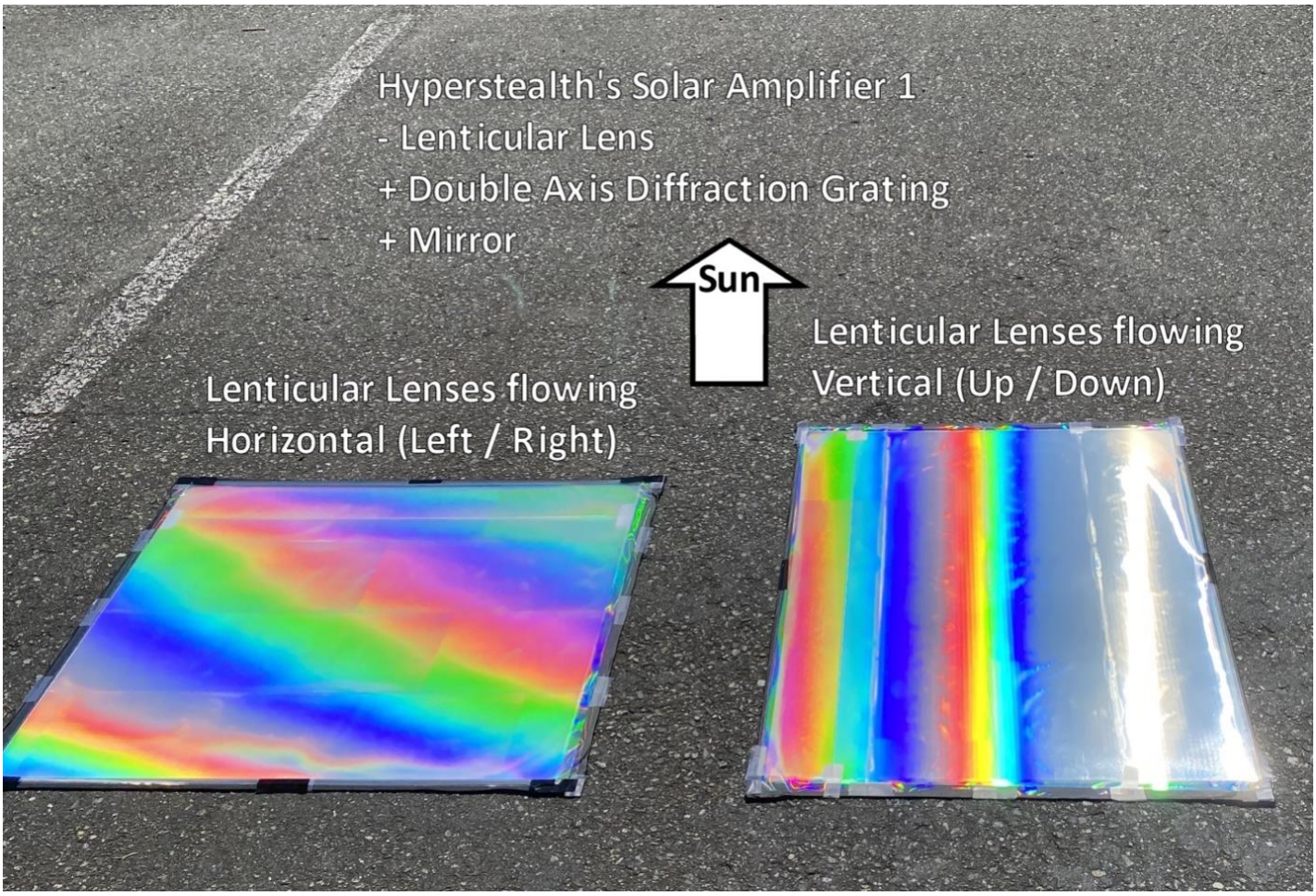
Solar Bloom; Hyperstealth's Patented Solar Panel Amplifier Causes Sunlight to Bloom in Multiple Colors and Directions.

