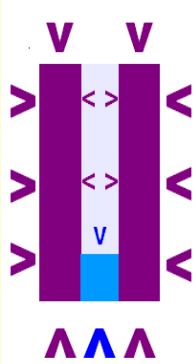




Z-PEC: A Better Casimir Cavity !!!

The Virtual-Photons of the Zero-Point Energy Field push on us equally hard in every direction. We usually ignore this tremendous pressure since all of these forces counteract each other, just as we usually ignore the 10 tons of air pressure that presses in on *each* of our **bodies** all the time!

Z-PEC, using the well-known Casimir Effect, causes the Virtual-Photons of the Zero-Point Energy Field to push harder on its *one* side than on its *opposite* side. This net force will provide useful thrust and energy for all of our many devices !

Please refer to the illustration below: The two *moving* plates of Casimir's original experimental proposal are now *held in place* by the addition of a Cavity Floor.

<p>The Cavity Walls are Vertical and Solid Purple</p>	 <p>Z-PEC Zero - Point Energy Converter Patent Pending</p>	<p>The Cavity Floor is Horizontal and Solid Blue</p>
<p>Purple Arrows represent the direction & magnitude of forces acting on the Cavity Walls. These Purple Arrows come in pairs that are equal <u>and</u> opposite!</p> <p style="text-align: center;">  </p> <p>These forces cancel out!</p>	<p>Blue Arrows represent the direction and magnitude of forces acting on the Floor of the Cavity. These two Arrows are <i>opposite</i> but they are Not Equal !!!</p> <p style="text-align: center;">  </p> <p>These Forces do NOT cancel !</p>	

The Virtual-Photon Depletion Zone Inside the Cavity

LARGE Virtual-Photons *cannot* form inside the **small**, specially-constructed Cavity; therefore, there are *more* Virtual Photons hitting the surfaces on the *outside* of the Cavity than on the *inside*. In the illustration, this is *why*, the arrows *inside* the Cavity are *small* !!!

<p>So Where Does the Net Force Come From?</p>	<p><u>A Casimir Repulsive Force</u></p> <p>Complex standing waves can <i>increase</i> the Pressure inside the cavities. To <i>prevent</i> resonance, we must fashion our cavity using a <i>semi-conductor material</i> that <i>absorbs</i> the <i>smaller</i> Virtual-Photons that are permitted inside the Cavity; this material is <i>also</i> conductive and grounded to help <i>prevent</i> the formation of larger Virtual-Photons.</p>
<p>The <i>more-numerous</i> Virtual-Photons, <i>outside</i> the Cavity push <i>harder</i> on the Cavity Floor than the <i>less-numerous</i> Virtual-Photons <i>inside</i> the Cavity!!!</p>	

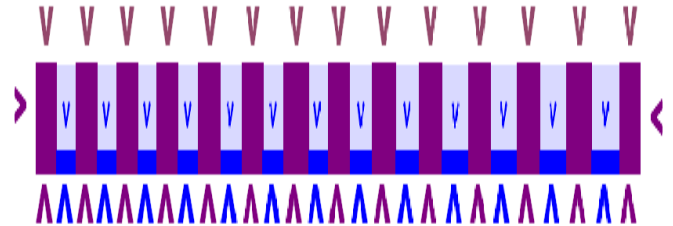
Wall Separation Distance nm**Pressure N/mm²**

1000	1.30E-010	9.0	1.98E-002	3.9	5.63E-001	2.1	3.33E+000
500	2.08E-009	8.0	3.18E-002	3.8	6.24E-001	2.0	3.92E+000
400	5.09E-009	7.0	5.42E-002	3.7	6.95E-001	1.9	4.65E+000
300	1.61E-008	6.0	1.00E-001	3.6	7.75E-001	1.8	5.56E+000
200	8.14E-008	5.0	2.08E-001	3.5	8.68E-001	1.7	6.69E+000
100	1.30E-006	4.9	2.26E-001	3.4	9.74E-001	1.6	8.14E+000
90	1.98E-006	4.8	2.46E-001	3.3	1.10E+000	1.5	9.99E+000
80	3.18E-006	4.7	2.67E-001	3.2	1.24E+000	1.4	1.24E+001
70	5.42E-006	4.6	2.91E-001	3.1	1.41E+000	1.3	1.56E+001
60	1.00E-005	4.5	3.18E-001	3.0	1.61E+000	1.2	1.99E+001
50	2.08E-005	4.4	3.47E-001	2.9	1.84E+000	1.1	2.57E+001
40	5.09E-005	4.3	3.81E-001	2.8	2.12E+000	1.0	3.39E+001
30	1.61E-004	4.2	4.18E-001	2.7	2.46E+000	0.9	4.56E+001
20	8.14E-004	4.1	4.61E-001	2.6	2.85E+000	0.8	6.28E+001
10	1.30E-002	4.0	5.09E-001	2.5	3.33E+000	0.7	8.89E+001

***Smaller Is
Much Better!***

A Macro-scopic Array of Nano-Scale Holes Or Grooves

A proof-of-concept array can be made using the *same* techniques, materials and equipment that are *routinely* used in semiconductor manufacturing.



Floor Depths should probably be 2-3 times Floor widths. We want to *eventually*, achieve a floor area of 25 mm x 25 mm with wall separations in the 3 nm range, or better; *but for proof-of-concept*, we *might* consider an array as small as 1 mm² with Wall-Separations as large as 50nm.

Interested Organizations May Contribute In the Following Areas

- Semiconductor design and prototyping
- Alternative Energy
- Aerospace
- Nano-technology
- Microchip Design
- Microchip fabrication
- Materials Science
- Advanced Imaging

- Chemistry
- Physics

Facilities, Equipment & Personnel for

- making microchip prototypes
- making custom materials
- Grant-Writing
 - ***No US Government Money!***
 - ***No US Government Interest!***

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