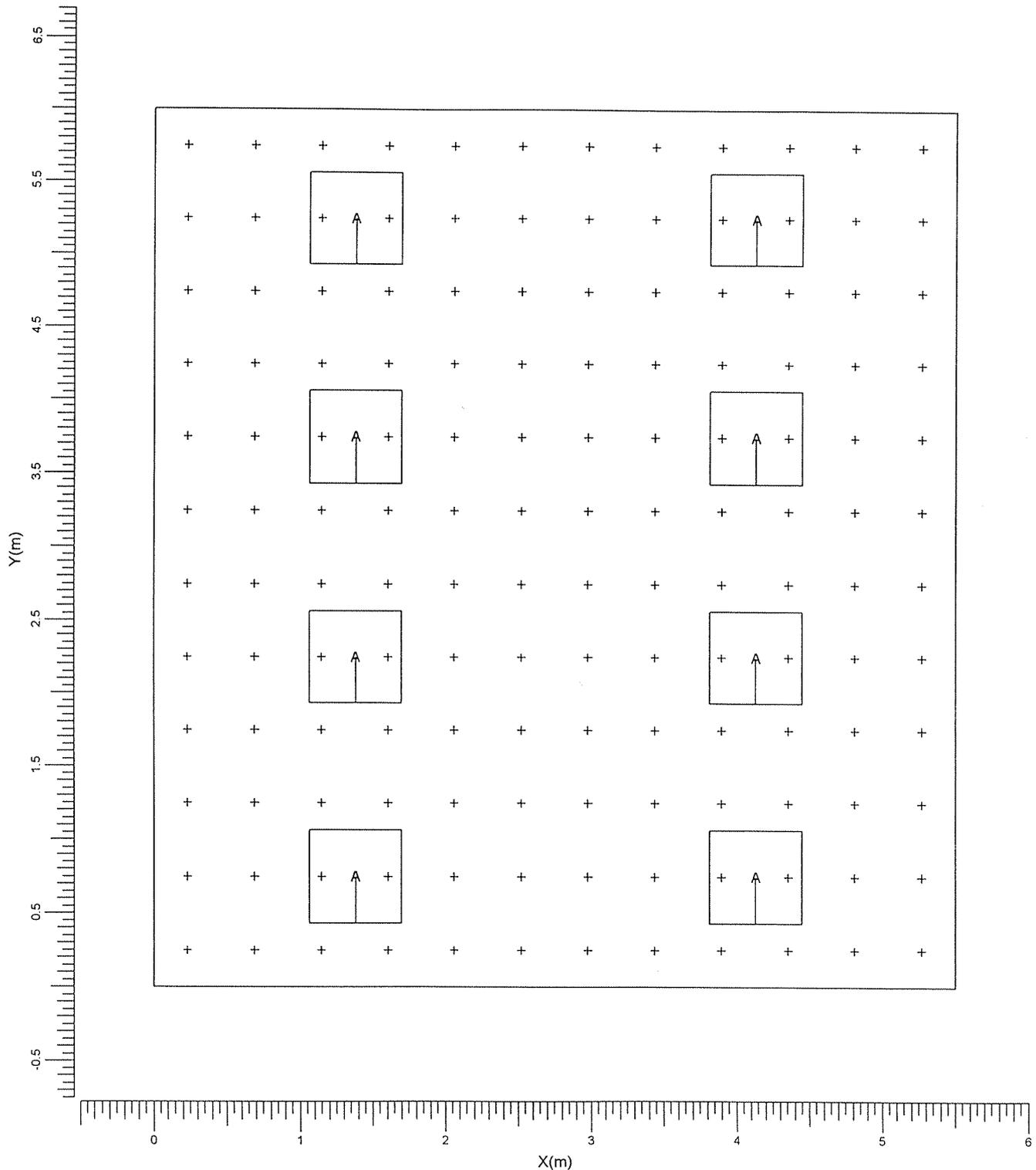
CalcuLuX Indoor 2.0b

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4.1	Project Luminaires	8

1. Project Description

1.1 Top Project Overview



A \longrightarrow TCS 314/418 L

Width
5.50 m

Length
6.00 m

Height
2.90 m

Working Plane Height
0.80 m

Scale
1:40

2. Summary

2.1 Room Summary

Room Dimensions			Surface		Reflectance
Width	5.50	m	Ceiling		0.50
Length	6.00	m	Left Wall		0.30
Height	2.90	m	Right Wall		0.30
Working Plane Height	0.80	m	Front Wall		0.30
			Back Wall		0.30
			Floor		0.10

Room Position (Front Bottom Left)		
X	0.00	m
Y	0.00	m

Total Average Room Surface Luminance (cd/m2):					
Ceiling	Left	Right	Front	Back	Floor
12.0	26.2	26.4	30.6	30.6	17.6

The overall maintenance factor used for this project is 1.00.

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
A	8	TCS 314/418 L	4 * TL-D 18W	108.0	4 * 1350

The total installed power: 0.9 (kWatt)

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
CAFE	A	0.9

2.3 Calculation Results

(II)luminance Calculations:

Calculation	Type	Unit	Ave	Min/Ave	Min/Max	Result
Grid	Surface Illuminance	lux	663	0.54	0.40	Total

3. Calculation Results

3.1 Grid: Textual Table

Grid : Grid at Z = 0.80 m
 Calculation : Surface Illuminance (lux)
 Result Type : Total

X (m)	0.23	0.69	1.15	1.60	2.06	2.52	2.98	3.44	3.90	4.35	4.81	5.27
Y (m)	5.75	5.25	4.75	4.25	3.75	3.25	2.75	2.25	1.75	1.25	0.75	0.25
	355<	464	554	579	542	502	502	541	579	556	466	357
	410	546	662	691	642	590	589	640	691	663	550	413
	459	615	746	781	725	666	665	723	780	748	618	462
	493	662	803	841	783	720	719	781	840	805	666	497
	511	685	831	871	812	749	748	811	871	834	689	515
	523	701	849	890>	832	768	767	830	890	852	705	527
	523	701	849	890	832	768	767	830	890	852	705	527
	511	685	831	871	812	749	748	811	871	834	689	515
	493	662	803	841	783	720	719	781	840	805	666	497
	459	615	746	781	725	666	665	723	780	748	618	462
	410	546	662	691	642	590	589	640	691	663	550	413
	355<	464	554	579	542	502	502	541	579	556	466	357