(Vancouver, B.C., August 1, 2022) Just like a flower petals blossom out in numerous directions and angles, Hyperstealth's patented solar panel amplifier adds more power by harnessing sunlight and getting it to scatter across the visible spectrum of colors and bloom in an large cone. This blooming effect also removes the need to track the sun. Canadian Patent CA 3144672, Issued Jan 21, 2022 "System and Method of Amplifying Solar Panel Output", all 39 claims approved. Filled in 43 other countries. Confirmed triple solar panel output.

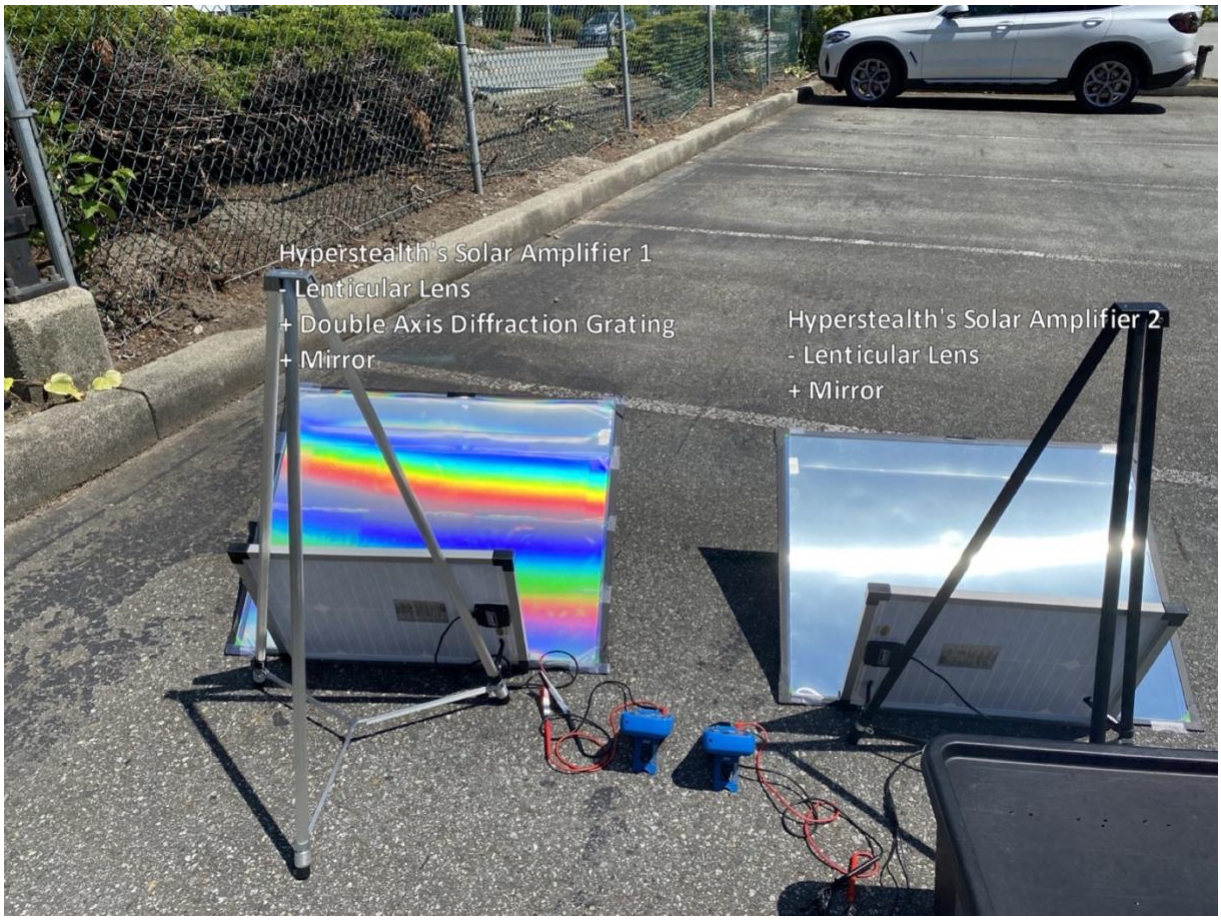


This passive amplifier consisted of a mirror with a double axis diffraction grating layer and a lenticular lens. The double axis diffraction grating combined with the lenticular lens is what causes the light to bloom because it splits the light into different parts of the color spectrum causing the rainbow or prism effect, the mirror then reflects back any light that gets through the layers.

