Lambda Research Corporation

LUMINARIES

Luminaries

- A luminary is a great way to add visual appeal to your landscape.
- Add value, beauty and elegance to your property.
- Available in an endless array of styles, sizes and colors, luminaries can accommodate any part of your landscape.
- The output characteristics of luminaires describe the way in which a lighting fixture performs its main function, that of distributing luminous flux emitted from the lamp in a space.

Application

The most common uses for luminaries for commercial applications are:

- Commercial Buildings
- Streets
- Parks
- Public areas
- Car Parks
- Company Signage

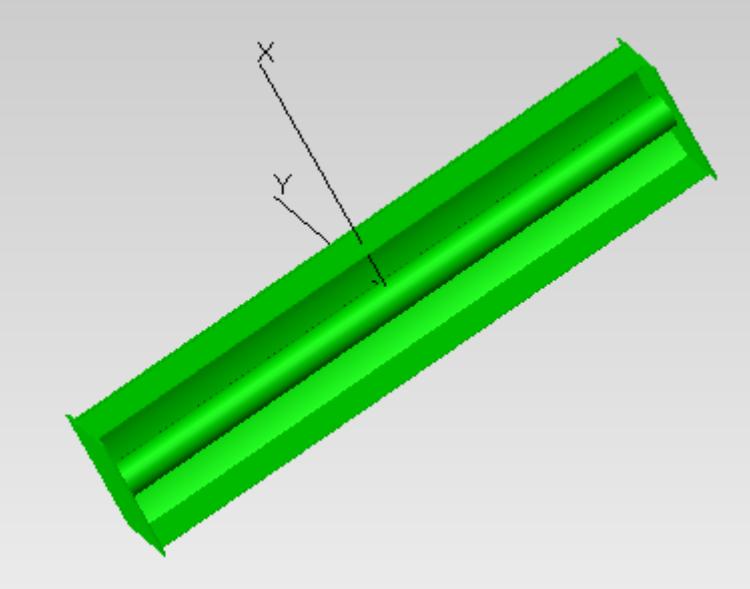
The most commons uses for luminaries for residential applications are:

- Patios
- Pathways and walkways
- Around swimming pools
- Garden Beds
- Driveways

Design Luminaries

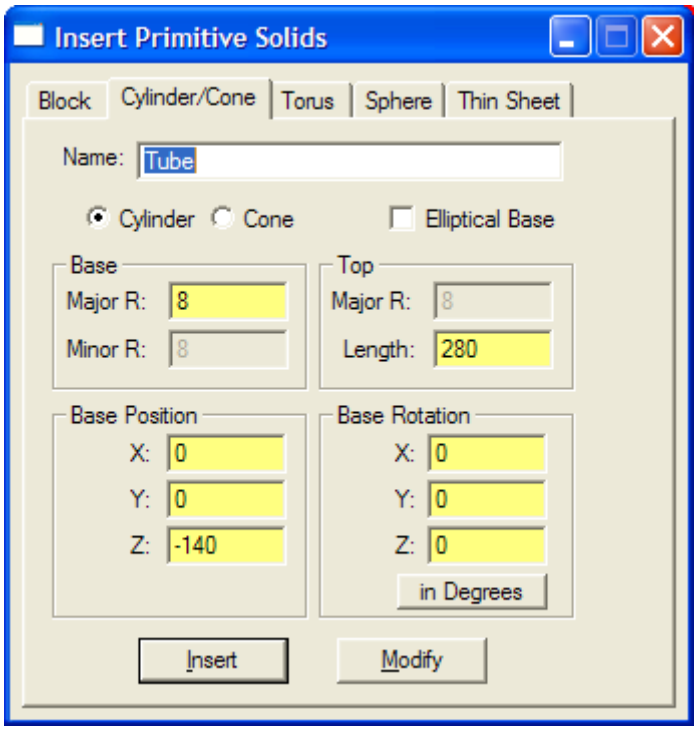
To Design Luminaries, we need following Object :

