



Hanger 4

Installation : National Museum of Flight

Project number : 9637

Customer : Redman Design

Processed by : Kat Ellerington

Date : 28.10.2015

Project description:

The attached lighting calculation has been carried out by High Technology Lighting using all available information at time of creation. Major assumptions that are made will be mentioned at the time of release of the calculations to the client. Please thoroughly review the attached lighting calculation before placing an order, to ensure that the scheme complies with all of the requirements of the project. Please let High Technology Lighting know of any amendments or further calculations required.

The following values are based on exact calculations on calibrated lamps, luminaires and their arrangement. In practice, gradual divergences can occur.

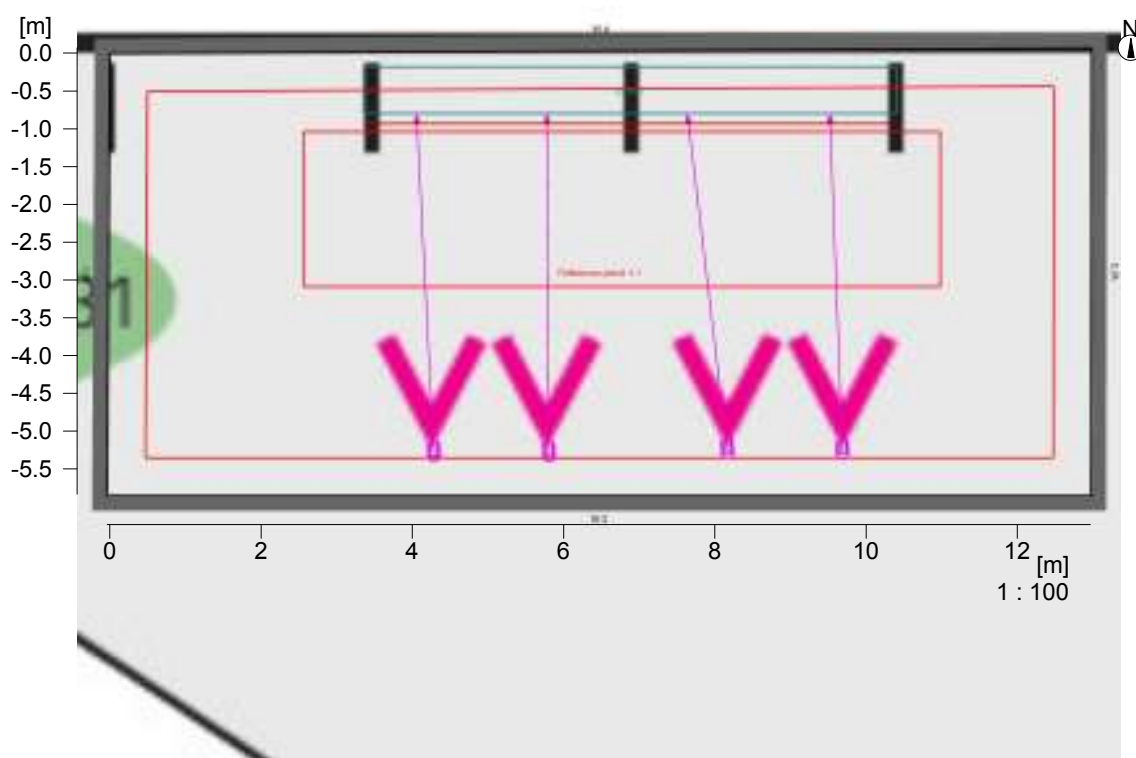
Guarantee claims for luminaire data are excluded.

Relux and the luminaire manufacturers accept no liability for consequential damage and damage which is occasioned to the user or to third parties.