Mirror boosters (mirrors alone) add too much heat and create hot spots on the solar panel that can permanently damage the solar panel. Hyperstealth's combination of a lenticular lens over a mirror performed better than mirrors alone and the addition of a layer of diffraction grating improved it further not only in power output but also in creating a larger cone of reflection to allow the light to be deflected at much higher angles. This should allow for this style of booster to be retrofitted to fixed stationary residential and commercial solar panel applications and could also be retrofitted to tracking systems to further boost their output.

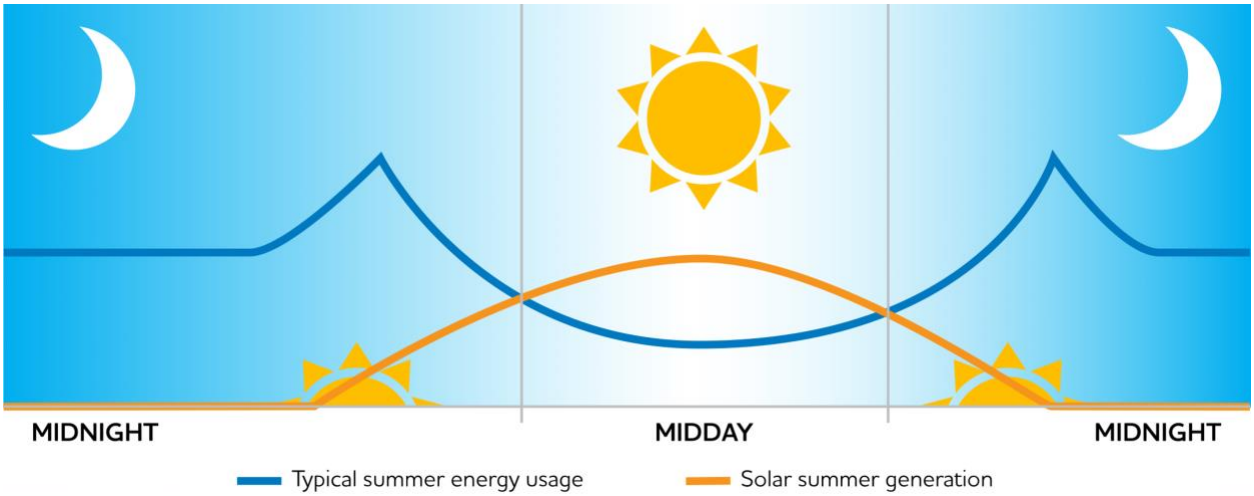
To achieve the best results the Lenticular lenses should flow horizontally as per the first photograph to allow for a larger part of the panel to receive more of the reflection of the visible (color) spectrum.

When the diffraction grating is removed (as it is shown on the right in the photo below) the amplifier cannot reflect as much light at higher angles. Note; the shadows indicate that the panels are turned approximately 70 degrees away (horizontally) from the sun in this test.



How does a solar panel achieve maximum power? You can place it at the equator where solar radiation is at its highest and you can add a tracking system to track the sun throughout the day so it achieves maximum efficiency. These two aspects are not common or viable with most solar panel installations.

