



Transcend Lighting

The world's most energy efficient grow light.

What They Do

Transcend lighting has built the first LED blue light for indoor farming that results in higher yields, uses ½ the power and lasts 5x as long as the average grow light. The energy savings alone can double profit/year for an average farm. The light uses the first ever wavelength conversion system for photosynthetic lights designed by founder Brian Bennett.

Why It's a Big Deal

This is the most efficient farming light on the market and second place isn't even close. If a farmer lights their plants 24 hours a day they save \$450,000 dollars per acre every year with Transcend lights over traditional non-LED lighting methods.

There are already 20,000 acres of indoor farming here in the US and hundreds of thousands of acres worldwide, and the LED-lighting industry is doubling every 2 years. As more people migrate to urban areas and food transportation costs increase, the need for indoor farms will only go up. It just so happens that LED is the only light type suitable for the future of vertical farming.

Bullets

- Over \$1M in committed (LOI) sales since January launch.
- New LED tech. ~50% more energy efficient than other lights.
- Average indoor farm (5 acres) can save \$2,250,000 per year.
- Energy savings pay for Transcend lights in ~2 years.
- Bulbs last 5x longer than competition (10 years vs. 2-3).
- Perfect for fruits, vegetables, and all green medicine.
- Patent protection in the U.S. and abroad.
- Investors include Y Combinator, Justin Kan, and Ben Boyer.

Terms

- Invest in Wefund LLC that holds a SAFE in Transcend Lighting with these terms:
- **Round Structure:** A **SAFE** is an agreement that grants the holder the right to equity at a later date, typically when venture capitalists lead a 'Series A' financing.
- **Valuation Cap:** \$6,000,000
- **Discount:** 0%

Why We Like Transcend Lighting

Because these lights are so good that nearly 100% of farmers that have tried Transcend lights outfitted their entire farm. Brian invented and patented the technology himself. Their first light is already ~50% more efficient than other grow lights and capable of saving indoor farms nearly \$500k per acre per year (effectively doubling profit margins for most growers). They launched nine months ago with zero sales staff and already have nearly \$1M in committed sales with another 12 pilot farms ready to convert. Efficient “sunlight” is critical for the exploding indoor farming market and this is far and away the most efficient light on the market.

Farmers are subject to market prices and will try anything to widen margins and increase profits. Transcend’s unique photosynthetic LED lights are 35-60% more energy efficient than the competition. They also last ten years vs. 2-5 for other lights which means farmers not only buy 80% fewer lights they also save the labor costs of replacing 1,000 lights per acre every 3 years.

Unlike the software industry, patents actually protect innovation in the hardware business. Transcend just filed full patent protection in the US and abroad for their proprietary wavelength conversion system and blue-spectrum-LEDs. Blue LEDs are increasing in performance and decreasing in price in a very predictable way (in the same way computer chips improve), which means Transcend’s lighting fixture performance is increasing every single year, even if they don’t invest in research and development. They have protectable technology that’s already more efficient than the competition, and every year LED improvement widens the gap.

It’s the future market that really gets us excited. The world is changing fast, populations are centralizing in urban environments, there are more people to feed, and more droughts around the world. It’s easy to envision a world a decade or two from now, where a majority of our fresh fruits and vegetables are grown locally completely indoors. Transcend is uniquely positioned to be the “sunlight” for every one of these vertical farms because their LED lights operate at the low temperatures necessary for close proximity farming. They also have the installation flexibility necessary for vertical farming in ways that fluorescent and sodium lights just don’t.

To sustain a growing population farms need to grow vertically, and the LED lights that Transcend has developed are the first lights cool enough for vertical farms, flexible enough to be placed anywhere, last five times as long, and cost 50% less to power than any other lights. Now they just need some money to hire a proper sales team and pour fuel on the fire.

Industry Research

Transcend lights are the most efficient light for an indoor farming market that currently spends \$1 billion every year on new lights. Yet these early adopters and marijuana growers are just the tip of a rapidly expanding market. The world’s farmland is all taken, in order to expand food

production for a growing, urban centric world population farms have started to move inside and up.

- \$1 billion worth of grow lights were sold last year.
- There are 20,000 indoor farm acres in the US.
- The demand for LEDs by established farmers is doubling every two years. By 2020, the market is projected to be \$3.5, \$3.6 billion dollars.
- LED lighting market on track to grow at a 30.8% CAGR from 2013 to 2019.
- LED lighting fixtures are projected to sell ~\$550 million worth of lights in 2015.
- The U.S. market for legal cannabis grew 74 percent in 2014 to \$2.7 billion, up from \$1.5 billion in 2013.
- The United Nations (UN) predicts the world's population will grow by some 2.5 billion people by 2050, and 80 percent of the world's population will live in cities.
- 80 percent of the world's land that is suitable for growing food is already in use.