Average
663

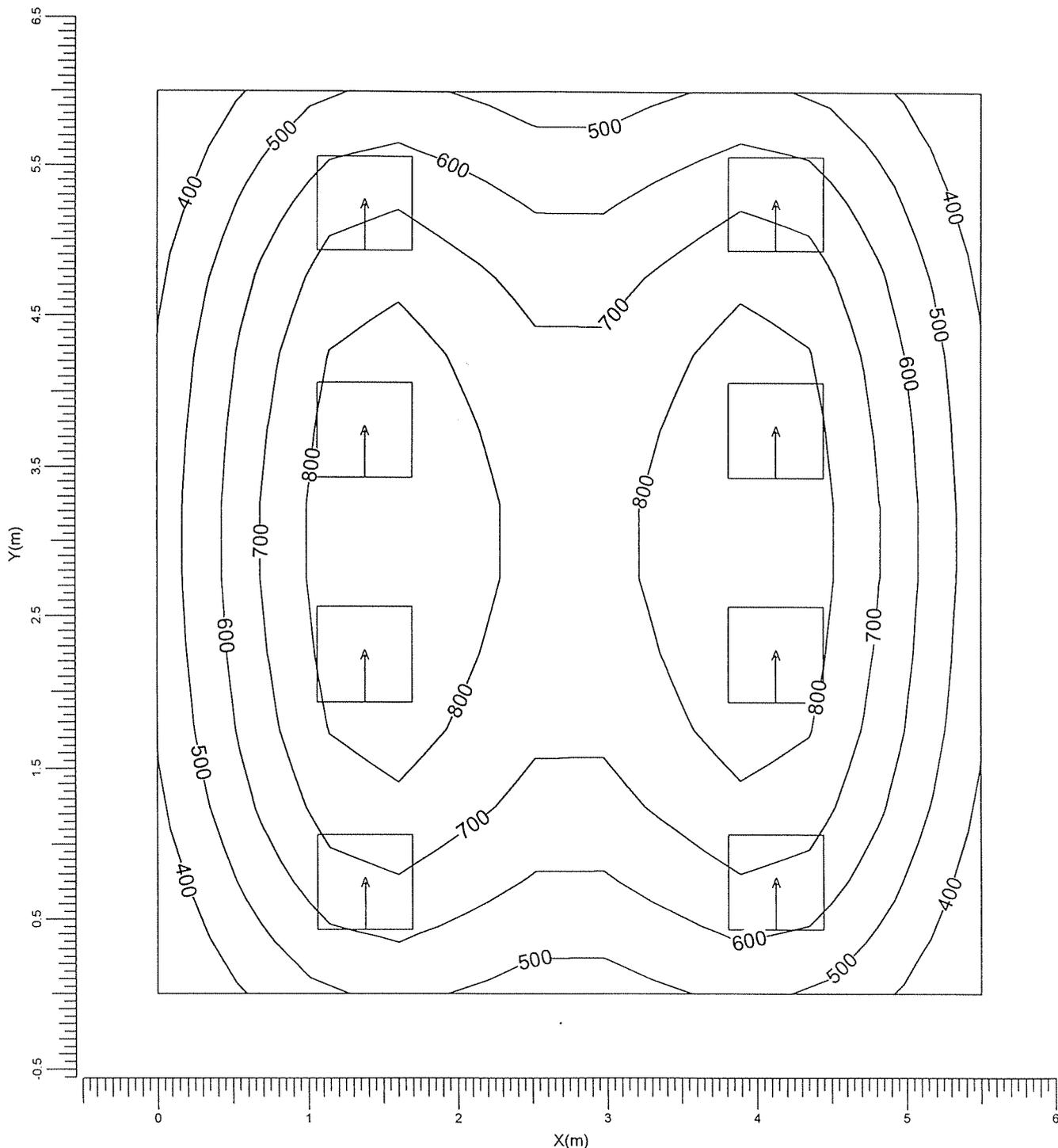
Min/Ave
0.54

Min/Max
0.40

Project maintenance factor
1.00

3.2 Grid: Iso Contour

Grid : Grid at Z = 0.80 m
 Calculation : Surface Illuminance (lux)
 Result Type : Total