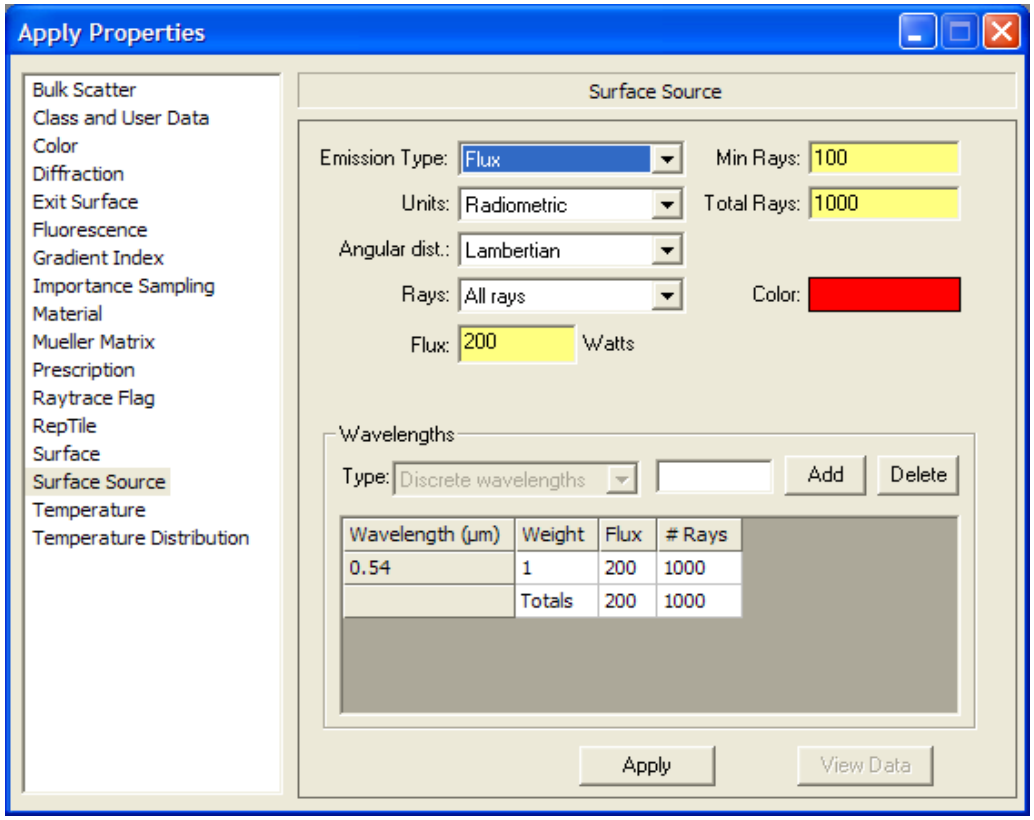
- Source (Bulb, Flourescent Tube, etc)
- Back Reflector or Diffuse Boundary



Design TUBELIGHT

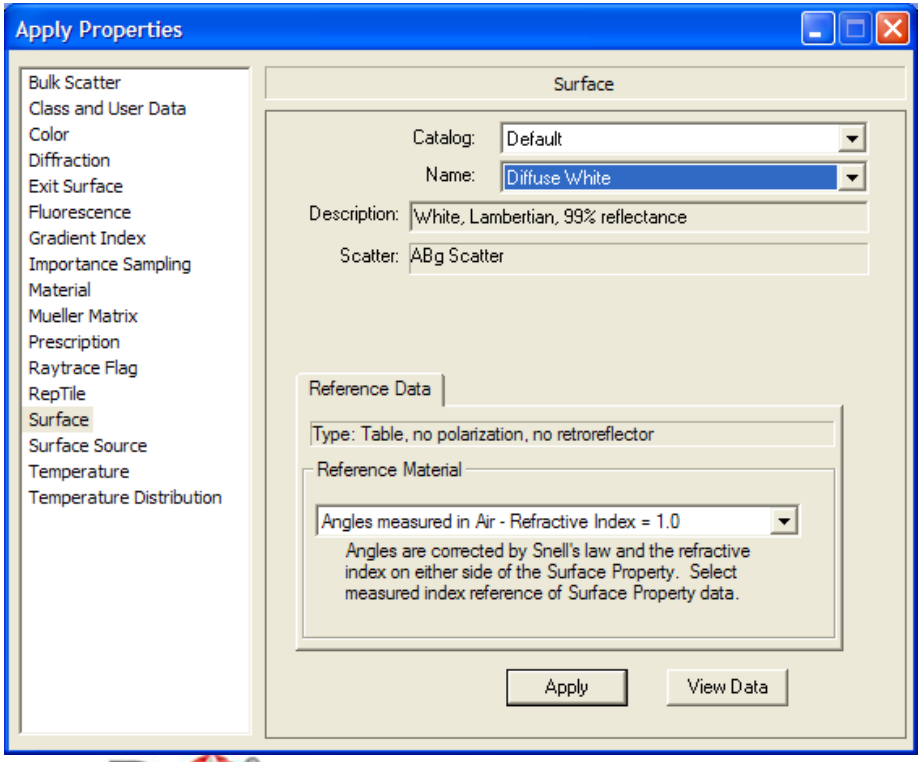
- Define Tube by go to Insert > Primitive Solid > Cylinder/Cone
- Define Tube as Light Souce by Select Surface 0