1 Graphic Display with spotlight 4000lm

1.1 Description, Graphic Display with spotlight 4000lm

1.1.1 Floor plan

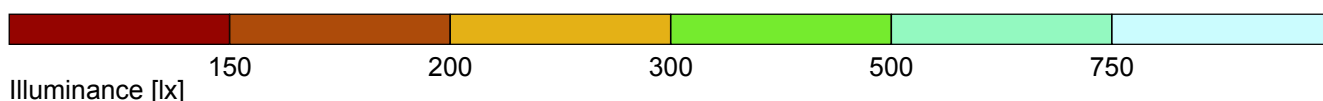
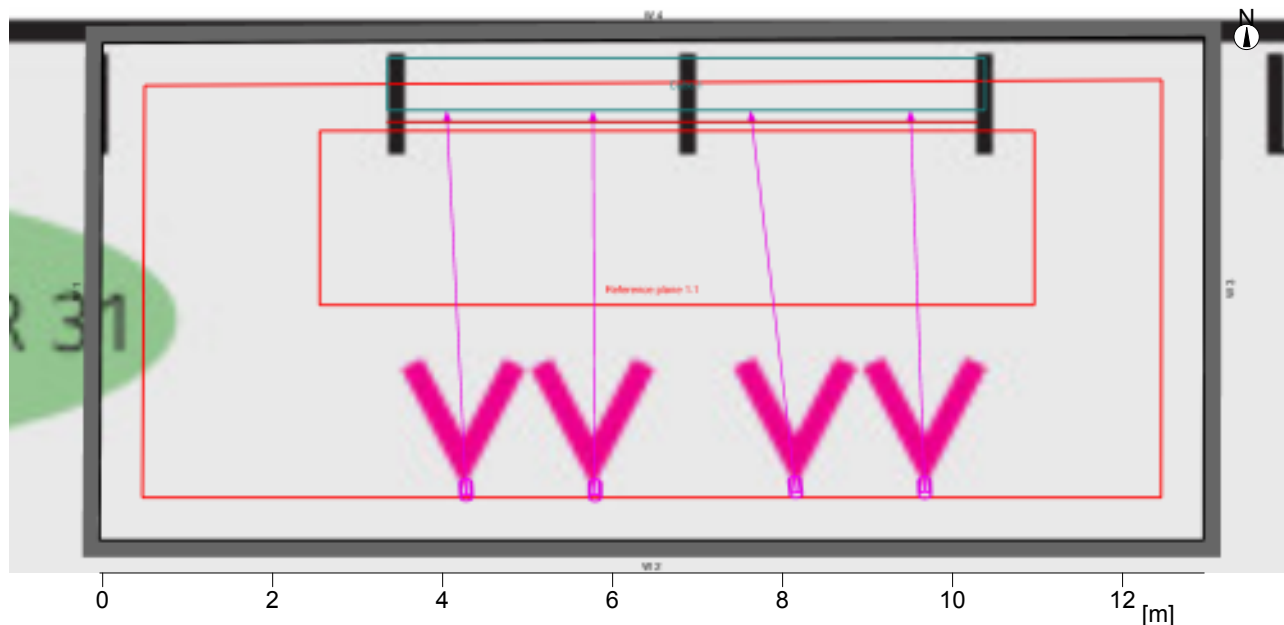


Wall	x	y	Length	Reflectance
1	39.16 m	54.23 m	5.83 m	50.0 %
2	52.15 m	54.23 m	12.99 m	50.0 %
3	52.15 m	60.13 m	5.91 m	50.0 %
4	39.19 m	60.06 m	12.96 m	50.0 %
Floor				20.0 %
Ceiling				70.0 %
Room height		5.50 m		
Height of reference plane		0.00 m		

1 Graphic Display with spotlight 4000lm

1.2 Summary, Graphic Display with spotlight 4000lm

1.2.1 Result overview, Graphics



General

Calculation algorithm used	Average indirect fraction
Height of luminaire plane	4.50 m
Maintenance factor	0.80
Total luminous flux of all lamps	16000 lm
Total power	188 W
Total power per area (76.15 m ²)	2.47 W/m ²

Illuminance

Average illuminance	Eav	270 lx
Minimum illuminance	Emin	143 lx
Maximum illuminance	Emax	380 lx
Uniformity Uo	Emin/Em	1:1.89 (0.53)
Diversity Ud	Emin/Emax	1:2.66 (0.38)