A ———▷ TCS 314/418 L

Average
663

Min/Ave
0.54

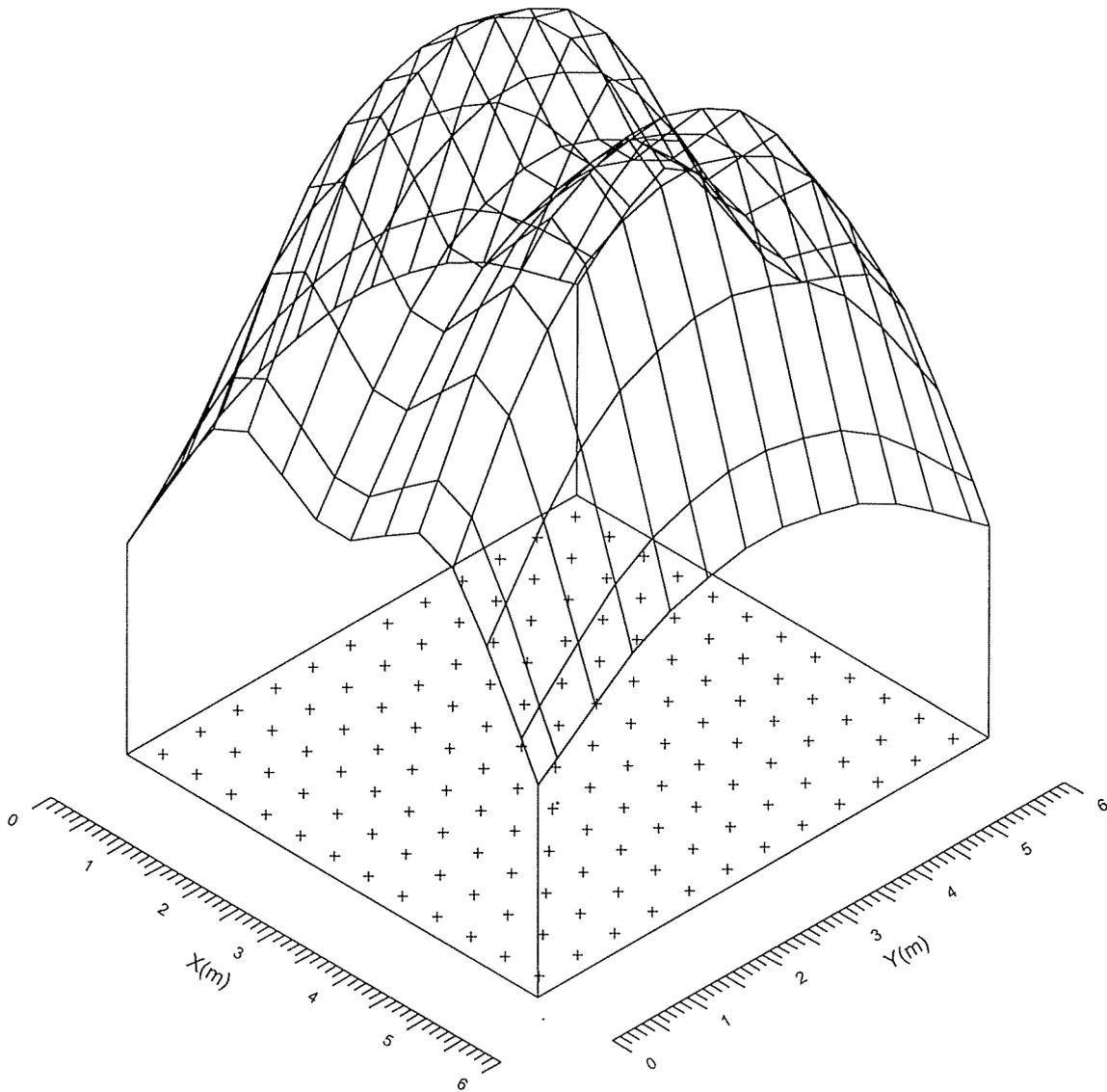
Min/Max
0.40

Project maintenance factor
1.00

Scale
1:40

3.3 Grid: Mountain Plot

Grid : Grid at Z = 0.80 m
Calculation : Surface Illuminance (lux)
Result Type : Total



Average
663

Min/Ave
0.54

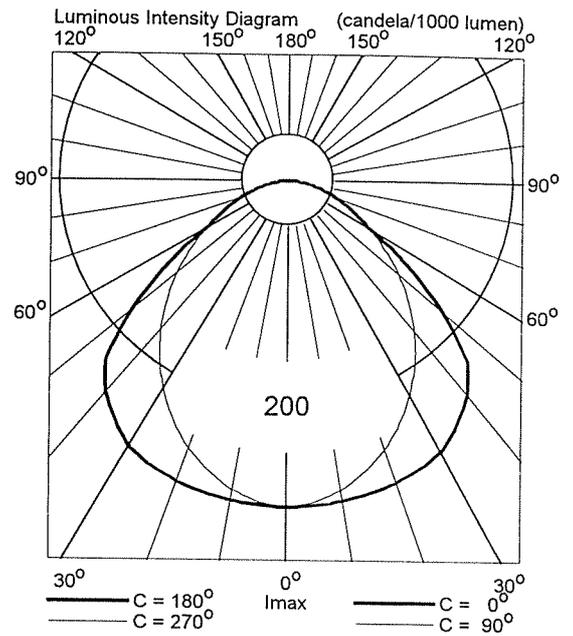
Min/Max
0.40

Project maintenance factor
1.00

4. Luminaire Details

4.1 Project Luminaires

Luminaire Name : TCS 314/418 L
 Lamp name : TL-D 18W
 Lamp Color : 840
 Number of lamps/luminaire : 4
 Lamp flux : 1350 lm
 Ballast : Standard
 Light output ratios
 DLOR : 0.72
 ULOR : 0.00
 TLOR : 0.72
 Luminaire wattage : 108.0 W
 Measurement code : LVW0846500



LOWER OBSERVATION POINT
LIGHTING CALCULATION

KARAK TOURISM DEVELOPMENT PROJECT

LOWER OBSERVATION POINT-CAFE

Date: 12-07-2000
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Customer Representative: THE MINISTRY OF PLANNING
Designer: S.M