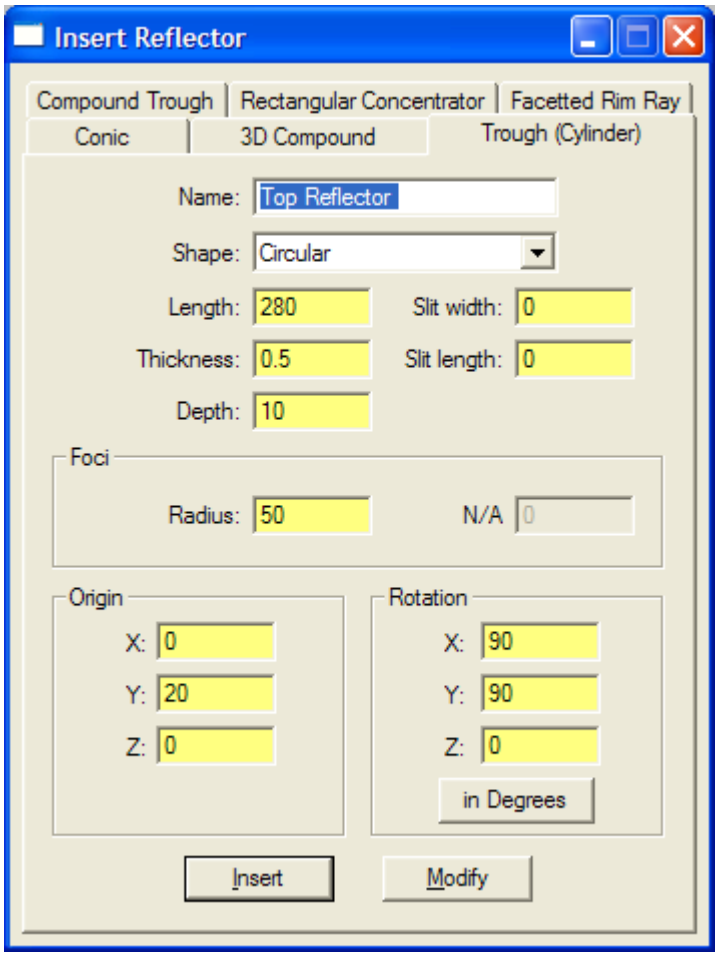




Top Reflector

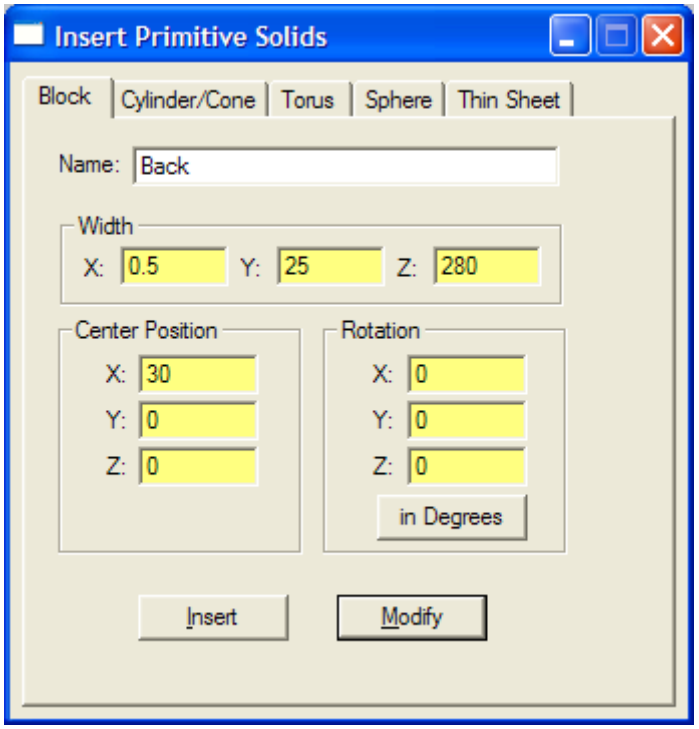
- Top Reflector can be define by Go to Insert > Reflector > Trough
- Define Inner Surface 4 as perfect Diffuser

