

# Nuclear Reactor

(Redirected from [Nuclear Reactors](#))

## Nuclear Reactors

Available as soon as you've reached the Moon (late HV-early EV, or just get some titanium from aluminum gravel), nuclear reactors are a strong power source for EV and IV. The process of creating a reactor is quite complex and risks huge nuclear explosions. You are strongly advised to try all designs in a [reactor planner](https://github.com/GTNewHorizons/Ic2ExpReactorPlanner) (<https://github.com/GTNewHorizons/Ic2ExpReactorPlanner>) before using them, and to encase your reactors in reinforced materials (2 layers minimum) or warded glass (thaumcraft) to prevent explosions from destroying the area. Test your reactor in creative first! [Nuclear Control 2](https://ftb.fandom.com/wiki/IC2_Nuclear_Control) ([https://ftb.fandom.com/wiki/IC2\\_Nuclear\\_Control](https://ftb.fandom.com/wiki/IC2_Nuclear_Control)) is in the pack allowing various automation and information to be done.

There are in general two types of reactors, **power producing** and **breeder** (for the items/rods). For the power ones, you want the greatest efficiency (fewer rods, more power). For item breeders, you just want to consume as many rods as you can as fast as possible. For rod breeders, you want as many neighboring fuel cells as possible while generating the least amount of heat. Stacking also comes into play for large numbers, since they are not conveniently designed for that normally.

For items, you can look at this handy chart. Note that some items were excluded (for example getting thorium back from thorium rods). Note that the EU and Heat #s are for single rods (EU is /t, heat is /s as they only outputs each second), and that the EU should be multiplied by 10 for the actual amount per tick. See the planner for more details (make sure to grab 2.4.2+). Any rod that has the same heat values is equivalent in a planner design, and anything that produces less heat can also be substituted, unless it's a MOX-type design. Keep in mind that while quad thorium and dual uranium have the same heat levels, this is not true when placed next to other rods.

### Data

#### Fuel Data

Name	EU/t	Heat Produced/s	Durability	Produces	Produces (single only)
Thorium	10/20/30/40/50	1/3/8/10/15	50000	Lutetium	Th-232, Krypton
Uranium	50/100/150/200/250	4/12/24/40/60	20000	Plutonium (IC2)	Pu-239, Krypton
High Density Uranium	100/200/300/400/500	4/12/24/40/60	20000	Plutonium (IC2)	Pu-239, Krypton
MOX	50/100/150/200/250	4/12/24/40/60	10000	Plutonium (IC2)	Pu-239, Pu-241, Krypton
Naquadah	50/100/150/200/250	4/12/24/40/60	100000	Naquadria	N/A
Naquadria	50/100/150/200/250	4/12/24/40/60	100000	-	N/A
Tiberium	50/100/150/200/250	2/6/12/20/30	50000	Zirconium, Xenon	N/A
The Core	108800	19584	100000	Zirconium, Naquadria	N/A
Lithium	0	0	10000	Tritium	N/A

#### Power Production Reactors

- **EU reactors** produce raw energy directly with a 50% penalty. Use cables or transformers to transform the power into the GT type.
- **Fluid reactors** produce hot coolant. Use a [Large heat exchanger](#) to convert the Hot Coolant to HP Steam/Steam, and HP Steam Turbines/LP Steam Turbines to generate energy with very high efficiency. See the [Fluid Reactors](#) page for details.
- **Vacuum reactors** produce EU, but rely on cooling the cells in a vacuum freezer to keep it from exploding. See the [Vacuum Reactors](#) page to find out how to use them, and also redstone automation info.
- **Wrench reactors** are a meme, you can read about them here: [Wrench Cooled IC2 Fission Reactor](#).

#### Fuel Types

- **Thorium** is the cheapest and easiest to obtain, obtainable in large quantities from coal ore or thorium ore found in the nether. It lasts a long time but doesn't make much power. You need to make these to get Lutetium for Americium later on.
- **Uranium** is obtained at Mars' moons from a couple ores. It doesn't last as long as thorium, but makes more power.
- **MOX** is obtained by mixing plutonium (from depleted uranium rods, centrifuging uranium dust, or ores on later planets) with uranium. It returns enough plutonium to sustain itself. It outputs more power the hotter the reactor is.
- **Naquadah** and **Naquadria** are obtained from mid-game ores, and are generally best used in naquadah generators.

- **The Core** is made with naquadah and tiberium. Only use it with coolant cells!

### Breeder Reactors

- **Rod Breeder Reactors** produce very little EU but instead transform a Breeder Rod into a different resource. Each reactor tick, all breeding targets get charged by the number of active rods they are next to. The best fuel rods for these reactors are Thorium because they generate the least amount of heat. Using a hotter fuel rod will produce more EU, but won't speed up the breeding process at all.
- **Item Breeder Reactors** focus on consuming fuel rods as fast as possible to generate resources obtained from centrifuging depleted cells.

### Breeding Rods

- **Lithium** breeder rods are used to make tritium.
- **Glowstone** breeder rods are used to make sunnarium.

**Note: This information may not be accurate in the latest version. Always test designs in creative mode first before using them in your base!**

### Currently known bugs:

- Prior to version 2.2.8, Glowstone breeder rods unintentionally interact with fuel rods, creating additional heat (and therefore requiring more cooling than they should).