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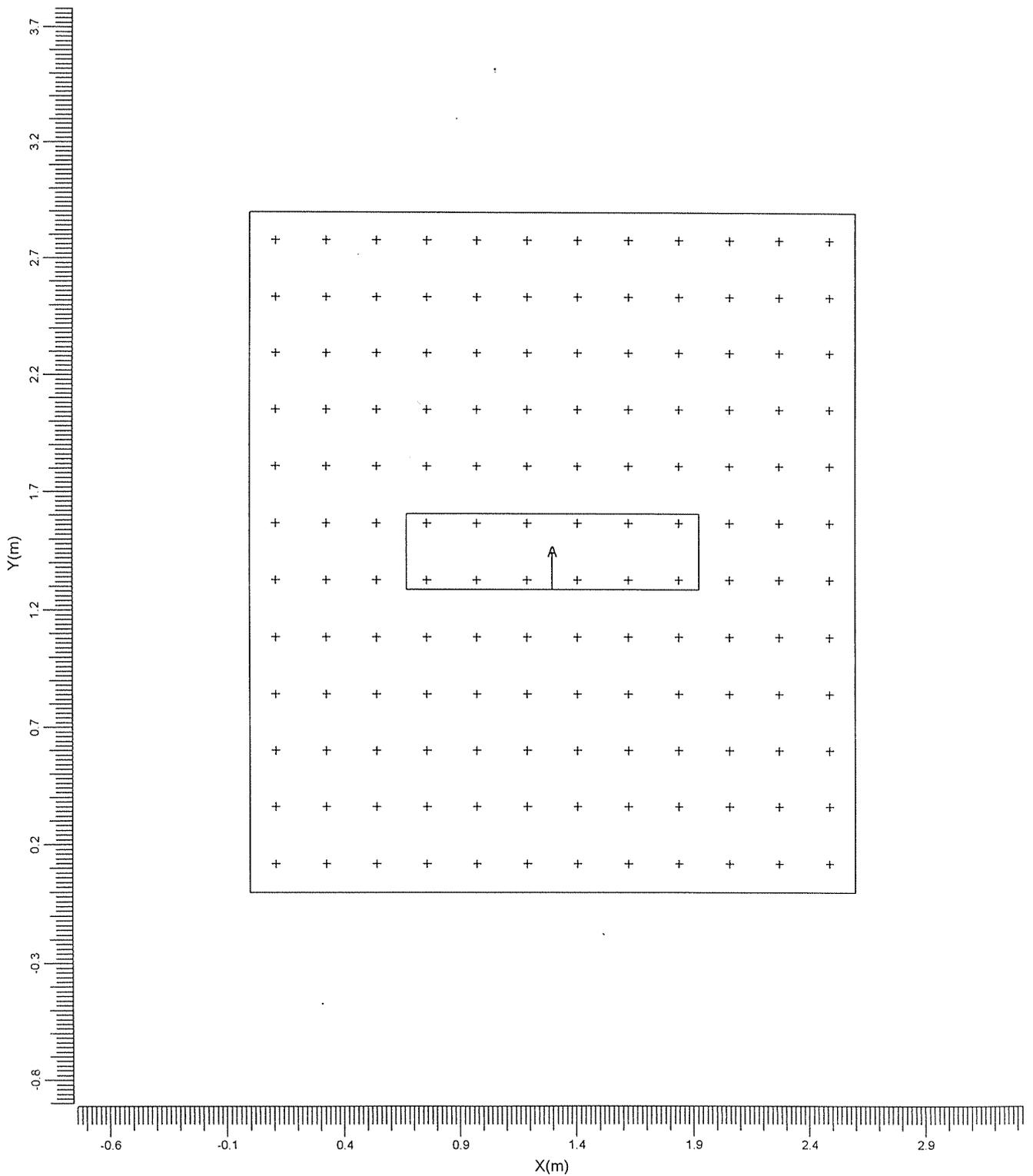
CalcuLuX Indoor 2.0b

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3.3	Grid: Mountain Plot	7
4.	Luminaire Details	8
4.1	Project Luminaires	8

1. Project Description

1.1 Top Project Overview



A ———▷ TCS 314/236 P3

Width
2.60 m

Length
2.90 m

Height
2.90 m

Working Plane Height
0.80 m

Scale
1:25

2. Summary

2.1 Room Summary

Room Dimensions			Surface	Reflectance
Width	2.60	m	Ceiling	0.50
Length	2.90	m	Left Wall	0.30
Height	2.90	m	Right Wall	0.30
Working Plane Height	0.80	m	Front Wall	0.30
			Back Wall	0.30
			Floor	0.10

Room Position (Front Bottom Left)

X	0.00	m
Y	0.00	m

Total Average Room Surface Luminance (cd/m2):

Ceiling	Left	Right	Front	Back	Floor
5.5	12.4	12.4	11.6	11.6	6.3

The overall maintenance factor used for this project is 1.00.

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
A	1	TCS 314/236 P3	2 * TL-D 36W	88.2	2 * 3350

The total installed power: 0.1 (kWatt)

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
CAFE	A 1	0.1

2.3 Calculation Results

(II)luminance Calculations:

Calculation	Type	Unit	Ave	Min/Ave	Min/Max	Result
Grid	Surface Illuminance	lux	288	0.56	0.39	Total

3. Calculation Results

3.1 Grid: Textual Table

Grid : Grid at Z = 0.80 m
 Calculation : Surface Illuminance (lux)
 Result Type : Total

X (m)	0.11	0.33	0.54	0.76	0.98	1.19	1.41	1.62	1.84	2.06	2.27	2.49	
Y (m)	2.78	162<	183	202	219	231	237	237	231	219	202	183	162<
	2.54	189	216	241	261	277	285	285	277	261	241	216	189
	2.30	215	246	276	301	320	330	330	320	301	276	246	215
	2.05	235	272	306	336	358	370	370	358	336	306	272	235
	1.81	251	290	329	361	386	399	399	386	361	329	290	251
	1.57	258	300	341	375	401	415>	415>	401	375	341	300	258
	1.33	258	300	341	375	401	415>	415>	401	375	341	300	258
	1.09	251	290	329	361	386	399	399	386	361	329	290	251
	0.85	235	272	306	336	358	370	370	358	336	306	272	235
	0.60	215	246	276	301	320	330	330	320	301	276	246	215
	0.36	189	216	241	261	277	285	285	277	261	241	216	189
	0.12	162<	183	202	219	231	237	237	231	219	202	183	162<

