

Nanoscribe Design Agent Report

Project: 5x5_Cylinder_Array_Height5_20251217_121928

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User Prompt

generate a 5x5 array of cylinders all of height 5, the radius should be 1 for each, the spacing center to center is 5

Design Intent

The user's design goal is to create a symmetrical 5x5 array of cylinders, each with a uniform height of 5 and a radius of 1, ensuring that the center-to-center spacing between each cylinder is consistently set at 5 units. This arrangement emphasizes geometric regularity and optical coherence in the layout of the cylinders.

Geometry Specification

```
{
  "array": {
    "rows": 5,
    "cols": 5,
    "spacing_um": 5.0
  },
  "meta_atoms": [
    {
      "id": 1,
      "shape": "cylinder",
      "height_um": 5.0,
      "radius_um": 1.0
    }
  ],
  "pattern_map": [
    [
      1,
      1,
      1,
      1,
      1,
      1
    ],
    [
      1,
      1,
      1,
      1,
      1,
      1
    ],
    [
      1,
      1,
      1,
      1,
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    ],
    [
      1,
      1,
      1,
      1,
      1,
      1
    ],
    [
      1,
      1,
      1,
      1,
      1,
      1
    ]
  ]
}
```

```

[  

  1,  

  1,  

  1,  

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  1  

],  

[  

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  1,  

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],  

[  

  1,  

  1,  

  1,  

  1,  

  1  

]  

]
}

```

Generated Meta-Atoms

ID	Shape	Properties
1	cylinder	height_um=5.0, radius_um=1.0

GWL Files Generated

meta_1.gwl

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%  

% Unique Meta-Atom (Cylinder)  

% Objective: 63x  

%%%%%%%%%%%%%%%  

var $objective = 63  

local $height = 5.0  

local $radius = 1.0  

local $voxel_lateral = 0.1  

local $axial_step = 0.3  

local $axial_overlap = 0.5  

local $dz = $axial_step * (1 - $axial_overlap)  

local $slices = ceil($height / $dz)  

local $hatch = $voxel_lateral  

  

XOffset 0  

YOffset 0  

ZOffset 0  

PowerScaling 0.  

...
```

main_array.gwl

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%  

% Array of Cylinders  

% Objective: 63x  

% Each cylinder: height 5 μm, radius 1 μm  

% Center-to-center spacing: 5 μm
```

```
%%%%%%%%%%%%%%
var $objective = 63
XOffset 0
YOffset 0
ZOffset 0
PowerScaling 0.6
LaserPower 40
ScanSpeed 100
FindInterfaceAt 0.5
LineNumber 1
local $rows = 5
local $cols = 5
local $pitch = 5.0
local $xstart = -($pitch * ($cols - 1) / 2.0)
local
...
.
```

Run Statistics

Metric	Value
Total Runtime	29.20 seconds
Input Tokens	32
Output Tokens	329
Total Tokens	361
Meta-Atoms Generated	1
GWL Files Created	2