The variation of the suns angle (height in the sky) changes throughout the year and can vary by as much as 46-47 degrees vertically. Most solar panels in the Northern hemisphere face south in the direction of the sun and are usually fixed so they only become most efficient midday when energy usage is at its lowest. See image below.



https://www.hydro.mb.ca/your_home/grid_connected_solar_pv_systems/

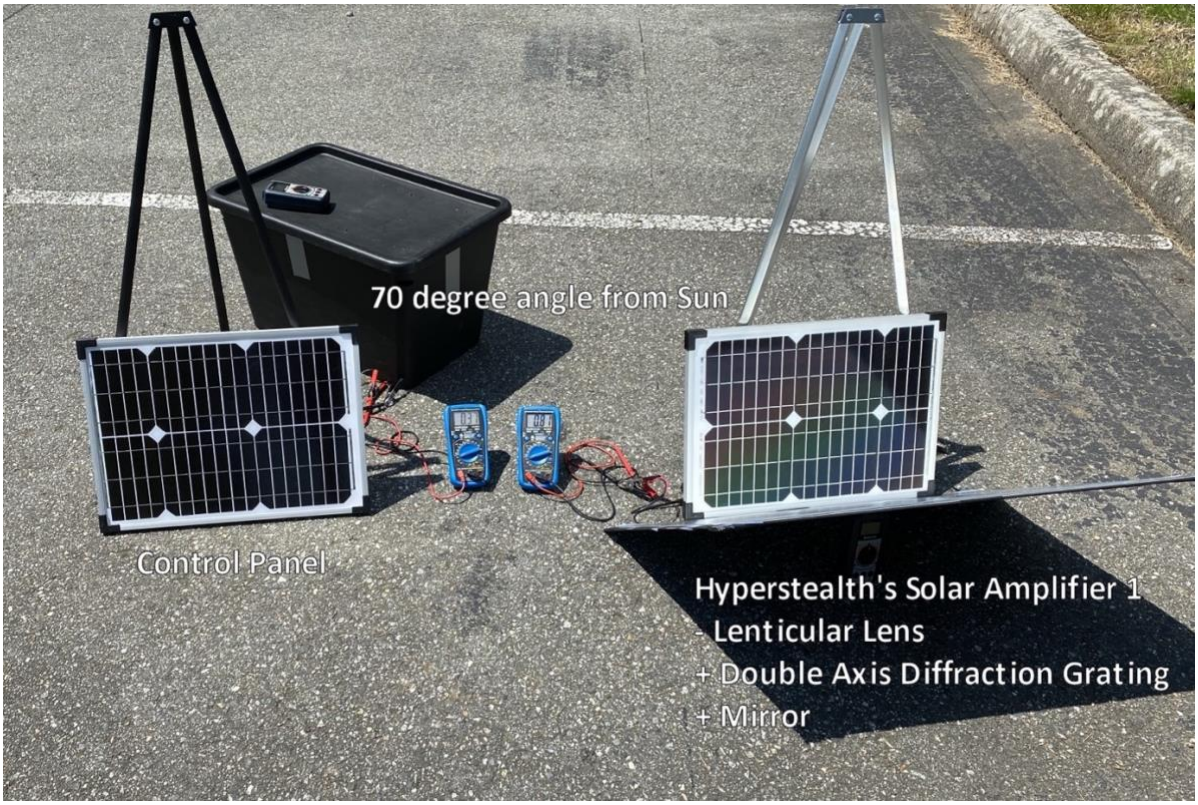
Generally, a solar panel system with a single-axis solar tracker installed sees a performance gain of 25 to 35 percent. A dual-axis tracker bumps performance up by another five to 10 percent.

Trackers are often too large and heavy to be used on residential rooftops, they are higher maintenance and cost more to install. See https://news.energysage.com/solar-trackers-everything-need-know/

Guy Cramer, President/CEO of Hyperstealth Biotechnology Corp. and inventor of the Solar Panel Amplifier recently tested the system on June 30, 2022 which is 10 days past the summer solstice (maximum solar radiation) in the Northern Hemisphere. Previous tests were done near the winter solstice (minimum solar radiation). He was able to demonstrate with just one panel amplifier that the system achieved a boost of 31.85% versus the control panel with no amplifier when both panels were perpendicular (pointed directly at the sun) at noon.