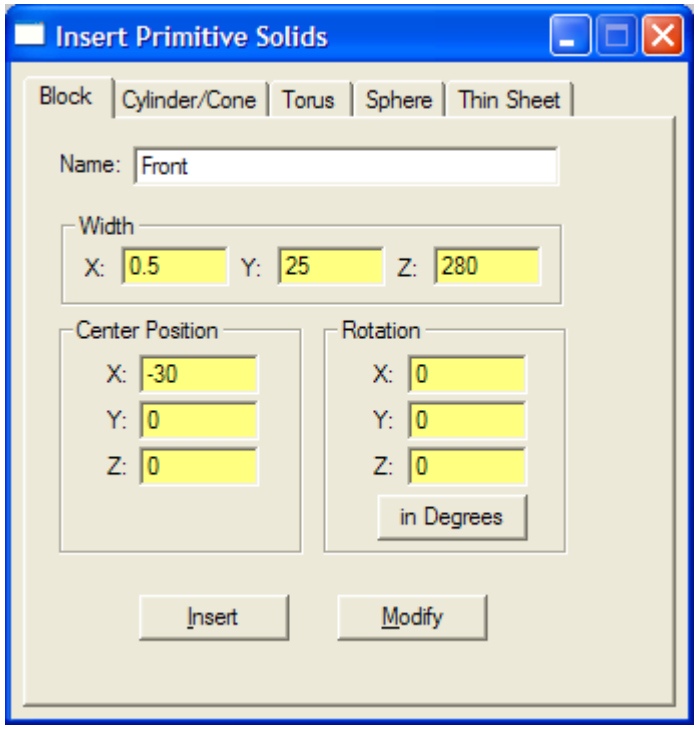




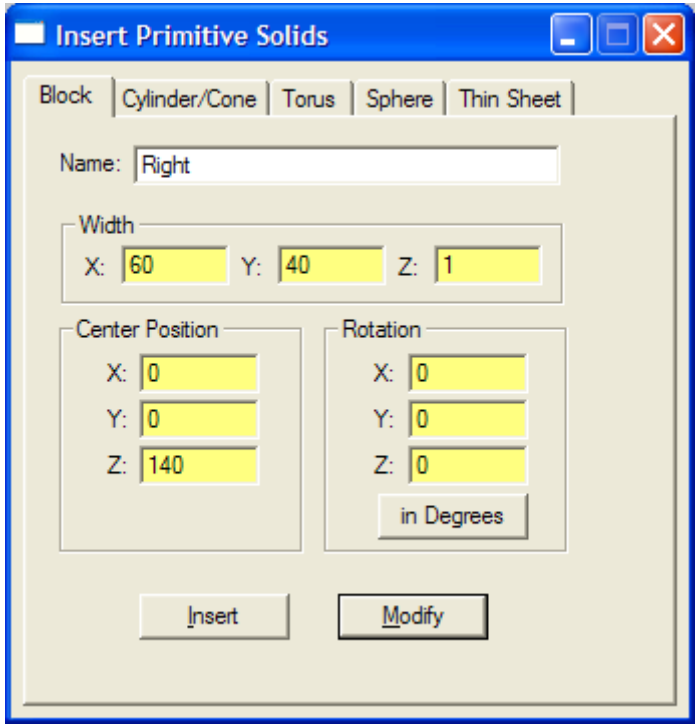
Side Walls

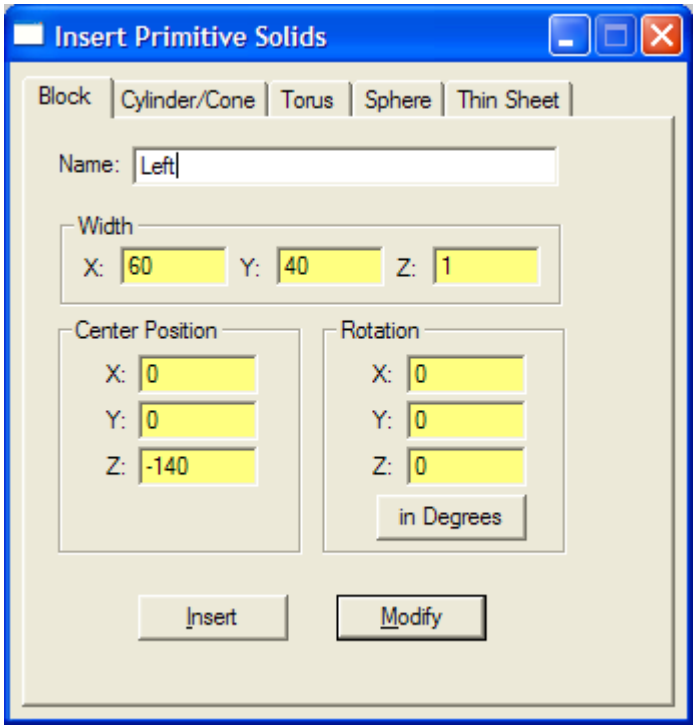
- Define Side walls by Go to Insert > Primitive Solids > Block as below