Average
288

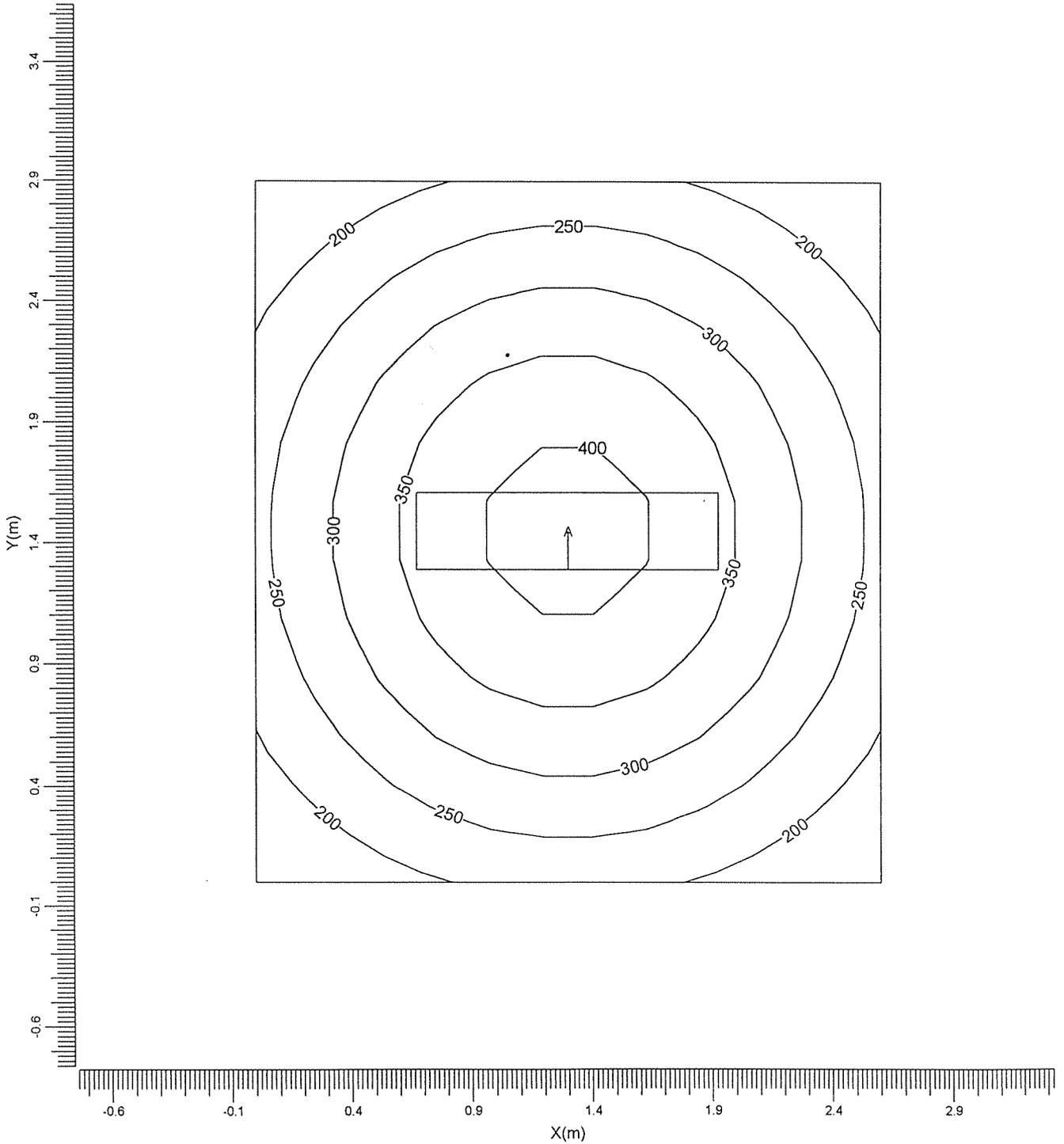
Min/Ave
0.56

Min/Max
0.39

Project maintenance factor
1.00

3.2 Grid: Iso Contour

Grid : Grid at Z = 0.80 m
 Calculation : Surface Illuminance (lux)
 Result Type : Total