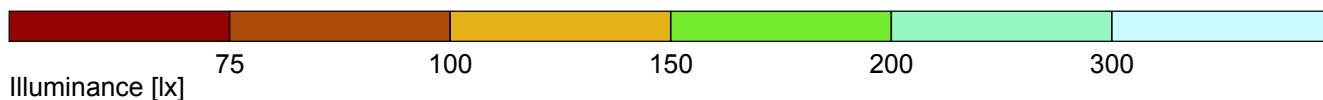
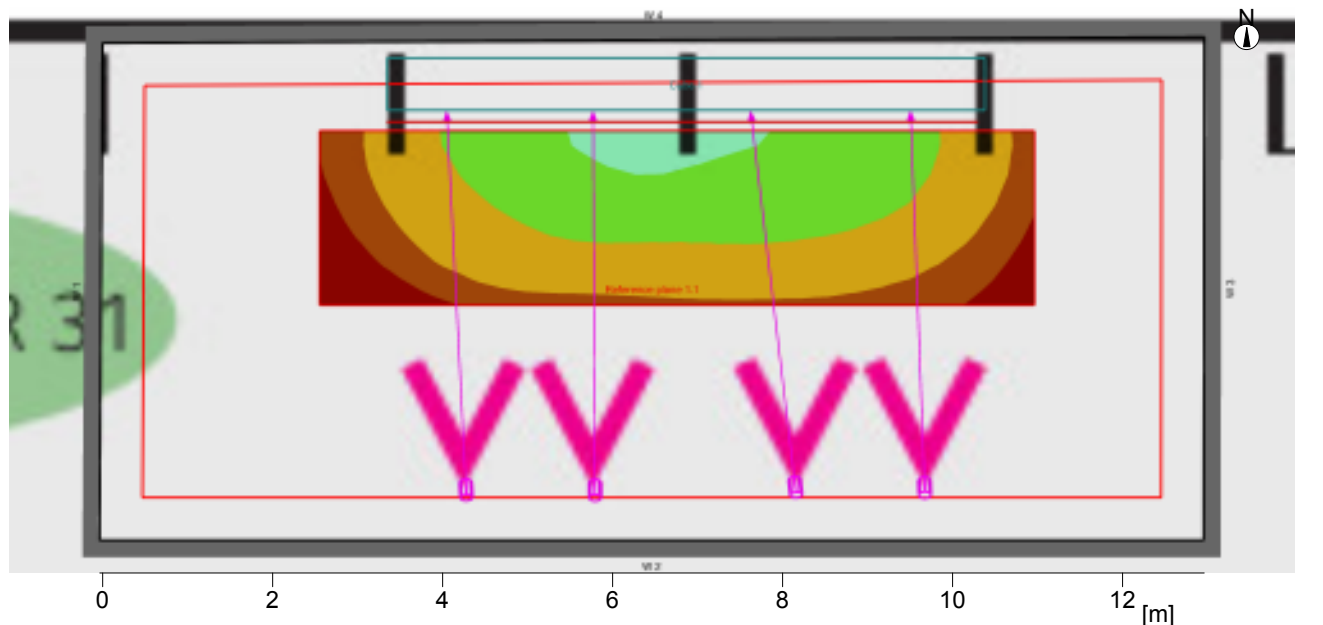
Type No.\Make

2	4	Xicato Inc, San Jose, CA USA (http://www.xicato.com)
		Order No. : QMR111.4000.40deg
		Luminaire name : QMR111.4000.40deg
		Equipment : 1 x XTM 4000LM 30k / 4000 lm



1.2 Summary, Graphic Display with spotlight 4000lm

1.2.2 Result overview, Floor



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	16000 lm
Total power	188 W
Total power per area (76.15 m ²)	2.47 W/m ²

Illuminance

Average illuminance	Eav	135 lx
Minimum illuminance	Emin	43 lx
Maximum illuminance	Emax	210 lx
Uniformity U _o	Emin/Emax	1:3.15 (0.32)
Diversity U _d	Emin/Emax	1:4.91 (0.2)

Type No.\Make

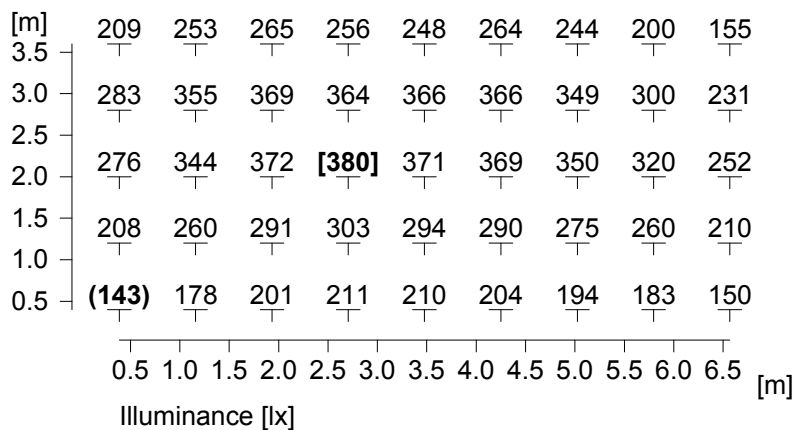
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		Luminaire name : QMR111.4000.40deg
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1 Graphic Display with spotlight 4000lm