Sample Power Reactors [\[Collapse\]](#)

The EU/t values given are for Thorium or Uranium fuel rods. As high density uranium produces the same amount of heat, it can directly replace uranium fuel at double the EU/t. When using the IC2 Reactor Planner (<https://github.com/GTNewHorizons/Ic2ExpReactorPlanner>), ensure Version: **1.7.10** and **GTNH** is set as the game version under the Advanced Tab, otherwise many components won't be selectable.

800 EU, 4 Quad Thorium [\[Collapse\]](#)



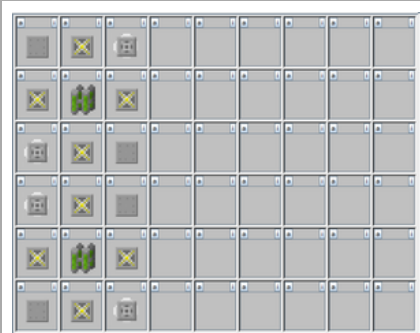
1 chamber, highly stackable, uranium version won't work  
erp=AbpO50cpi8EyCnGQsm5+3kqXSrPM16eyLkRDj6/7ubl08hlt3jA5aGz8kkqxbPtJHAM=  
  
Component list:  
  
4 Component Heat Exchanger  
  
12 Overclocked Heat Vent  
  
4 Quad Fuel Rod (Thorium)  
  
4 Reactor Plating

840-1400 EU, 7 Quad Thorium/Dual Uranium [\[Collapse\]](#)



0 chamber, highly stackable  
erp=Buk7oujKDHGq0JU3mBvTEq6gupj15uaEx9Dysj5ql8uvH5CKB1CUqDnxVmKy6tLkAw==  
  
Component list:  
  
2 Component Heat Exchanger  
  
9 Overclocked Heat Vent  
  
7 Quad Fuel Rod (Thorium)

1200 EU, 2 Quad Uranium [\[Collapse\]](#)



0 chamber highly stackable  
erp=Buk7nRymLwTIJ67fjgWtnWDrSIboxcdED2baEyB8oFjvyLkkDfTIC+eyEcT0dGssAw==  
  
Component list:  
  
4 Component Heat Vent  
  
8 Overclocked Heat Vent  
  
2 Quad Fuel Rod (Uranium)  
  
4 Reactor Plating

1280 EU, 8 Quad Thorium [\[Collapse\]](#)



1 chamber highly stackable  
erp=AbpO50cpi8EyCnlusacGLpFGMMCDivVs5dxaXi3kNwvRjGEV63loRqZ1OD2Yxhc/tAM=  
  
Component list:  
  
16 Overclocked Heat Vent  
  
8 Quad Fuel Rod (Thorium)

1600 EU, 4 Dual Uranium [\[Collapse\]](#)

2 chamber highly stackable, uses cheaper dual rod fuel cells  
erp=bpO50cpi8EyDrYsgjo7ZP9zQEeg+F3rSFaigsHtPq8ffoDT8fykw3on6+jjtYsO7JAM=

Component list:

- 5 Component Heat Exchanger
- 6 Component Heat Vent
- 4 Dual Fuel Rod (Uranium)
- 12 Overclocked Heat Vent
- 1 Reactor Heat Vent
- 2 Reactor Plating

1920 EU, 10 Quad Thorium [\[Collapse\]](#)

Uranium version won't work. This is just under 1A EV, and probably the most popular  
erp=bpO50cpomK/mH0gVHOs23IkdoYDC6chL4SDpXqwoWDNXFT8Juuz6JbLfyp1ktS7rf9HADAM=

Component list:

- 8 Component Heat Exchanger
- 4 Component Heat Vent
- 26 Overclocked Heat Vent
- 10 Quad Fuel Rod (Thorium)
- 6 Reactor Plating

3200 EU, 4 Quad Uranium [\[Collapse\]](#)

erp=bpO50cpsAHTyI9OEtgK9dcozi40hq9Vdk4mh56J2fUgGYTIfHKS4hThQPQ5sd3xJHGPYbAM=

Component list:

- 8 Component Heat Exchanger
- 12 Component Heat Vent
- 26 Overclocked Heat Vent
- 4 Quad Fuel Rod (Uranium)
- 4 Reactor Plating

4200 EU, 7 Quad Uranium [\[Collapse\]](#)

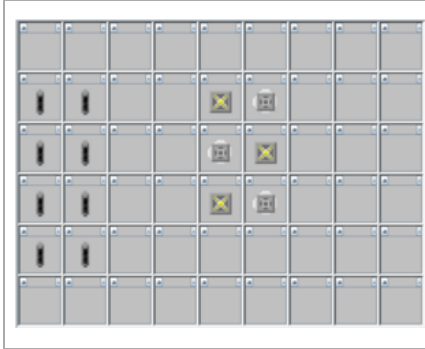
erp=bpO50cpol2eKrThHpJyipMUmaCGJ8k5A+HO9kiIVGf54qMT6ql/xgb7M3Q7JX65KPqAGvAM=

Component list:

- 1 Component Heat Exchanger
- 11 Component Heat Vent
- 28 Overclocked Heat Vent
- 7 Quad Fuel Rod (Uranium)
- 7 Reactor Plating

