

Experts in Energy Saving Lighting and Heating

Chalfont St Giles Junior School

Chalmor was commissioned by Buckinghamshire County Council to put forward suggestions for energy saving lighting design, with supply, installation and commissioning. Chalmor undertook a survey and specified replacement lighting, with controls to enhance efficiency, plus heating controls to further reduce energy consumption.

Chalmor's ReFit T5 system was used to replace less efficient T8 fittings in classrooms. This direct replacement decision was influenced by the risk of asbestos in ceilings. Occupancy sensors were fitted to save energy whilst classrooms were not in use. The sensors were wall mounted, again considering asbestos risk. Ambient light sensors were used in perimeter lighting, to switch lights off when daylight was sufficient.

The multipurpose hall required special attention due to its wooden tongue and groove vaulted ceiling, with flush mounted lighting. The school had been experiencing frequent failure in this hard to reach area, requiring a scaffolding tower for maintenance.

Three alternative lighting designs were considered, to provide adequate light levels, using the least energy and camouflaging the holes left by previous lighting so the school did not have to repair or redecorate the ceiling. A long-life system was key, to reduce maintenance requirements.

Occupancy and daylight controls were added, plus switches to light the stage independently for school productions.

The hall project was scheduled over school holidays, due to its frequent use for assemblies, lunches, drama and PE classes. Through liaison with the premises team, Chalmor was able to install the classrooms during school hours. Work was completed one classroom at a time by small teams of engineers, enabling the school to move classes for short time periods, minimising disruption.

A schedule of equipment was developed for each area, which provided costs for the school and could be used by the engineers for installation and quality surveyors for signoff.

Careful planning and an understanding of the health and safety requirements in this school environment ensured a smooth running project with successful delivery. Chalfont St Giles School were so happy with the results of the hall and classroom projects, that another project was then scheduled to replace lighting in the cloakrooms.

Object : Sports Hall
Installation : Lighting
Project number :
Date : 03.10.2011

1 Luminaire data

1.1 Chalmor, Performance (PCE/3/80/OPEN)

1.1.1 Data sheet

Manufacturer: Chalmor

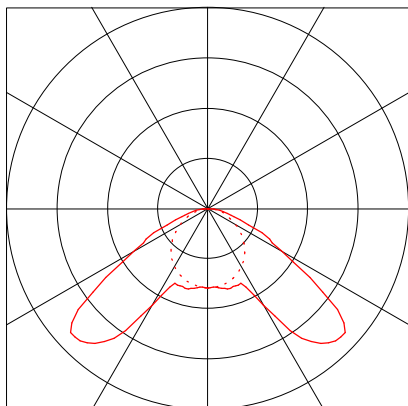
PCE/3/80/OPEN Performance

Luminaire data

Luminaire efficiency : 80.7787%
Luminaire efficacy : 57.77 lm/W
Classification : A30 ↓100.0% ↑0.0%
CIE Flux Codes : 34 76 97 100 81
Control gear :
System power : 258 W
Length : 1480 mm
Width : 337 mm
Height : 100 mm

Equipped with

Quantity : 3
Designation : T5 PHILIPS
80W 840
Colour :
Luminous flux : 6150 lm

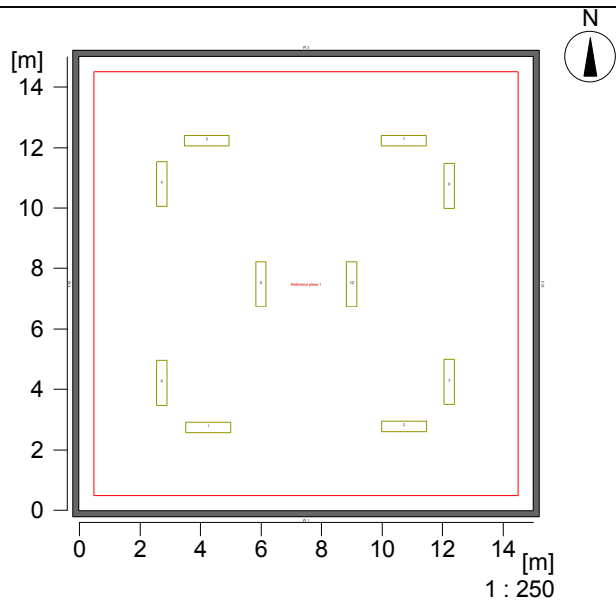


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2 Room 1

2.1 Description, Room 1

2.1.1 Floor plan



Room data:

