QUT Level 6 Office Lighting Simulation Rev 3

Project: Undergraduate Thesis
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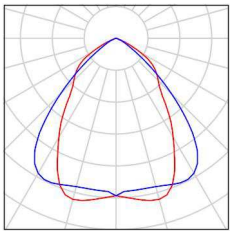
QUT Level 6 Office Lighting Simulation Rev 3 / Luminaire parts list

2 Pieces

Gerard Lighting F-LED_1234U1 Pierlite Futcha LED 300x1200 4000K 27W DALI
Article No.: F-LED_1234U1
Luminous flux (Luminaire): 2940 lm
Luminous flux (Lamps): 2940 lm
Luminaire Wattage: 27.5 W
Luminaire classification according to CIE: 100
CIE flux code: 70 96 100 100 100
Fitting: 1 x Samsung S4 (Correction Factor 0.800).

See our luminaire catalog for an image of the luminaire.



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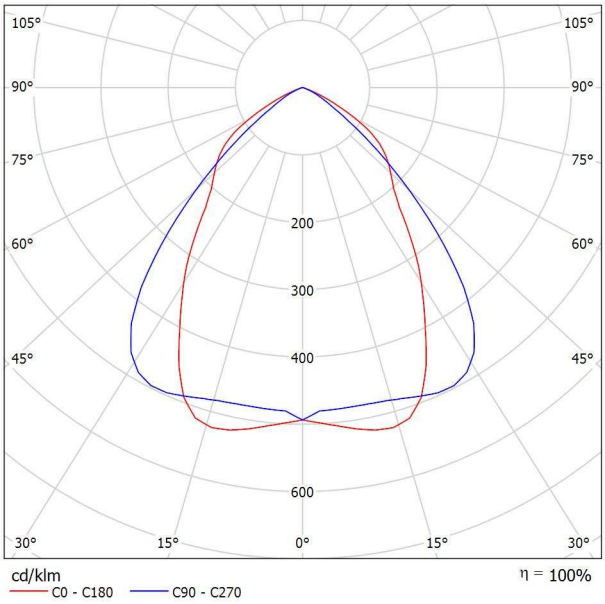
Gerard Lighting F-LED_1234U1 Pierlite Futcha LED 300x1200 4000K 27W DALI / Luminaire Data Sheet

See our luminaire catalog for an image of the luminaire.

Luminous emittance 1:



Luminaire classification according to CIE: 100
CIE flux code: 70 96 100 100 100

Luminous emittance 1:

Glare Evaluation According to UGR

ρ Ceiling		70	70	50	50	30	70	70	50	50	30
ρ Walls		50	30	50	30	30	50	30	50	30	30
ρ Floor		20	20	20	20	20	20	20	20	20	20
Room Size X	Y	Viewing direction at right angles to lamp axis					Viewing direction parallel to lamp axis				
2H	2H	13.0	14.0	13.3	14.2	14.4	7.6	8.6	7.8	8.8	9.0
	3H	13.0	13.9	13.4	14.2	14.4	7.6	8.5	7.9	8.7	9.0
	4H	13.0	13.8	13.3	14.1	14.4	7.5	8.4	7.8	8.6	8.9
	6H	12.9	13.7	13.3	14.0	14.3	7.5	8.2	7.8	8.5	8.8
	8H	12.9	13.6	13.2	13.9	14.2	7.4	8.2	7.8	8.5	8.8
	12H	12.9	13.5	13.2	13.9	14.2	7.4	8.1	7.8	8.4	8.7
4H	2H	12.8	13.7	13.2	13.9	14.2	7.7	8.5	8.0	8.8	9.0
	3H	12.9	13.6	13.3	13.9	14.2	7.7	8.4	8.1	8.7	9.0
	4H	12.9	13.5	13.3	13.8	14.2	7.7	8.3	8.1	8.6	9.0
	6H	12.8	13.3	13.2	13.7	14.1	7.6	8.1	8.0	8.5	8.9
	8H	12.8	13.2	13.2	13.6	14.0	7.6	8.0	8.0	8.4	8.8
	12H	12.7	13.1	13.2	13.6	14.0	7.5	8.0	8.0	8.4	8.8
8H	4H	12.8	13.2	13.2	13.6	14.0	7.6	8.0	8.0	8.4	8.8
	6H	12.7	13.1	13.1	13.5	13.9	7.5	7.9	8.0	8.3	8.8
	8H	12.7	13.0	13.1	13.4	13.9	7.5	7.8	8.0	8.2	8.7
	12H	12.6	12.9	13.1	13.3	13.8	7.4	7.7	7.9	8.2	8.7
12H	4H	12.7	13.1	13.2	13.5	14.0	7.5	8.0	8.0	8.4	8.8
	6H	12.6	13.0	13.1	13.4	13.9	7.5	7.8	7.9	8.2	8.7
	8H	12.6	12.9	13.1	13.3	13.8	7.4	7.7	7.9	8.2	8.7