**Fluid**  
(more fluid nukes pls)

128 HU, 8 Single Thorium [\[Collapse\]](#)



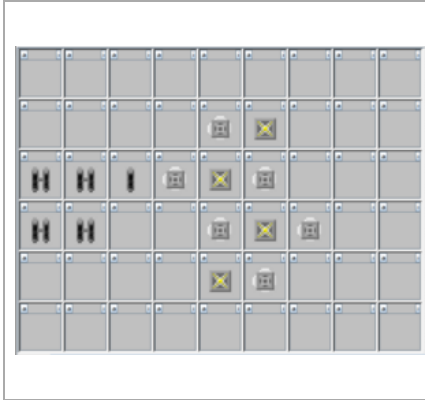
Optimal Steam Flow: 50,000 L/s + 1,200 L/s overflow - Manyullyn Turbine x1  
Pre-Mars

erp=bpO6LoygxxqtCBjheZTZiJluJ5CVFzaDIYWVhlylbtTiyxl3SBgyWM+P2oh8zzgD

Component list:

- 3 Component Heat Vent
- 8 Fuel Rod (Thorium)
- 3 Overclocked Heat Vent

186 HU, 4 Dual Thorium 1 Single Thorium [\[Collapse\]](#)



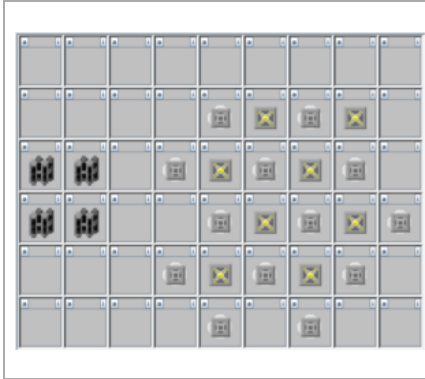
Optimal Steam Flow: 75,000 L/s - 600 L/s underflow (99.2% efficiency) - Manyullyn Large Turbine  
Pre-Mars

erp=AN0ndF0ZQY41WhAxwMpzqpUF01mmB/rSwZyUhKERSWt3BzPNMI7Vi5Bq3JBvNSIAw==

Component list:

- 6 Component Heat Vent
- 4 Dual Fuel Rod (Thorium)
- 1 Fuel Rod (Thorium)
- 4 Overclocked Heat Vent

480 HU, 4 Quad Thorium [\[Collapse\]](#)



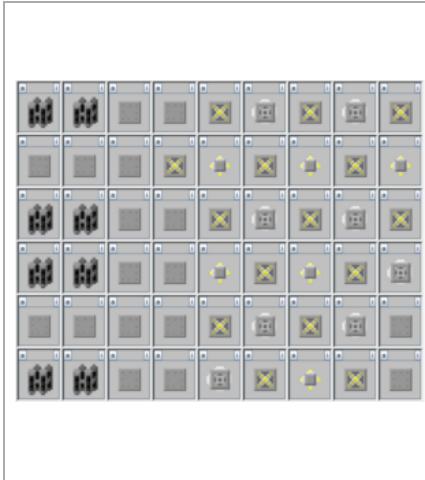
Optimal Steam Flow: 96,000 L/s x2 - Oriharukon Large Turbine x2  
A choice for if you've gone to Mars but don't have the Tungstensteel for the Large HP Steam Turbine yet.

erp=A3Sd0XRIBjvdb3dti2421RK1SijN13EilFaSNZpOeUX2Vrhil7YKffOrs8Y9ZaiZmAM=

Component list:

- 13 Component Heat Vent
- 8 Overclocked Heat Vent
- 4 Quad Fuel Rod (Thorium)

800 HU, 8 Quad Thorium [\[Collapse\]](#)



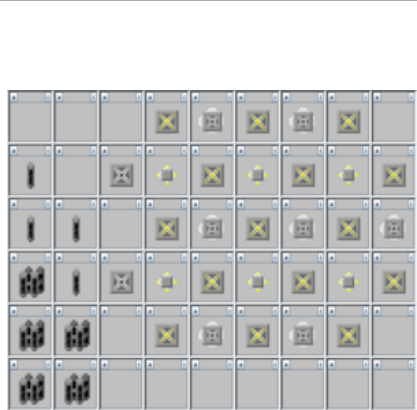
Optimal Steam Flow: 75,000 L/s - 5000 L/s overflow (94.3% efficiency) x2 - Manyullyn Large HP Turbine x2  
You need to insert a circuit configured to 2 into the LHE, as the reactor runs below the 800 HU treshold on startup.

erp=bpO6Loyp11NHXyVmyChv+HqviEbvEblEerFJkx9Y1+Q6BFfe5Go3SFVlqhkWnxllxCPwHAAM=

Component list:

- 6 Component Heat Exchanger
- 8 Component Heat Vent
- 15 Overclocked Heat Vent
- 17 Reactor Plating
- 8 Quad Fuel Rod (Thorium)

801 HU, 5 Quad, 4 Single Thorium [\[Collapse\]](#)



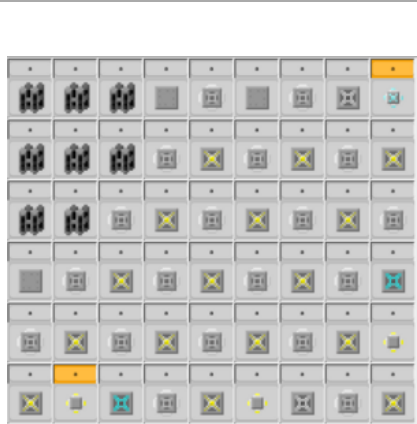
Optimal Steam Flow: 75,000 L/s - 5173 L/s overflow (93.1% efficiency) x2 - Manyulyn Large HP Turbine x2  
More rod efficient than the 800 HU, 8 quad design, but more difficult to automate

erp=AN0ndF0ZQY41WhA8eSLIG/Hlc50XluaZIfUvXqS9uaNAYBWf3mKmyMIKEGZTanQPqVlsAw==

Component list:

- 6 Component Heat Exchanger
- 7 Component Heat Vent
- 2 Heat Vent
- 15 Overclocked Heat Vent
- 5 Quad Fuel Rod (Thorium)
- 4 Fuel Rod (Thorium)

1160 HU, 8 Quad Thorium [\[Collapse\]](#)



This one doesn't require Iridium Neutron Reflectors

erp=XOtK6BxM6bjliugVaAfV59XokCw2pqmbhbKwbMrTXDWyh9WAWnUda4lxUukAA2cwAQ== 1

Advanced Heat Exchanger

- 2 Advanced Heat Vent
- 3 Component Heat Exchanger
- 19 Component Heat Vent
- 2 Heat Vent
- 16 Overclocked Heat Vent
- 8 Quad Fuel Rod (Thorium)
- 3 Reactor Plating

1352 HU, 2 Quad Uranium [\[Collapse\]](#)




Needs neutron reflectors

erp=bpO6Loyois6/qhwqLwAblalKGhjckNE/hVqUd1N/fum0Gioy+flWfba9PELWTwrbl90DxAM=

Component list:

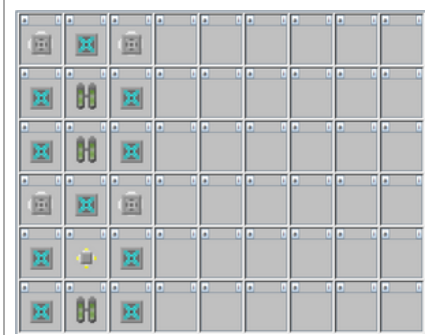
- 5 Advanced Heat Exchanger
- 4 Advanced Heat Vent
- 2 Component Heat Exchanger
- 18 Component Heat Vent
- 4 Iridium Neutron Reflector
- 19 Overclocked Heat Vent
- 2 Quad Fuel Rod (Uranium)

1408 HU, 3 Quad Uranium, 1 Dual Uranium [\[Collapse\]](#)

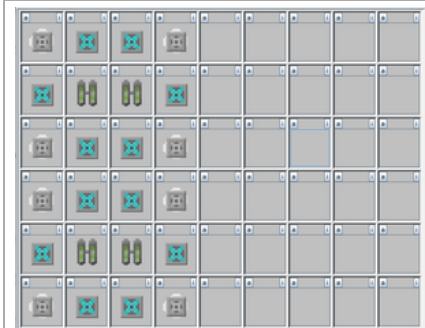
	<p>No neutron reflectors, but more difficult to automate. The plating can be either kind, or left open if your automation is on point.</p> <p>erp=bpO6LoyoHOWp0oVsIXLNijpek41O/dsnJUWwnu9S9QBVNDR+AYyvEh/AVjNJ0kShldxPAM=</p> <p>Component list:</p> <ul style="list-style-type: none"><li>3 Advanced Heat Exchanger</li><li>4 Advanced Heat Vent</li><li>18 Component Heat Vent</li><li>1 Dual Fuel Rod (Uranium)</li><li>4 Heat Exchanger</li><li>1 Heat-Capacity Reactor Plating</li><li>20 Overclocked Heat Vent</li><li>3 Quad Fuel Rod (Uranium)</li></ul>
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MOX Heat-Neutral

800-1820 EU, 3 Dual MOX [\[Collapse\]](#)

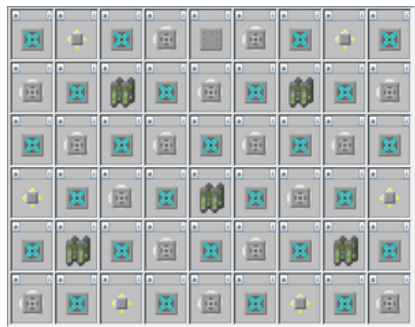
	<p>0 chamber, highly stackable</p> <p>erp=Buk7nRymLwTIJ61tLFQG+xmpBCJZageQBIS1W1hn8mDntumPmMJudWFBdD721t1gAw==</p> <p>Component list:</p> <ul style="list-style-type: none"><li>10 Advanced Heat Vent</li><li>1 Component Heat Exchanger</li><li>4 Component Heat Vent</li><li>3 Dual Fuel Rod (MOX)</li></ul>
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1200-2730 EU, 4 Dual MOX [\[Collapse\]](#)

	<p>1 chamber, highly stackable</p> <p>erp=AbpO52FwzNKwjrFZGpswb3e9mapf8IKH9hkIFqYnVL/AgwHhXpy1kbpN2Zf2ejLwAM=</p> <p>Component list:</p> <ul style="list-style-type: none"><li>12 Advanced Heat Vent</li><li>8 Component Heat Vent</li><li>4 Dual Fuel Rod (MOX)</li></ul>
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3000-6825 EU, 5 Quad MOX [\[Collapse\]](#)