1.3 Calculation results, Graphic Display with spotlight 4000lm

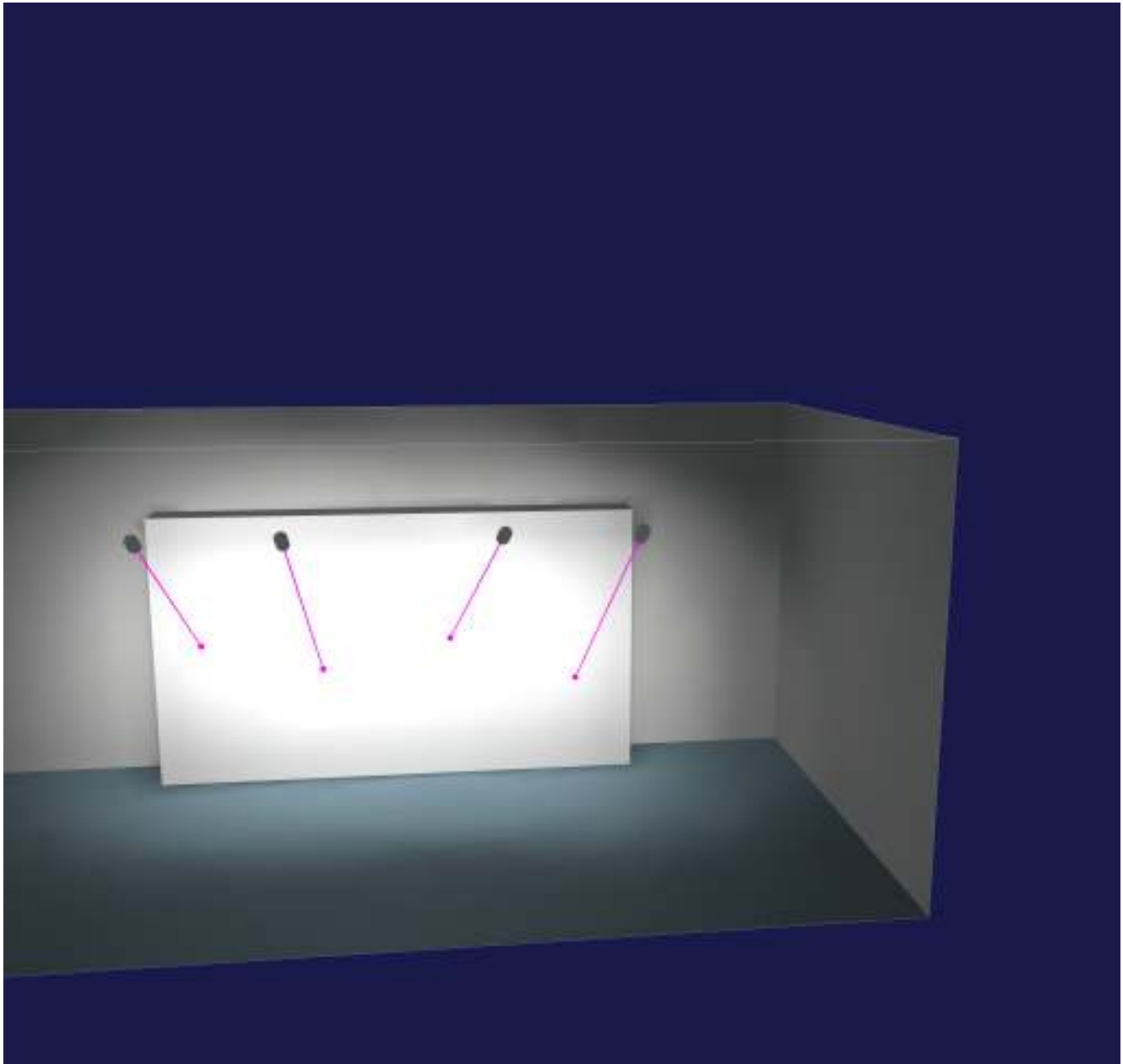
1.3.1 Table, Graphics (E)



Average illuminance	Eav	: 270 lx
Minimum illuminance	Emin	: 143 lx
Maximum illuminance	Emax	: 380 lx
Uniformity Uo	Emin/Eav	: 1 : 1.89 (0.53)
Diversity Ud	Emin/Emax	: 1 : 2.66 (0.38)

1.3 Calculation results, Graphic Display with spotlight 4000lm

1.3.3 3D luminance, View 1



Luminance in the scene

Minimum: : 0 cd/m²

Maximum: : 58.6 cd/m²