Variation of the observer position for the luminaire distances S

S = 1.0H	+1.1 / -0.9	+1.7 / -4.2
S = 1.5H	+1.0 / -2.9	+3.2 / -8.2
S = 2.0H	+2.3 / -7.8	+5.0 / -12.1
Standard table	BK00	BK00
Correction Summand	-8.5	-8.9

Corrected Glare Indices referring to 2940lm Total Luminous Flux

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Standard Office / Photometric Results

Total Luminous Flux: 5879 lm
Total Load: 55.0 W
Light loss factor: 0.80
Boundary Zone: 0.100 m

Surface	Average illuminances [lx]			Reflection factor [%]	Average luminance [cd/m²]
	direct	indirect	total		
Workplane	221	49	269	/	/
Floor	91	32	123	20	7.81
Ceiling	0.00	46	46	70	10
Wall 1	34	39	73	50	12
Wall 2	5.05	18	23	50	3.63
Wall 3	72	42	114	50	18
Wall 4	66	41	107	50	17

Uniformity on the working plane
u0: 0.172 (1:6)
E_{min} / E_{max}: 0.117 (1:9)

Illuminance Quotient (according to LG7): Walls / Working Plane: 0.263, Ceiling / Working Plane: 0.171.

Specific connected load: 5.16 W/m² = 1.91 W/m²/100 lx (Ground area: 10.67 m²)

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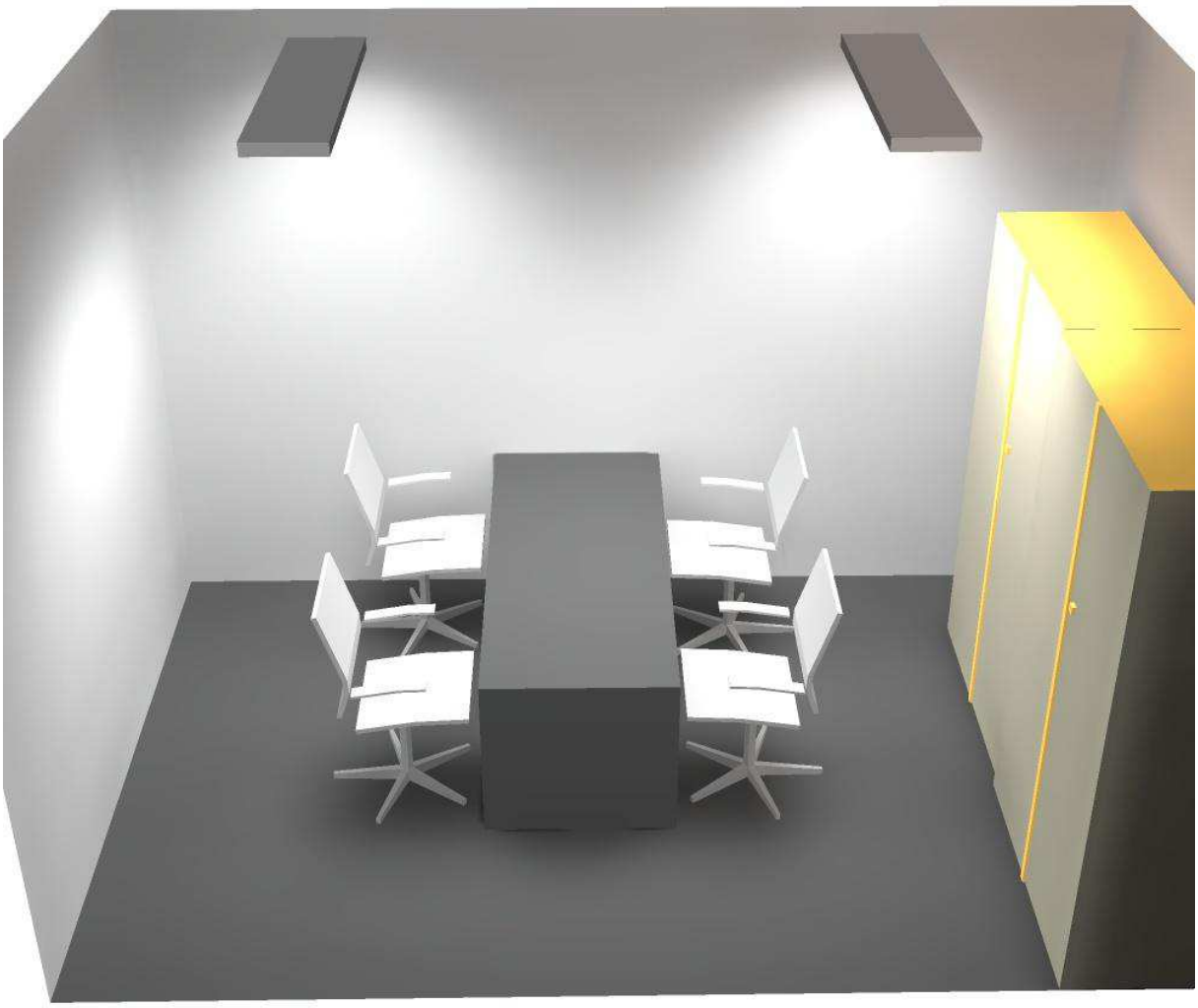
Standard Office / 3D Rendering