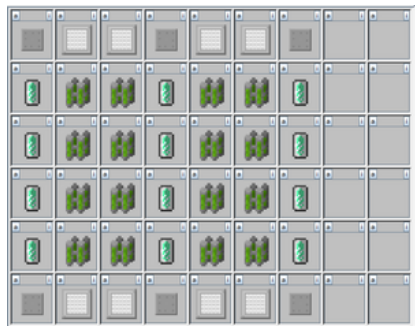


erp=bpO50cpolJowPj7RBKnbNFAmPK179FN/1PjhLcjiHIEEDgF0icg+CsEHqwR2FoF2MPrWaAM=  
Component list:

- 26 Advanced Heat Vent
- 6 Component Heat Exchanger
- 16 Component Heat Vent
- 5 Quad Fuel Rod (MOX)
- 1 Reactor Plating

Vacuum

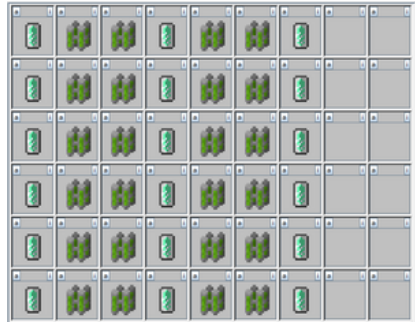
3840-19200 EU, 16 Quad [\[Collapse\]](#)



4 chamber. Can use the 57120 He and for thorium 59640 He.  
erp=ALDsXILdayTWaIjCvH1kzuR4kxA6mAbbK7AnVSILNk/W8EIXMsMsCeZQcLwZHp2uAw==  
Component list:

- 12 60k NaK Coolant Cell
- 8 Iridium Neutron Reflector
- 16 Quad Fuel Rod (Uranium)
- 6 Reactor Plating

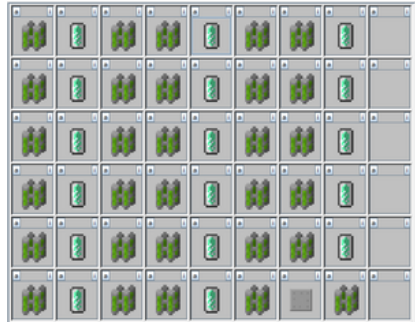
6240-27200 EU, 24 Quad [\[Collapse\]](#)



4 chamber  
Can use 57120 for uranium for thorium 59640 He. Net production of 25K EU/t and needs 1 EV VF.  
erp=ALDsXILdayBjmMk8+jzFIiCi3+MPO75DhHP33FRgUc+cFBAFDMLjVRFfracDQ+mvf6Aw==  
Component list:

- 18 60k NaK Coolant Cell
- 24 Quad Fuel Rod (Uranium)

32000 EU, 30 Quad Uranium [\[Collapse\]](#)

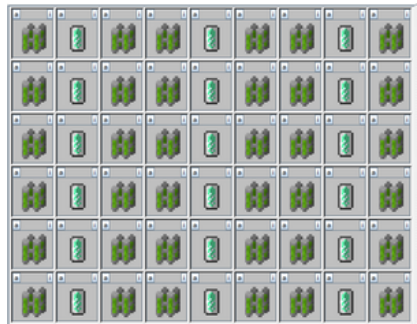


Just under 1A LuV  
erp=LDsXILda3jNNLFGAGd8I/XyVFGKLHeZjGXezBVM56ghlg+A/GSvdLqFV6XDa+fcSIMheAw==  
Component list:

- 17 60k NaK Coolant Cell
- 30 Quad Fuel Rod (Uranium)
- 1 Reactor Plating

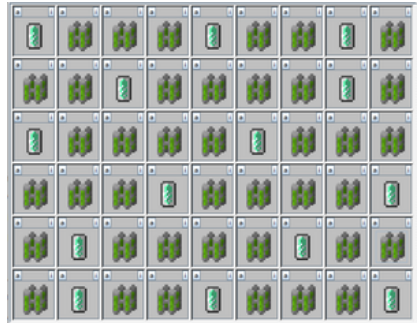


36 Fuel Rods: 7680EU/t (Quad Thorium) 38400 EU/t (Quad Uranium) [\[Collapse\]](#)



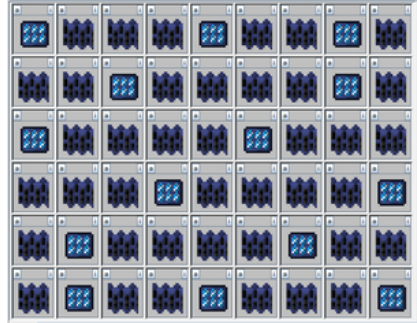
Uranium needs 57120 He and 57440 He and 57024 He.  
erp=Cw7FyC3YGSpofPcg3v7Rt2rlU8Ertcdf6BVVwHoR5RykZCAplZ+9C+vQtOmlG4832SYIXgM=  
  
Component list:  
  
18 60k NaK Coolant Cell  
  
36 Quad Fuel Rod (Uranium)

8720-43600 EU, 40 Quad Uranium [\[Collapse\]](#)



The best reasonable one. Recommend having multiple filters for this design.  
One way to get them is to run the reactor until the cells are at a heat value you want to filter with.  
erp=Cw7FyC3kcVS1sfZUtBvdS2qkEOSe59Dgp7iuvnWbZCzpZ/V3ZcOJ+EtvmpBNcsCudQHjWgM=  
  
Component list:  
  
14 60k NaK Coolant Cell  
  
40 Quad Fuel Rod (Uranium)

7,906,206 EU, 40 The Cores [\[Collapse\]](#)