W1 : 15.00	50.0 %
W2 : 15.00	50.0 %
W3 : 15.00	50.0 %
W4 : 15.00	50.0 %
W5 : ----	----
W6 : ----	----
Floor: ----	20.0 %
Ceiling: ----	20.0 %
Room height [m]:	4.50
Height of reference plane [m]:	0.00
Height of luminaire plane [m]:	4.50

Reflectance:

50.0 %
50.0 %
50.0 %
50.0 %

20.0 %
20.0 %

Structural elements

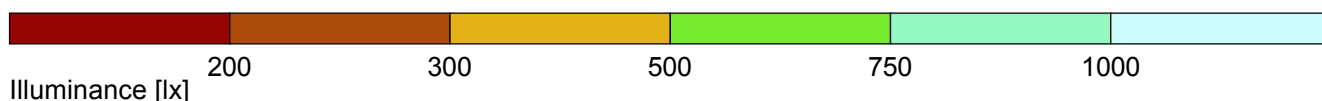
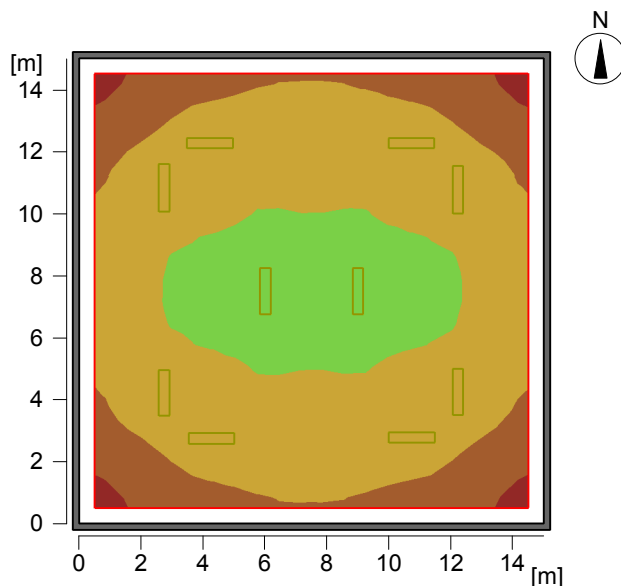
Pi : Pillar
Tr : Partition
Wo: Real working surface
m : Virtual measuring area
S : Skylight
W : Picture
Wi : Window
DF: Door
F : Furniture

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2 Room 1

2.2 Summary, Room 1

2.2.1 Result overview, Reference plane 1



General

Calculation algorithm used	Average indirect fraction
Height of evaluation surface	0.00 m
Height of luminaire plane	4.50 m
Maintenance factor	0.80
Total luminous flux of all lamps	184500 lm
Total power	2580 W
Total power per area (225.00 m ²)	11.47 W/m ² (2.85 W/m ² /100lx)

Illuminance

Average illuminance	Eav	402 lx
Minimum illuminance	Emin	180 lx
Maximum illuminance	E _{max}	676 lx
Uniformity g1	E _{min} /E _m	1:2.24 (0.45)
Uniformity g2	E _{min} /E _{max}	1:3.76 (0.27)

Type No.\Make

1	10	Chalmor	
		Order No.	: PCE/3/80/OPEN
		Luminaire name	: Performance
		Equipment	: 3 x T5 PHILIPS 80W 840 / 6150 lm