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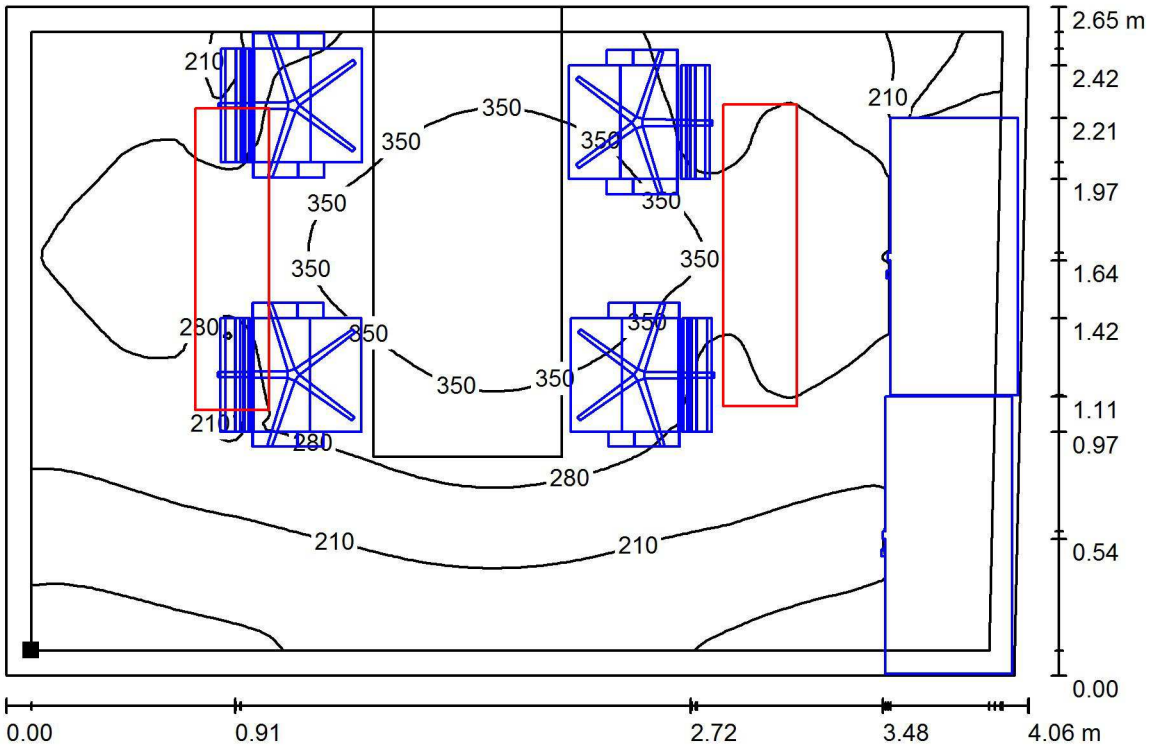
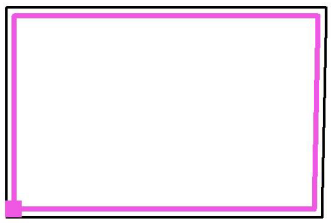
Standard Office / Workplane / Isolines (E)