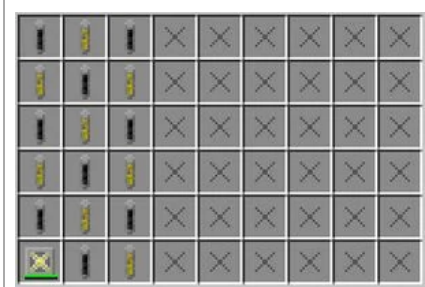


For the truly insane. BTW, that's about 3A of UHV.  
erp=Cw7FyC3vyrReM8xP0BfBfNUIte4+wusJsNiqGApvc4Wr6ljg/HxpH9OHheDX7qa5HQmmgM=  
  
Component list:  
  
14 1080k Space Coolant Cell  
  
40 Fuel Rod (The Core)

Sample Rod Breeder Reactors [\[Collapse\]](#)

\*Reactor planner does not yet have glowstone/Lithium cells so planner codes provided without them.

90 EU, 9-8 Single Rod [\[Collapse\]](#)

A 10x10 reactor grid. The layout includes 9 Fuel Rods (Thorium) and 8 Fuel Rods (Breeding Target) arranged in a 3x3 pattern in the top-left corner. The rest of the grid is filled with empty slots marked with an 'X'.

0 chambers

erp=AWHYuQW61jQoB+5j1BATDYPTOxn9vLmnLpr1l94gdeQXFTIWvXUB+8YrZjUYaBoD

Provides 25 breeding ticks per reactor tick.

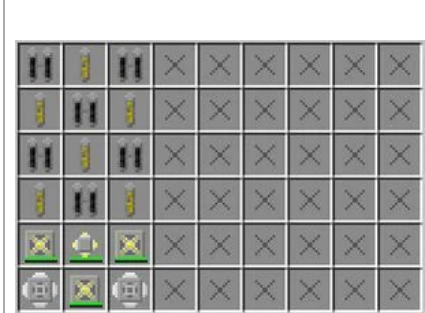
Produces on average 0,15 target rods per minute.

Produces on average 13,9 target rods per Fuel Rod (Thorium)

Component list:

- 9 Fuel Rod (Thorium)
- 8 Fuel Rod (Breeding Target)
- 1 Overclocked Heat Vent

240 EU, 6-6 Double Rod [\[Collapse\]](#)

A 10x10 reactor grid. The layout includes 6 Double Fuel Rods (Thorium) and 6 Fuel Rods (Breeding Target) arranged in a 3x3 pattern in the top-left corner. The rest of the grid is filled with empty slots marked with an 'X'.

0 chambers

erp=Al2J45vkVa52abRQlaJeKSwz9pWSDRpGJIDOkDn2oINC+7ToNAkPJezv6ElG21YD

Provides 38 breeding ticks per reactor tick.

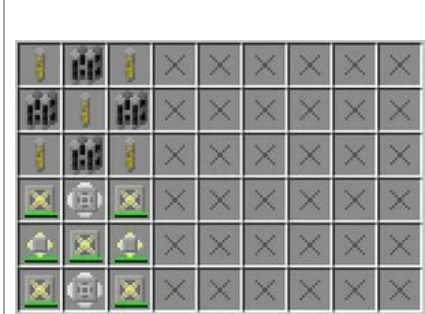
Produces on average 0,23 target rods per minute.

Produces on average 15,8 target rods per Fuel Rod (Thorium)

Component list:

- 6 Double Fuel Rod (Thorium)
- 6 Fuel Rod (Breeding Target)
- 3 Overclocked Heat Vent
- 2 Component Heat Vent
- 1 Component Heat Exchanger

480 EU, 4-5 Quad Rod [\[Collapse\]](#)

A 10x10 reactor grid. The layout includes 4 Quad Fuel Rods (Thorium) and 5 Fuel Rods (Breeding Target) arranged in a 3x3 pattern in the top-left corner. The rest of the grid is filled with empty slots marked with an 'X'.

0 chambers

erp=Cw7FyC3WsaFAP7n0/P6robwO0ibl9xf5eXJyzl2QcCK4Ut7Eknb8f5/gHOGkq/ID

Provides 48 breeding ticks per reactor tick.

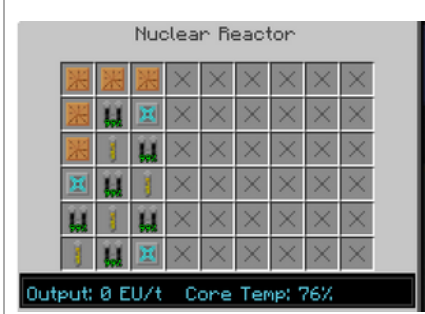
Produces on average 0,29 target rods per minute.

Produces on average 15 target rods per Fuel Rod (Thorium)

Component list:

- 4 Quad Fuel Rod (Thorium)
- 5 Fuel Rod (Breeding Target)
- 5 Overclocked Heat Vent
- 2 Component Heat Vent
- 2 Component Heat Exchanger

240 EU, 4-6 Dual Rod [\[Collapse\]](#)

A screenshot of the Nuclear Reactor interface. It shows a 10x10 grid with 6 Dual Fuel Rods (Thorium) and 4 Fuel Rods (Breeding Target) in the top-left corner. The interface also displays 'Output: 0 EU/t' and 'Core Temp: 76%'.

0 chambers

Heat Multiplier = x6; T=15,000+; (17,000 Melting)

Provides 144 breeding ticks per reactor tick.