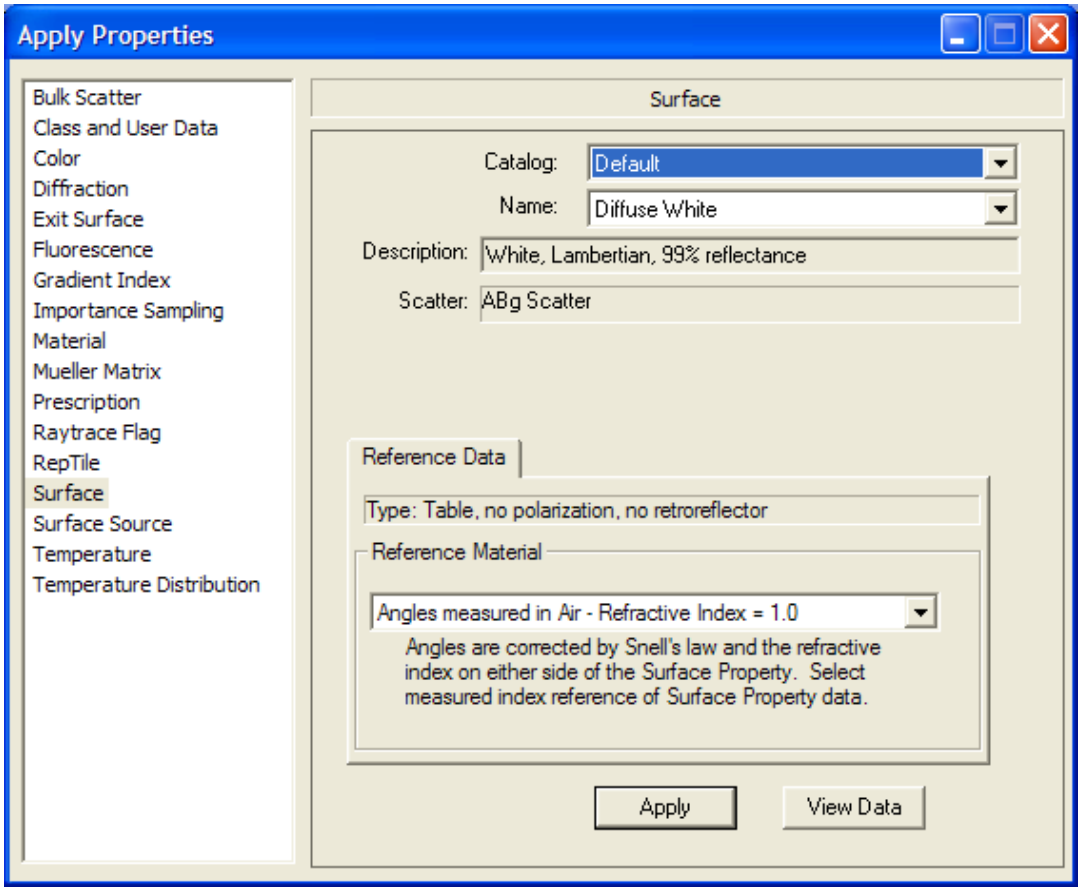
Side Walls


Insert Primitive Solids
Block
Cylinder/Cone
Torus
Sphere
Thin Sheet
Name: Right
Width
X: 60
Y: 40
Z: 1
Center Position
X: 0
Y: 0
Z: 140
Rotation
X: 0
Y: 0
Z: 0
in Degrees
Insert
Modify


Insert Primitive Solids
Block
Cylinder/Cone
Torus
Sphere
Thin Sheet
Name: Left
Width
X: 60
Y: 40
Z: 1
Center Position
X: 0
Y: 0
Z: -140
Rotation
X: 0
Y: 0
Z: 0
in Degrees
Insert
Modify

Surface Properties of Side Wall

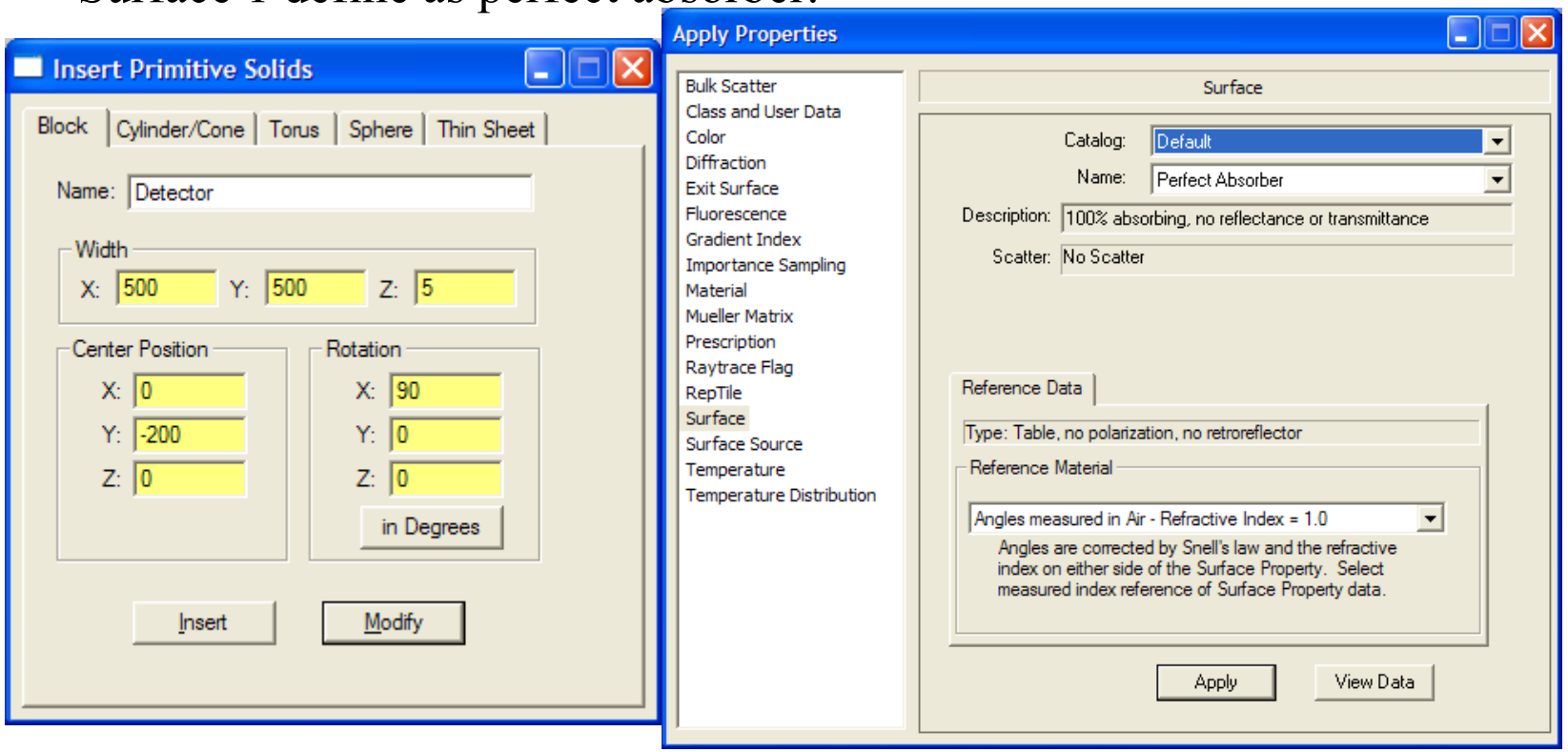
- Select Inner Surface and Define Diffuse white