Values in Lux, Scale 1 : 30

Position of surface in room:
Working plane with 0.100 m
Boundary Zone
Marked point:
(73.574 m, 63.408 m, 0.750 m)



Grid: 128 x 128 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0	E_{min} / E_{max}
269	46	395	0.172	0.117

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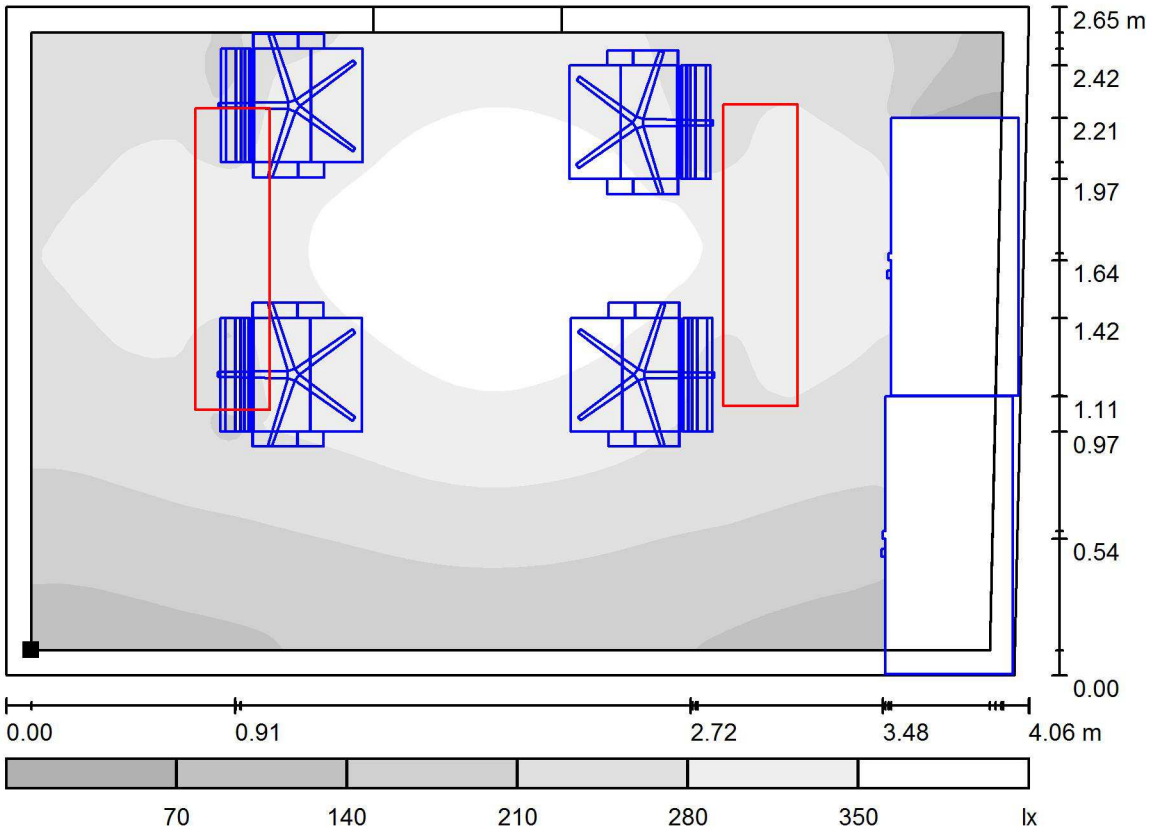
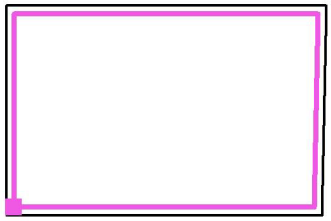
Standard Office / Workplane / Greyscale (E)