A ———▷ TCS 314/236 P3

Average
288

Min/Ave
0.56

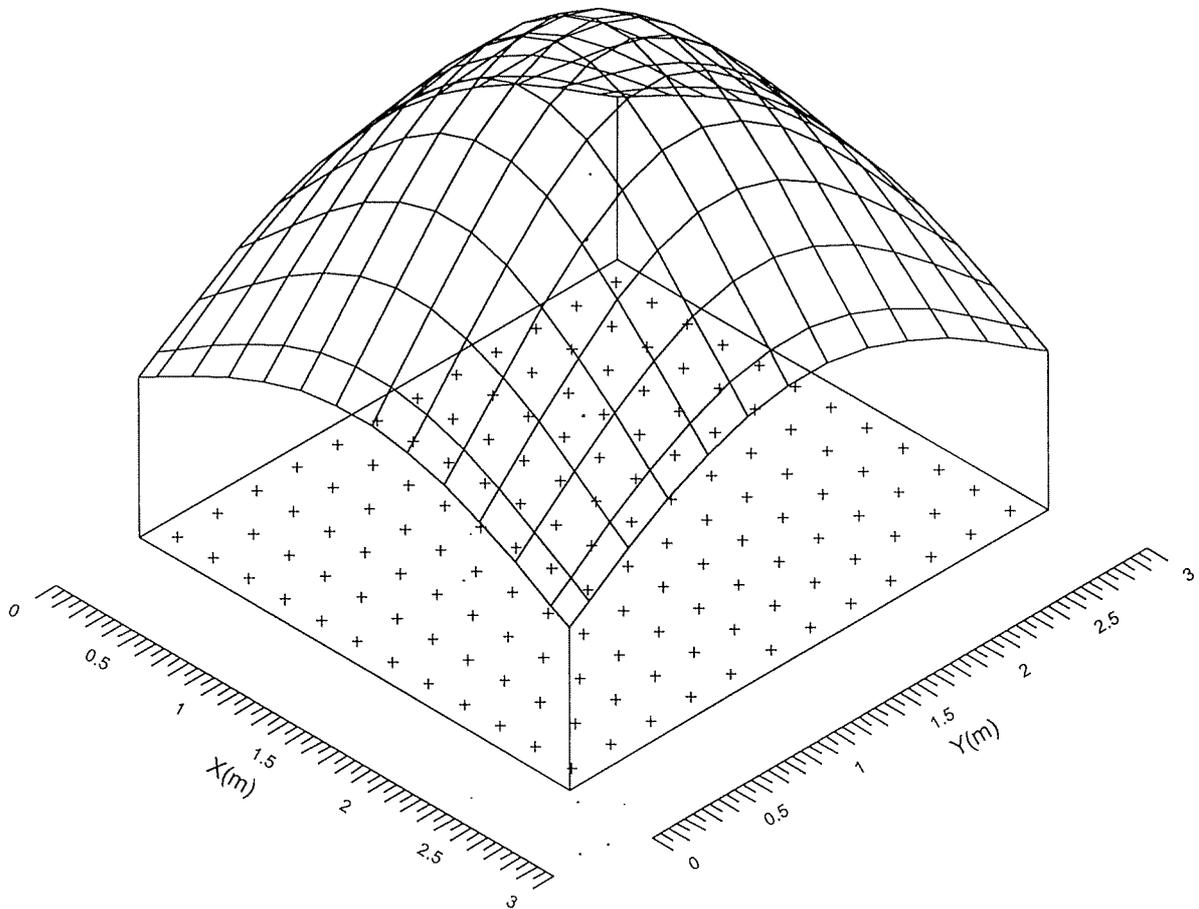
Min/Max
0.39

Project maintenance factor
1.00

Scale
1:25

3.3 Grid: Mountain Plot

Grid : Grid at Z = 0.80 m
Calculation : Surface Illuminance (lux)
Result Type : Total



Average
288

Min/Ave
0.56

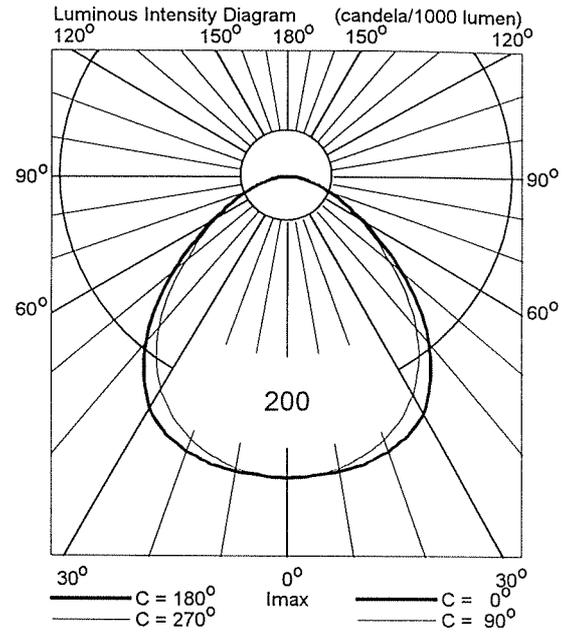
Min/Max
0.39

Project maintenance factor
1.00

4. Luminaire Details

4.1 Project Luminaires

Luminaire Name : TCS 314/236 P3
Lamp name : TL-D 36W
Lamp Color : 840
Number of lamps/luminaire : 2
Lamp flux : 3350 lm
Ballast : Standard
Light output ratios
DLOR : 0.63
ULOR : 0.00
TLOR : 0.63
Luminaire wattage : 88.2 W
Measurement code : LVW0844900



KARAK TOURISM DEVELOPMENT PROJECT

LOWER OBSERVATION POINT-INFO KIOSK

Date: 12-07-2000
Customer: THE MINISTRY OF TOURISM AND ANTIQUITIES
Customer Representative: THE MINISTRY OF PLANNING
Designer: S.M

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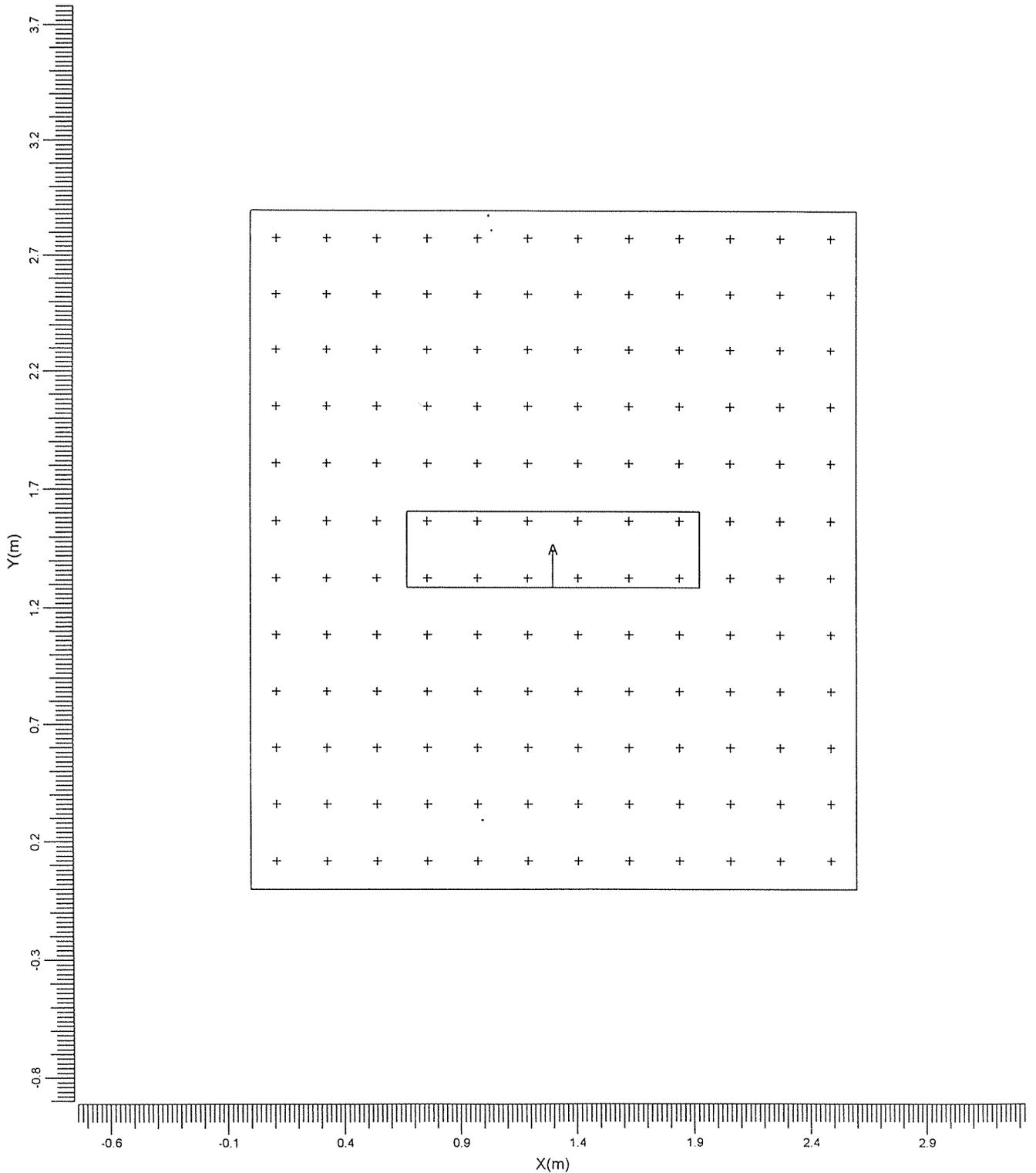
CalcuLuX Indoor 2.0b