Produces on average 0.86 target rods per minute.

Produces on average 60 target rods per Fuel Rod (Thorium)

Component list:

- 6 Dual Fuel Rod (Thorium)
- 4 Fuel Rod (Breeding Target)
- 3 Advanced Heat Vent
- 5 Heat-Capacity Reactor Plating

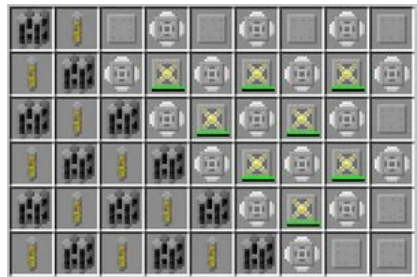
270 EU, 27-25 Single Rod [\[Collapse\]](#)



6 chambers  
erp=BYdi5BbuL0qcgli7t44EsP0WhiUSQ7D3H0xY03PTSNvHINIkHdenhHRn/bTEIHjGgM=  
Provides 88 breeding ticks per reactor tick.  
Produces on average 0,53 target rods per minute.  
Produces on average 16,3 target rods per Fuel Rod (Thorium)  
Component list:  

- 27 Fuel Rod (Thorium)
- 25 Fuel Rod (Breeding Target)
- 2 Overclocked Heat Vent

1440 EU, 12-10 Quad Rod [\[Collapse\]](#)



6 chamber  
erp=AsOxcgt38k9Z/JRb8ZRlerCy5YvTCTV9Z4GF3w0IKtlwS7Y8DBeGsYx/VUN2/X+GAJU6Aw==  
Provides 128 breeding ticks per reactor tick.  
Produces on average 0,77 target rods per minute.  
Produces on average 13,3 target rods per Fuel Rod (Thorium)  
Component list:  

- 12 Quad Fuel Rod (Thorium)
- 10 Fuel Rod (Breeding Target)
- 8 Overclocked Heat Vent
- 16 Component Heat Vent

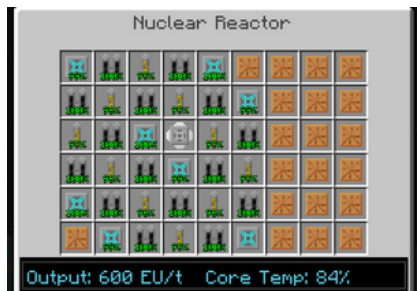
1560 EU, 13-16 Quad Rod [\[Collapse\]](#)



6 chamber  
erp=Fh2LkFuzA0X/jvI9u38n5ge8/2mAOiu8tk6qSuLBwRVZE9WnegSDmrFUXcMlfEuP2VID  
Provides 176 breeding ticks per reactor tick.  
Produces on average 1,06 target rods per minute.  
Produces on average 20 target rods per Fuel Rod (Thorium)  
Component list:  

- 13 Quad Fuel Rod (Thorium)
- 16 Fuel Rod (Breeding Target)
- 11 Overclocked Heat Vent
- 10 Component Heat Vent
- 4 Component Heat Exchanger

600 EU, 10-15 Dual Rod [\[Collapse\]](#)



6 chambers  
Heat Multiplier = x15; T=42,000+; (42,500 Melting)  
Provides 1,020 breeding ticks per reactor tick.  
Produces on average 6.1 target rods per minute.  
Produces on average 170 target rods per Fuel Rod (Thorium)  
Component list:  

- 15 Dual Fuel Rod (Thorium)
- 10 Fuel Rod (Breeding Target)
- 8 Advanced Heat Vent
- 1 Component Heat Vent
- 20 Heat-Capacity Reactor Plating

3120 EU, 26-18 Quad Rod Vac Nuke [\[Collapse\]](#)



6 chamber  
erp=BYdi5BbuWj6jEBUzR7Wkm3G+kl/fCd+/8RKjkJuVjfrKVvqCv5T5zhv93XTDMXKIfID

Provides 256 breeding ticks per reactor tick.

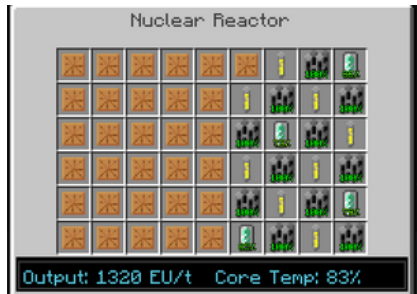
Produces on average 1,54 target rods per minute.

Produces on average 12,3 target rods per Fuel Rod (Thorium)

Component list:

- 26 Quad Fuel Rod (Thorium)
- 18 Fuel Rod (Breeding Target)
- 9 Coolant Cell

1320 EU, 8-11 Quad Rod Vac Nuke [\[Collapse\]](#)



6 chambers  
Heat Multiplier = x21; T=60,000+; (61,200 Melting)

Provides 2,100 breeding ticks per reactor tick.

Produces on average 12.6 target rods per minute.