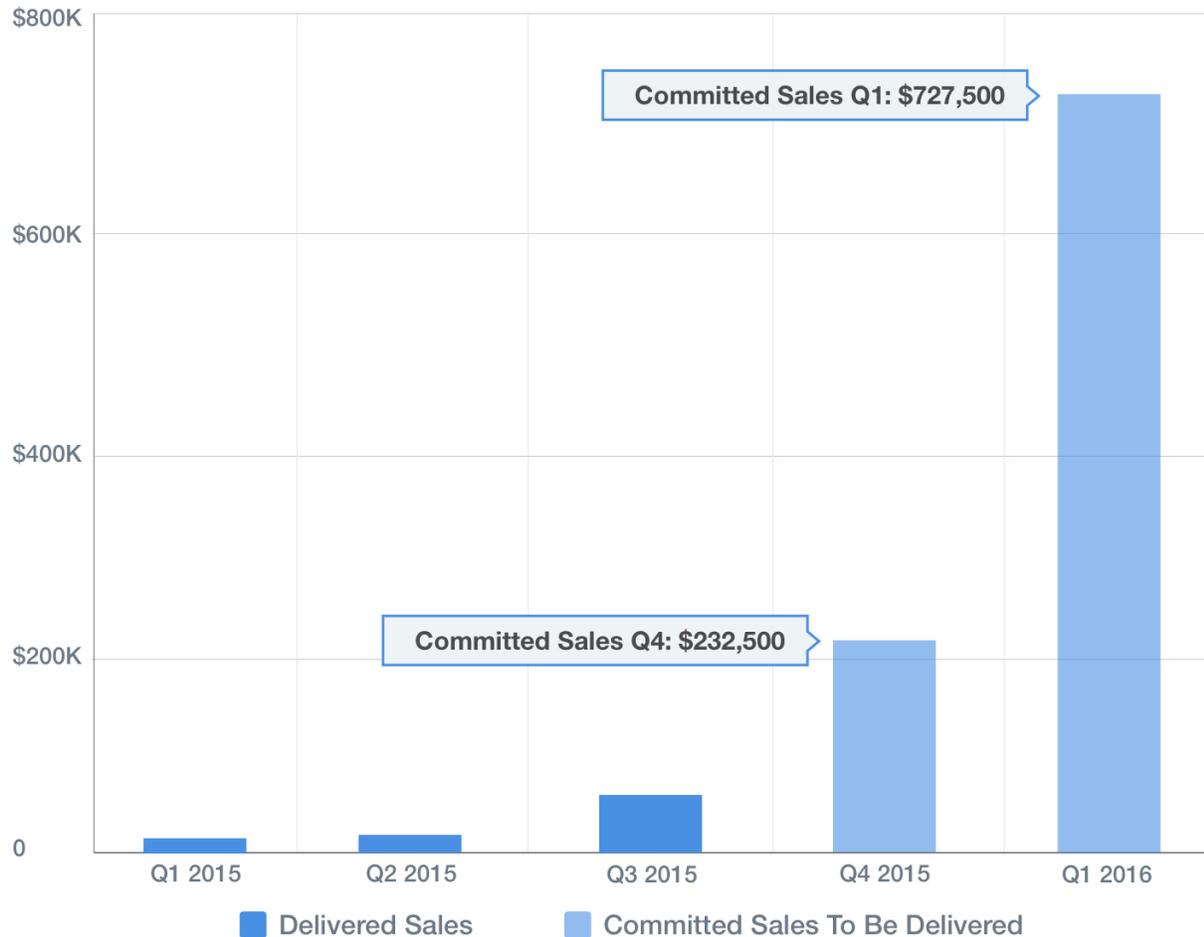
The Numbers

Produce prices are set by the market, so farmers can only raise profits by widening margins. With the efficiency of Transcend lights a number of farms are already on track to double profits this coming year.



Growth

Transcend launched in January with a number of pilot programs. Farmers always test a variety of lights for a few growth cycles before making a decision. Now 9 months later nearly 80% of initial pilot customers have signed LOIs to outfit their entire farms.



Strengths vs. Risks

Even the greatest startups have uncertainties and weaknesses. Airbnb started by renting out their own living room, no insurance, no lawyers, no compliance. The future of young companies like Transcend is anything but certain. The best investors weigh both strengths and weaknesses before taking educated risks.

Strengths

- Patented technology that improves energy efficiency by 50%.