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1. Project Description

1.1 Top Project Overview



A ———▷ TCS 314/236 P3

Width	Length	Height	Working Plane Height	Scale
2.60 m	2.90 m	2.90 m	0.80 m	1:25

2. Summary

2.1 Room Summary

Room Dimensions			Surface		Reflectance
Width	2.60	m	Ceiling		0.50
Length	2.90	m	Left Wall		0.30
Height	2.90	m	Right Wall		0.30
Working Plane Height	0.80	m	Front Wall		0.30
			Back Wall		0.30
			Floor		0.10

Room Position (Front Bottom Left)

X	0.00	m
Y	0.00	m

Total Average Room Surface Luminance (cd/m²):

Ceiling	Left	Right	Front	Back	Floor
5.5	12.4	12.4	11.6	11.6	6.3

The overall maintenance factor used for this project is 1.00.

2.2 Project Luminaires

Code	Qty	Luminaire Type	Lamp Type	Power (W)	Flux (lm)
A	1	TCS 314/236 P3	2 * TL-D 36W	88.2	2 * 3350

The total installed power: 0.1 (kWatt)

Number of Luminaires Per Arrangement:

Arrangement	Luminaire Code	Power (kWatt)
INFO KIOSK	A 1	0.1

2.3 Calculation Results

(II)luminance Calculations:

Calculation	Type	Unit	Ave	Min/Ave	Min/Max	Result
Grid	Surface Illuminance	lux	288	0.56	0.39	Total

3. Calculation Results

3.1 Grid: Textual Table

Grid : Grid at Z = 0.80 m
 Calculation : Surface Illuminance (lux)
 Result Type : Total

X (m)	0.11	0.33	0.54	0.76	0.98	1.19	1.41	1.62	1.84	2.06	2.27	2.49	
Y (m)	2.78	162<	183	202	219	231	237	237	231	219	202	183	162<
	2.54	189	216	241	261	277	285	285	277	261	241	216	189
	2.30	215	246	276	301	320	330	330	320	301	276	246	215
	2.05	235	272	306	336	358	370	370	358	336	306	272	235
	1.81	251	290	329	361	386	399	399	386	361	329	290	251
	1.57	258	300	341	375	401	415>	415>	401	375	341	300	258
	1.33	258	300	341	375	401	415>	415>	401	375	341	300	258
	1.09	251	290	329	361	386	399	399	386	361	329	290	251
	0.85	235	272	306	336	358	370	370	358	336	306	272	235
	0.60	215	246	276	301	320	330	330	320	301	276	246	215
	0.36	189	216	241	261	277	285	285	277	261	241	216	189
	0.12	162<	183	202	219	231	237	237	231	219	202	183	162<