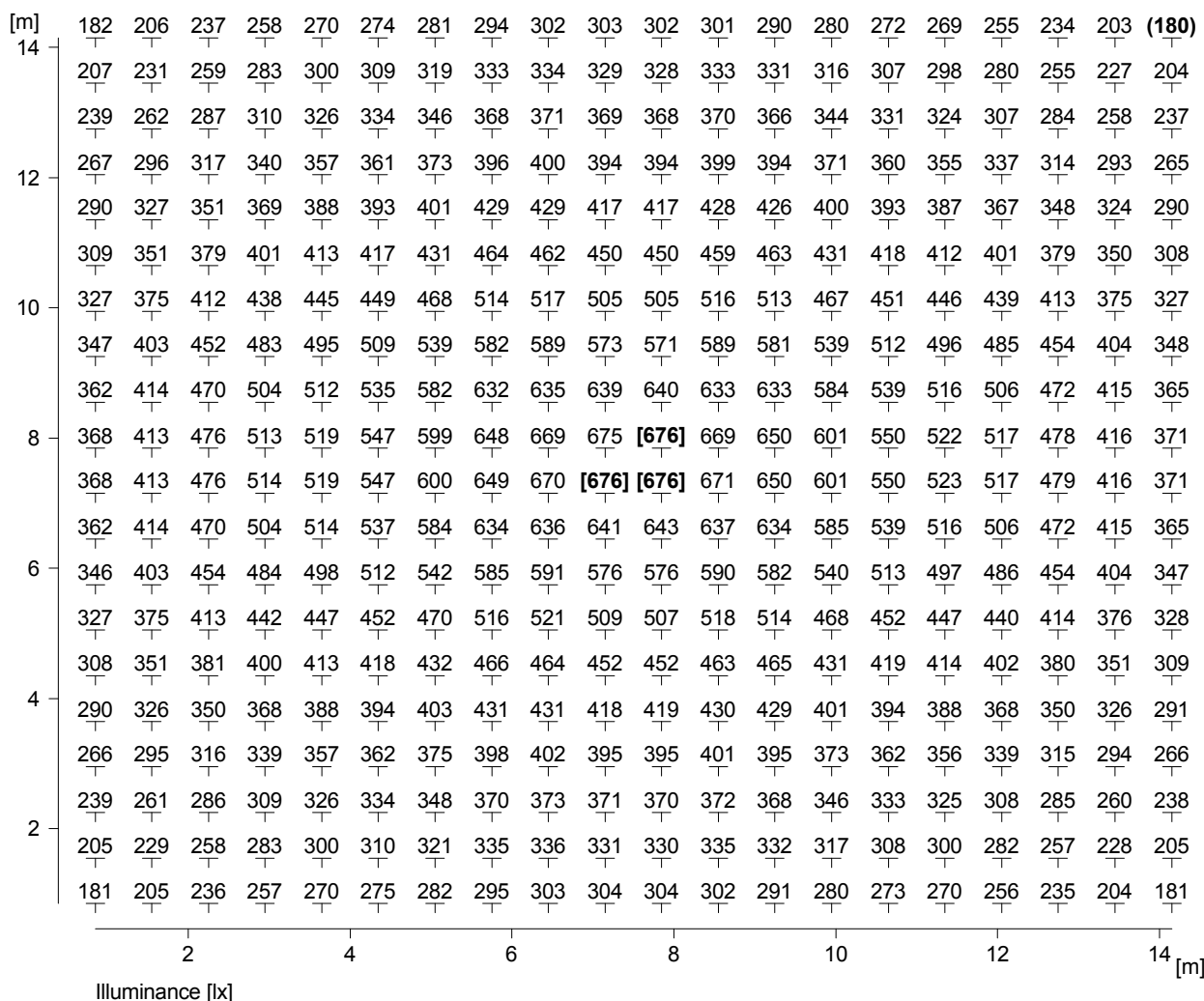
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2 Room 1

2.3 Calculation results, Room 1

2.3.1 Table, Reference plane 1 (E)



Height of the reference plane	:	0.00 m
Average illuminance	Eav	: 402 lx
Minimum illuminance	Emin	: 180 lx
Maximum illuminance	Emax	: 676 lx
Uniformity g1	Emin/Eav	: 1 : 2.24 (0.45)
Uniformity g2	Emin/Emax	: 1 : 3.76 (0.27)