Produces on average 238 target rods per Fuel Rod (Thorium)

Component list:

- 11 Quad Fuel Rod (Thorium)
- 8 Fuel Rod (Breeding Target)
- 4 Coolant Cell

Sample Item Breeder Reactors

Single Rod Breeders [\[Collapse\]](#)

1010 EU, 35 Single Rod [\[Collapse\]](#)



6 chambers  
erp=bpO50cpuMjBnY7QKytPv2o6ue2yz77OQvXAuxpzgcquGEDY2LLvuiyOw+unATpMKMUAuQAM=

Component list:

35 Fuel Rod (Thorium)

15 Overclocked Heat Vent

4 Heat Exchanger

270-1350 EU, 27 Single Rod [\[Collapse\]](#)



erp=bpO50cponWp43KyK6WY6FaA7+gt5dmGYdWzaKwnSsCTFspuw8b7FXHWOUKD4Xlfktg5oAM=

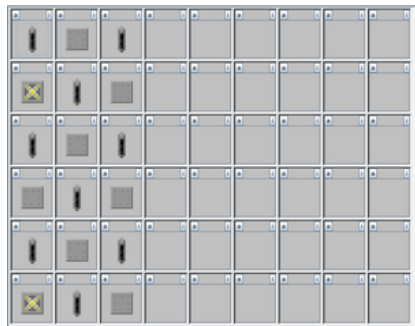
Component list:

27 Fuel Rod (Thorium) - any type?

7 Overclocked Heat Vent

20 Reactor Plating

90-450 EU, 9 Single Rod [\[Collapse\]](#)



any type, 0 chamber  
erp=Buk7nRymLwTIJ7U+ognWJ4sGGPygcAyLMoOUYYaaHQTuFyElt7UCK/Ht4hm+Cu2gAw==

Component list:

- 9 Fuel Rod (Thorium)
- 2 Overclocked Heat Vent
- 7 Reactor Plating

Mass Production Breeders [\[Collapse\]](#)

1680-2800 EU, 14 Quad Thorium/Dual Uranium [\[Collapse\]](#)



4 chamber  
erp=Buk7nRymLwt4HZRNzw1hWKuL2KM8qGFvZxEMXVSEp5bC3OsCK0De4RffUikgK74M2ff4Aw==

Component list:

27 Overclocked Heat Vent

14 Quad Fuel Rod (Thorium) or Dual Fuel Rod (Uranium)

1 Reactor Plating

1920 EU, 16 Quad Thorium [\[Collapse\]](#)



4 chamber. The planner says it's unstable but works ingame. The uranium equivalent however, does NOT.  
erp=Buk7nRymLxL7m5ZGb8jXAZYmLvKbw8QtjYyvHQAexlc0egF34NnVhYiGAKSYsT7qezkAw==

Component list:

2 Heat Exchanger

21 Overclocked Heat Vent

16 Quad Fuel Rod (Thorium)

3 Reactor Plating

1260-3600 EU, 18 Quad Thorium/Dual Uranium [\[Collapse\]](#)



erp=bpO50cpsAJVHFH1pDDG7Bh9DY6ssmUIOduglgVrGSNIV/ppvTshl3LYn6+h9WkrdJI8FLAM=

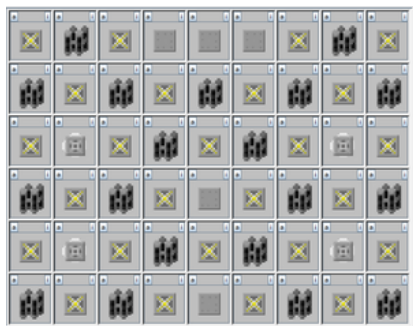
Component list:

34 Overclocked Heat Vent

18 Quad Fuel Rod (Thorium) or Dual Fuel Rod (Uranium)

2 Reactor Plating

2280-3800 EU, 19 Quad Thorium/Dual Uranium [\[Collapse\]](#)



erp=bpO50cpvAea5wzGrDrgIM+dcC7glzqOMjbPLWBXZ3XUOYi3cnjH/UE5UZI2wCSx+qO01xAM=

Component list:

4 Component Heat Vent

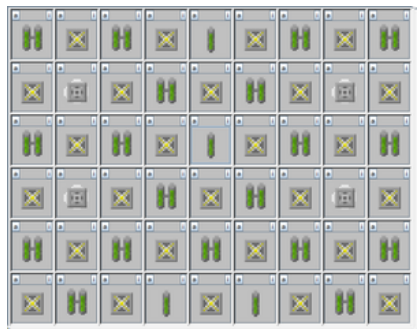
26 Overclocked Heat Vent

19 Quad Fuel Rod (Thorium) or Dual Fuel Rod (Uranium)

5 Reactor Plating



4000 EU, 19 Dual Uranium and 4 Single Uranium [\[Collapse\]](#)



A challenge to automate!  
erp=bpO50cpohv999daNzIO8zbu2FicL5w4D4y/z79oiZmFYvfCno3fw5IAV/jfZacHOMFWs7wAM=  
  
Component list:  
  
4 Component Heat Vent  
  
19 Dual Fuel Rod (Uranium)  
  
4 Fuel Rod (Uranium)  
  
27 Overclocked Heat Vent

1320-2200, 11 Quad Thorium/Dual Uranium [\[Collapse\]](#)



2 chamber, highly stackable  
erp=bpO50cpi8EyKWNHtoyb5PT6Pwyl7P4WMk49thhuN0g9DMxag8Xo87jLUok0mc2mmAM=  
  
Component list:  
  
1 Component Heat Vent  
  
15 Overclocked Heat Vent  
  
11 Quad Fuel Rod (Thorium) or Dual Fuel Rod (Uranium)  
  
3 Reactor Plating

External Links

- Original IC2 Reactor Planner - Github (<https://github.com/MauveCloud/Ic2ExpReactorPlanner/releases>)

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