Average
288

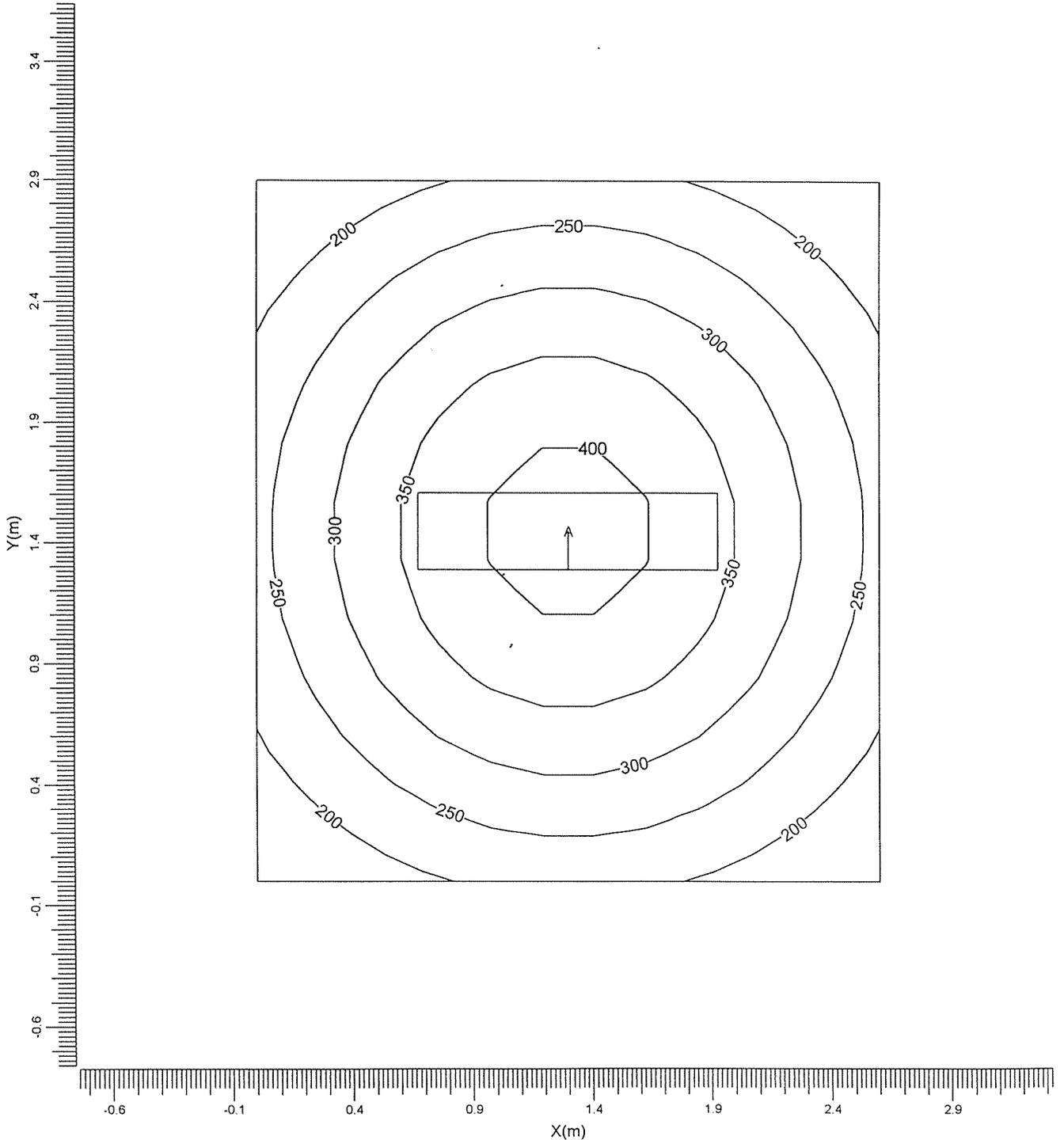
Min/Ave
0.56

Min/Max
0.39

Project maintenance factor
1.00

3.2 Grid: Iso Contour

Grid : Grid at Z = 0.80 m
 Calculation : Surface Illuminance (lux)
 Result Type : Total



A ———▷ TCS 314/236 P3

Average
288

Min/Ave
0.56

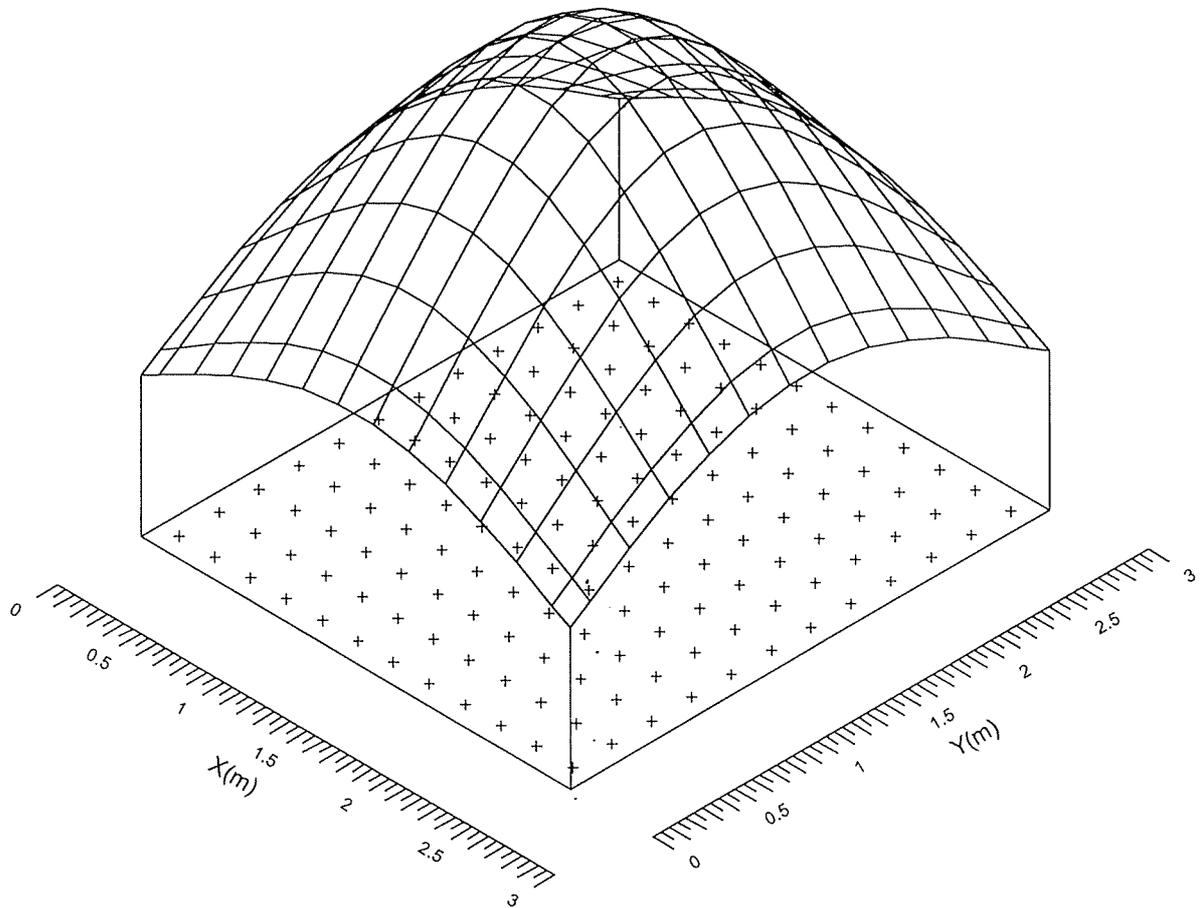
Min/Max
0.39

Project maintenance factor
1.00

Scale
1:25

3.3 Grid: Mountain Plot

Grid : Grid at Z = 0.80 m
Calculation : Surface Illuminance (lux)
Result Type : Total



Average
288

Min/Ave
0.56

Min/Max
0.39

Project maintenance factor
1.00

4. Luminaire Details

4.1 Project Luminaires

Luminaire Name : TCS 314/236 P3
Lamp name : TL-D 36W
Lamp Color : 840
Number of lamps/luminaire : 2
Lamp flux : 3350 lm
Ballast : Standard
Light output ratios
DLOR : 0.63
ULOR : 0.00
TLOR : 0.63
Luminaire wattage : 88.2 W
Measurement code : LVW0844900