Detector

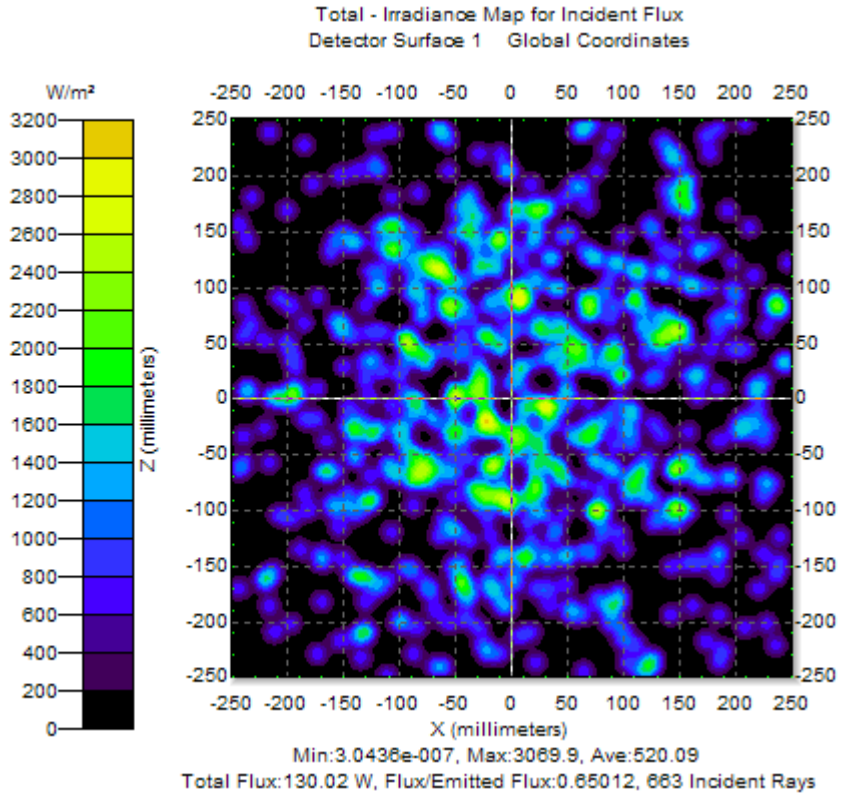
We can define detector which act as Floor with following properties & Location:

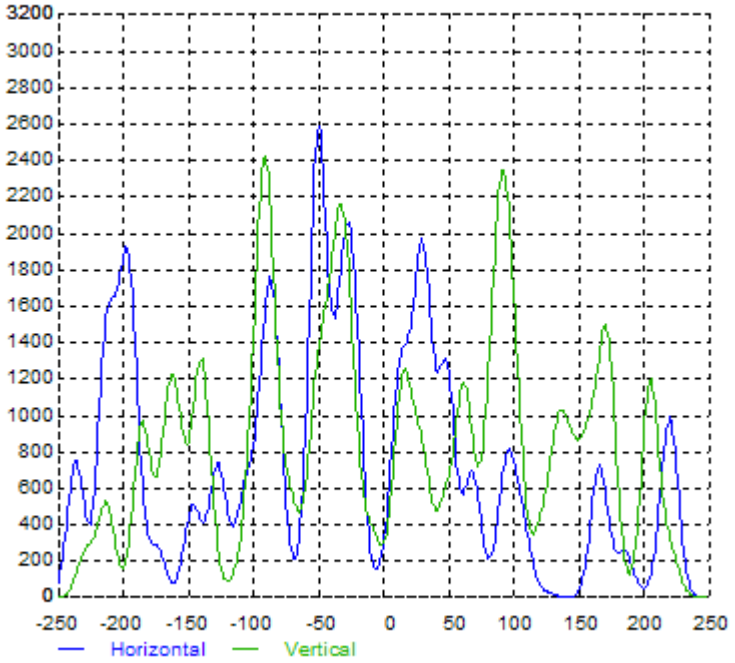
- Surface 1 define as perfect absorber.