Changing the vertical (up / down) angle of both panels to 45 degrees (something close to a secured panel on a typical roof) and then angling them 40 degrees horizontal (left / right) away from the sun to simulate the sun later in the day provided a boost of 81.9% over the control panel at the same angles. The amplified panel was providing 8% more power at these angles than the first control panel did pointing directly at the sun, but the difference between the two control panels, (the one that faced the sun directly and the one with these angles) was a 40% drop in output.

And changing the horizontal (left/right) angle to 70 degrees to simulate even later in the day demonstrated a boost of 123.36% (more than double) from the amplified panel over the control panel at the same angles. When compared to the initial control panel facing the sun, the boosted panel at these angles provided 35.02% less power, while to control panel at these angles lost 71% of the power output compared to the control panel that faced the sun.

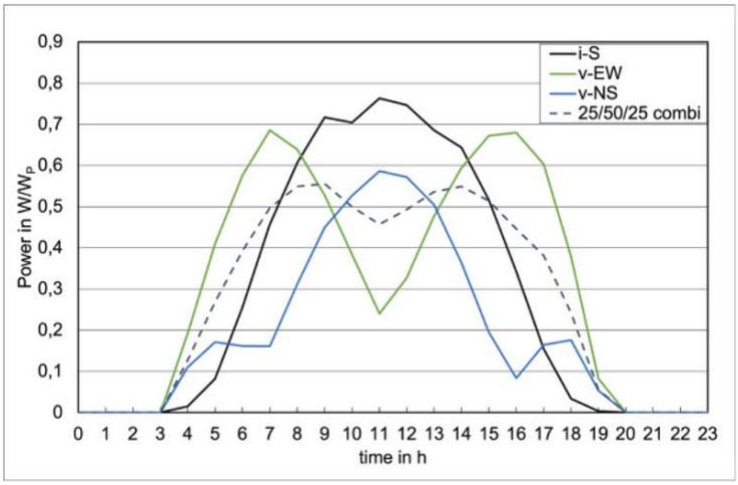


The #2 Amplifier with the double axis diffraction grating removed so it is a lenticular lens over a mirror as seen in the second photo in this article, still functions nearly equal to the one with the addition of the diffraction grating when pointed directly at the sun, but drops off substantially when angled away.