Scale 1 : 30

Position of surface in room:
Working plane with 0.100 m
Boundary Zone
Marked point:
(73.574 m, 63.408 m, 0.750 m)



Grid: 128 x 128 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0	E_{min} / E_{max}
269	46	395	0.172	0.117

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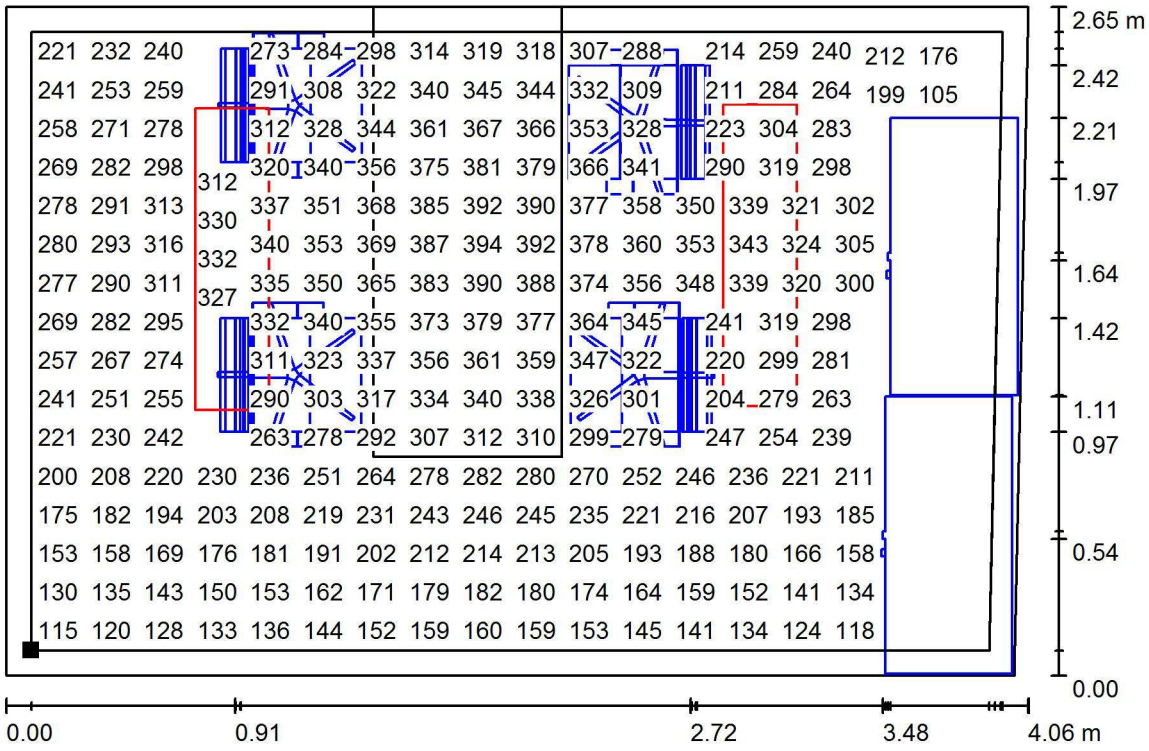
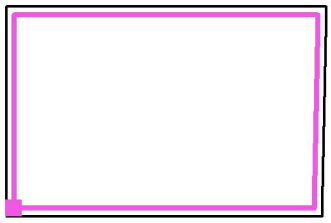
Standard Office / Workplane / Value Chart (E)



Values in Lux, Scale 1 : 30

Not all calculated values could be displayed.

Position of surface in room:
Working plane with 0.100 m
Boundary Zone
Marked point:
(73.574 m, 63.408 m, 0.750 m)



Grid: 128 x 128 Points

E_{av} [lx]	E_{min} [lx]	E_{max} [lx]	u0	E_{min} / E_{max}
269	46	395	0.172	0.117