Analysis

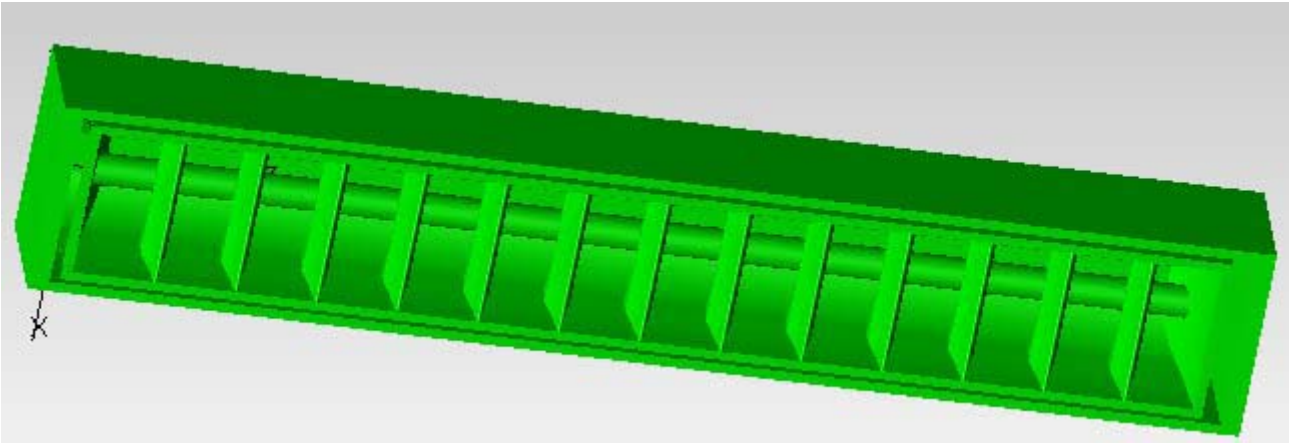
- Raytrace > Trace Rays



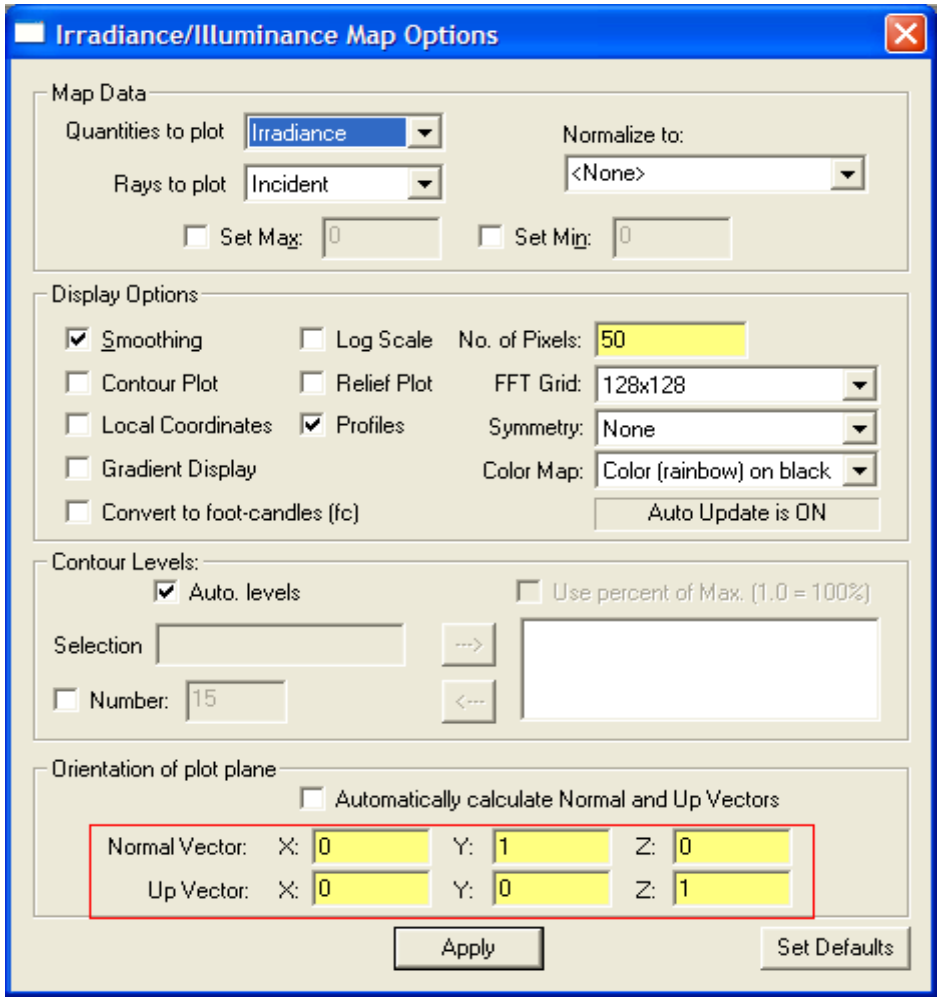


Modify

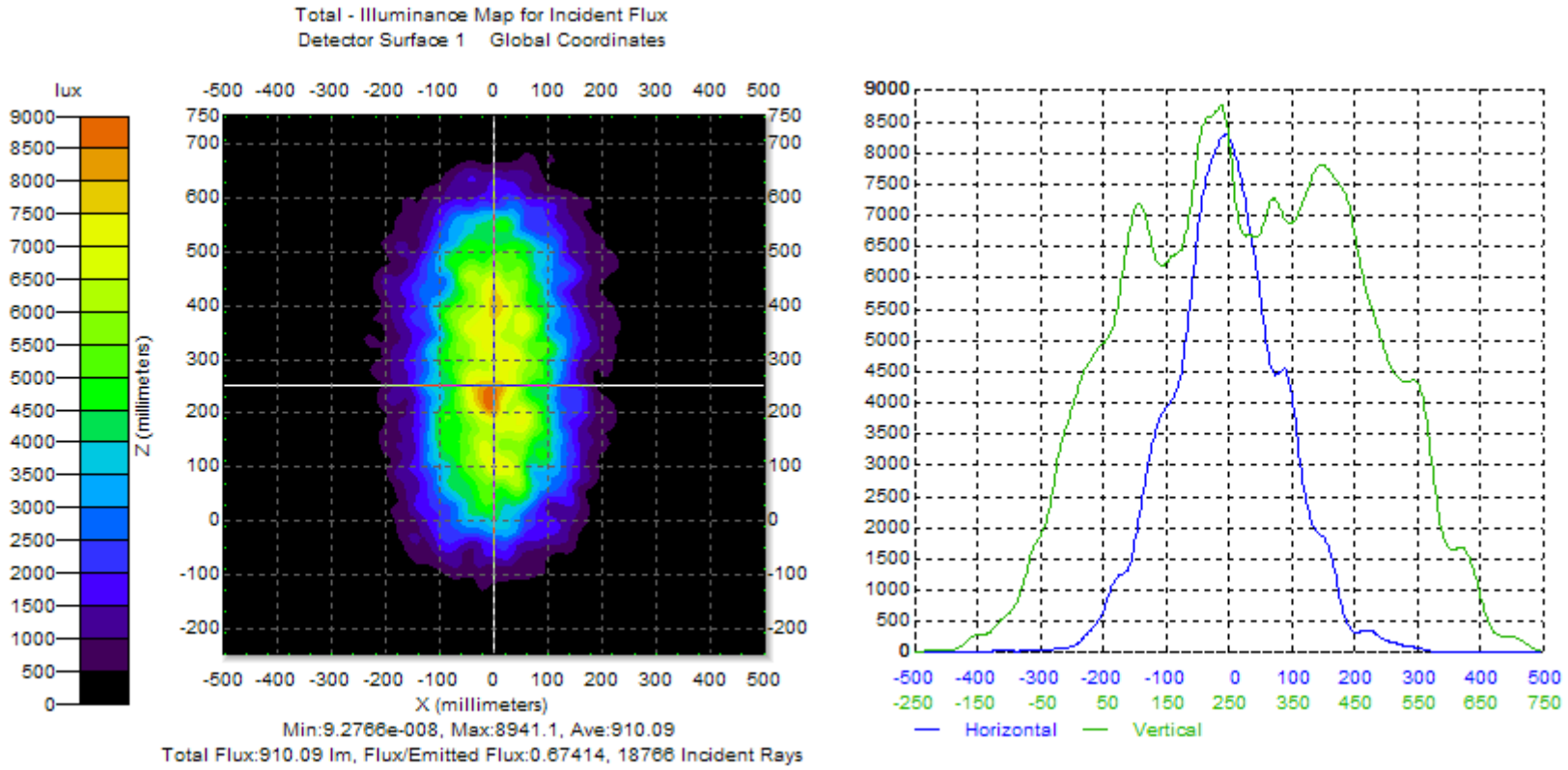
- Define Luminaries with introduce “Grillet”



Detector


Irradiance/Illuminance Map Options
Map Data
Quantities to plot
Irradiance
Normalize to:
<None>
Rays to plot
Incident
Set Max:
0
Set Min:
0
Display Options
Smoothing
Log Scale
No. of Pixels:
50
Contour Plot
Relief Plot
FFT Grid:
128x128
Local Coordinates
Profiles
Symmetry:
None
Gradient Display
Color Map:
Color (rainbow) on black
Convert to foot-candles (fc)
Auto Update is ON
Contour Levels:
Auto. levels
Use percent of Max. (1.0 = 100%)
Selection
--->
Number:
15
<---
Orientation of plot plane
Automatically calculate Normal and Up Vectors
Normal Vector: X: 0 Y: 1 Z: 0
Up Vector: X: 0 Y: 0 Z: 1
Apply
Set Defaults

Analysis


Total - Illuminance Map for Incident Flux
Detector Surface 1 Global Coordinates
lux
9000
8500
8000
7500
7000
6500
6000
5500
5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Z (millimeters)
-500 -400 -300 -200 -100 0 100 200 300 400 500
750
700
600
500
400
300
200
100
0
-100
-200
X (millimeters)
Min:9.2766e-008, Max:8941.1, Ave:910.09
Total Flux:910.09 lm, Flux/Emitted Flux:0.67414, 18766 Incident Rays
-500 -400 -300 -200 -100 0 100 200 300 400 500
-250 -150 -50 50 150 250 350 450 550 650 750
Horizontal
Vertical