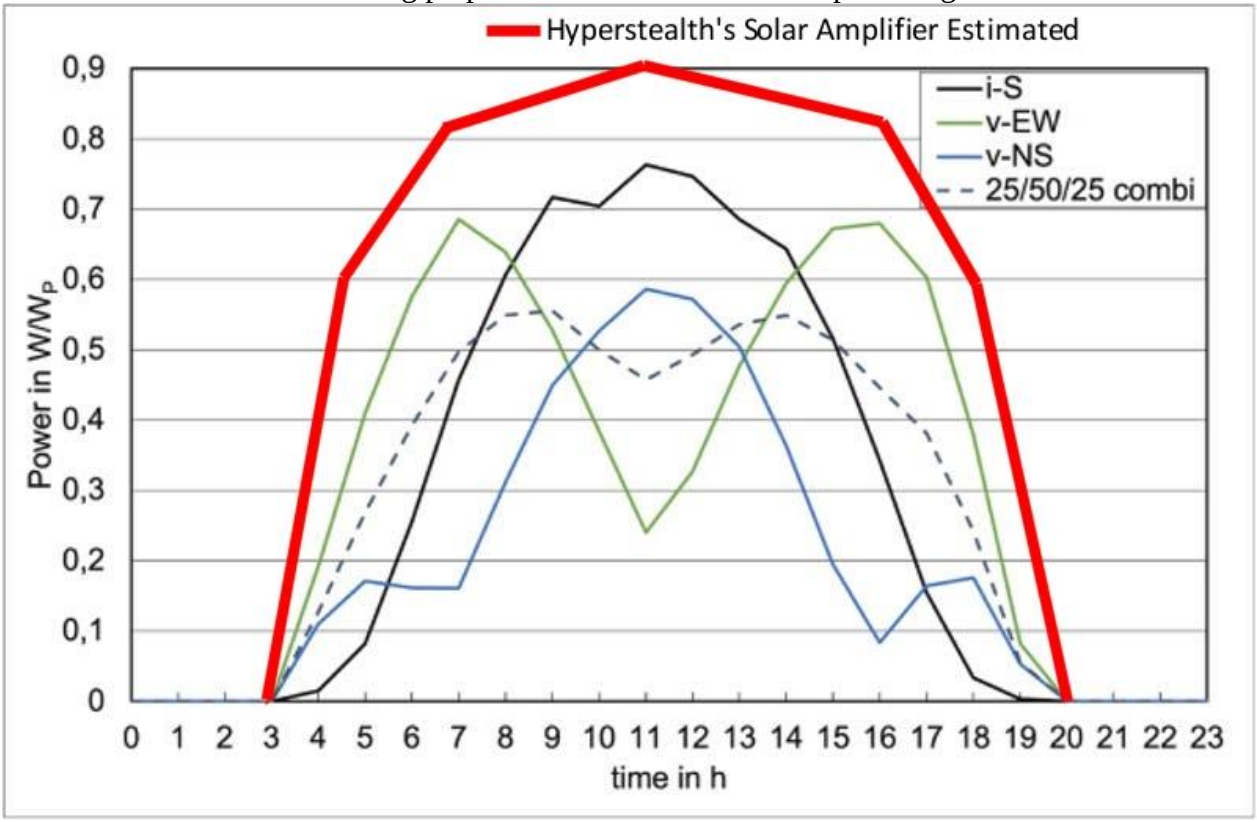
		Moncrystalline Solar Panel (Max power 30 Watts)					
		Perpendicular to the sun (facing Sun directly)					
		Watts					
No Amplifier	Control Panel	25.13					
Amplified 1	Mirror, Double Axis Diffraction Grating, Lenticular lens	33.13					
Amplified 2	Mirror, Lenticular Lens	32.56					
		Angled down 45 degrees from verticle and 40 degrees horizontal from the Sun					
		Watts					
No Amplifier	Control Panel	15.05					
Amplified 1	Mirror, Double Axis Diffraction Grating, Lenticular lens	27.38					
Amplified 2	Mirror, Lenticular Lens	23.74					
		Angled down 45 degrees from vertical and 70 degrees horizontal from the Sun					
		Watts					
No Amplifier	Control Panel	7.29					
Amplified 1	Mirror, Double Axis Diffraction Grating, Lenticular lens	16.28					
Amplified 2	Mirror, Lenticular Lens	11.82					

In Germany researchers recently looked at mounting the double sided solar panels at 90 degrees to allow the panels to provide more power in the morning and afternoon when the power was needed. See: **New Research Says Vertical Solar Panels Have Improved Performance**

-The Black Line represents a typical south facing Solar panel configuration.
-The Green Line is the system shown in the photo above with the panels running in an East West configuration.
-The Blue Line is the system shown in the photo above with the panels running in an North South configuration.
-The Dotted Black Line is a 25/50/25 combination.

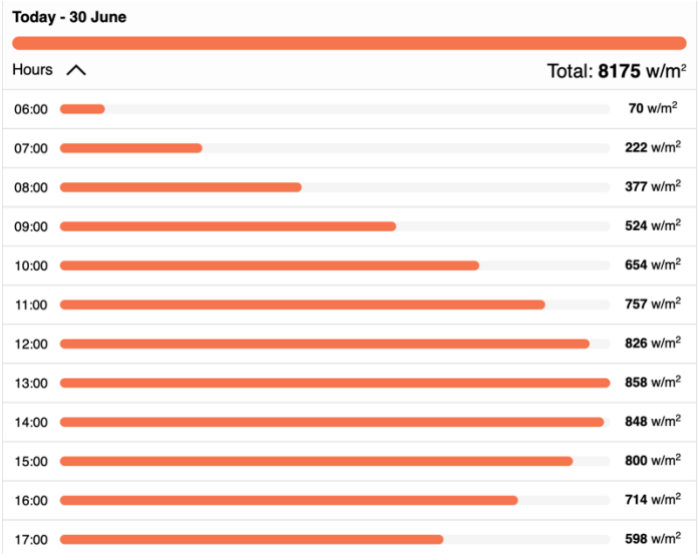


I have taken their data and overlaid an estimate of Hyperstealth's expected output with a south facing fixed solar panel system and a Hyperstealth solar panel amplifier positioned below the panel(s) in regards to their performance. Not only should our amplifiers provide an excess of solar power throughout the day, we substantially increase the morning and afternoon residential requirements and we garner even higher power at midday when the sun is closest to being perpendicular to the fixed solar panel angle.



Doesn't Hyperstealth promote triple the solar panel power output with their amplifier?

Cramer responds, "Those tests were done in December, when the sun is providing the lowest solar radiation of the year and we used our amplifier panels on all sides of a solar panel so you are creating more light from every side. See video: https://vimeo.com/362809256 This is not practical in current residential solar panel systems. In this application we outline above we are utilizing what would be a practical with just an amplifier placed below an existing solar panel system."



The first question to answer was; Does the amplifier still work when the solar radiation is at its strongest in June? The answer is yes, while the output from the amplifier is not as high as in December, due to the threshold of the panel output, you can get more power than specified because their testing is done under perfect conditions simulated at the equator where solar radiation is at 1000 Watts per meter squared and with our amplifiers, we could provide more light onto the panels than this 1000 Watt threshold. In Vancouver on June 30th the maximum solar radiation was 858 watts per meter squared. So Vancouver never achieves 1000 watts per meter squared. In contrast the testing in Vancouver in December was 250-300 watts per meter squared at midday, on June 30, 2022, that's the equivalent solar radiation at 7:30 am.

The second question was; does amplifier with addition of the double axis diffraction grating outperform the amplifier without this diffraction grating? While statistically insignificant when the solar panels were perpendicular to the sun, meaning you could use either in a dual axis tracking system (so the solar panel is always perpendicular to the sun) to achieve a similar boost. See table on page 4.

The third question was when the panels were angled away from the sun, not just in the up down configuration, (see video demonstration here https://vimeo.com/540434925), but also the left right angle from the sun to simulate a fixed solar panel system at different times of the day, is there a difference? The double axis diffraction grating was substantially better and further improved over the control and amplifier #2 as the angles became more extreme to the sun. Table on page 4.

Single axis diffraction grating does not provide the same coverage as double axis diffraction grating. See video test here: https://vimeo.com/536961670

Cramer concludes, “While boosting solar panel output by these levels was thought to be impossible, I am no stranger to people questioning my claims. What surprises me the most is that no one in North America or Europe has made any serious inquiries about our solar amplifier, which really makes me question if governments and/or corporations are serious about climate change and increasing green energy or are they just saying what they want the public to hear! The companies asking about this technology are in South East Asia, the Middle East and Australia, places that receive an abundance of solar radiation.”

“Our testing here demonstrates that it does continue to amplify under high solar radiation conditions, the largest increases in power and potential cost savings will be in regions that do not have high solar radiation year round and this system could be retrofitted to most existing solar panel systems.”

“I did not reinvent the solar panel, I utilized some ingenuity to provide more light at larger angles to overcome the 1000 watts per meter squared limitation of all solar panels, thereby causing the panels to become much more efficient than they were expected to be. As new types of solar panels are developed we should also be able to improve their output so this won’t be made obsolete tomorrow.”

“An analogy I like to use is to compare black and white movies to color, once people saw the difference there was no turning back. Those black solar panels with white rims may start to look very colorful in the near future as our system begins to be utilized. The question may not be ‘should we add it?’ but ‘when can we add it?’”