- Reduces costs for 1 acre indoor farm by \$500,000 per year.
- Lights are most flexible and coolest burning on market. Ideal for vertical farming.
- The future of farming is indoors.
- Almost all sales from inbound word of mouth.
- Lights last 5x the competition. Farmers spend less on new bulbs and save on labor costs.
-

Risks

- Engineering founder with little sales experience.
- Might be leap-frogged by another lighting technology.
- Long sales process. Farmers test lights for 6-9 months before any decision.
- 40% initial margins. Need large predictable demand before overseas production is possible.
- Building a solid sales and product development team is hard.

Founder: Brian Bennett

Brian has a degree in Optical Engineering and spent his entire career working with LEDs or LED lighting. Originally Brian worked for an LED manufacturer that built LEDs for display, e.g. rear projection television or business projectors. He then moved into general lighting work for some large lighting companies, both in management and application engineering roles, where he designed a number of different lighting products ranging from streetlights to office lighting, and managed teams of engineers doing electrical engineering, thermal engineering, mechanical engineering, and also quality control.

Brian's family has a small farm with chickens and sheep and fruits and vegetables. They used grow lights to start their seedlings and get a jump on the season before transplanting outside. Brian built the first iteration of Transcend LED lights to help his family grow more efficiently. Word got around the small farming community and a bunch of local farmers requested the lights. Brian then realized there was a big opportunity for a well-designed, advanced lighting system specifically for agriculture.

Interview

WF: What is photosynthetic light?

TL: Each type of plant needs specific colors of light to grow well, to be the right size, the right shape, the right flavor, and to grow at the right speed. Every plant is different; for example certain plants need more red light and others more blue light. We create the right mix of colors to grow each type of plant perfectly.

WF: How do farmers think about this? How do your lights improve yields and cut costs?

TL: We sell specifically to indoor farmers who need complete control over their grow environment. They need control of the temperature, humidity, and light levels to ensure predictable yields every single day of the year. This requires the right color of light and the right amount of light every hour of every day. Our lights are different because they give farmers that consistency and predictable yield using much less energy. When you need to run lights 24 /7 365 days a year, even the slightest energy efficiency results in huge savings and higher profits for farmers.

WF: How much do farmers typically spend on electricity?

TL: In many locations, energy costs can be as high as total profits for indoor farmers. Before our lights, indoor farming was reserved for the highest margin cash crops because most farmers just couldn't afford the electricity costs.

WF: How much more efficient are your lights?

TL: Currently, most lights on the market are conventional fluorescent or high pressure sodium. Our photosynthetic LED lights are 50-60% more efficient than fluorescent and sodium and 35-50% more efficient than other new LEDs. Not only are we much more efficient but thanks to our remote phosphor technology our lights last five times longer than any other grow light on the market.

WF: Who are your customers?

TL: Our customers are large commercial facilities. They tend to have multiple acres of greenhouses with all types of crops like lettuce, tomatoes, basil, arugula or flowers. An average facility might have hundreds or thousands of lights burning every day.

We have two different marketing segments. One consists of already-built facilities just looking to upgrade their existing light infrastructure. The other is new construction to which we sell as they're designing the facilities.

WF: Farmers are old school, will they really adopt the latest light technology?

TL: Agriculture is the oldest business in the country, everyone still relies on trade shows for buying and selling. The public commonly perceives farmers as behind the times on technology, but commercial farmers are always hunting for the latest tech to improve yields and lower costs. This includes: new nutrients, greenhouse design and lighting, and CO₂ generators.

WF: What advantages are farmers most drawn to about Transcend lights?

TL: The two most important aspects for farmers is how well lights grow their crops and at what cost. Our lights are better for plant growth, last 5x as long, and use 50% less power. For farmers, as long as we create the correct photosynthetic light, the nuances of technology matters little against cost or efficiency. So our sales pitch relies completely on the numbers.

While our lights typically cost more, they're 50% cheaper to run than the competition. Our LED fixtures cost about twice what a high pressure sodium fixture costs, but with electricity savings most farmers payback the difference within three years. If a customer lights their crops over 12 hours per day that payback time drops even further.

It's not just the energy savings. Our lights last ten years vs. 2-5 for other lights which means farmers not only buy 80% fewer lights they also save the labor costs of replacing 1,000 lights per acre every 3 years.

We're more efficient in every sense.

WF: How much do transcend lights save in energy costs per acre per year?

TL: At 12 hours per day and \$0.12 per kWh farmers will save approximately \$225,000 dollars per acre every year by using Transcend Lighting instead of High Pressure Sodium and would save \$50,000 per acre over competing LED fixtures.

WF: How many acres might one large farm have?

TL: The size of indoor commercial farms can vary. Small greenhouses can be less than an acre and large farms can have hundreds of acres of greenhouses.

WF: How do you prove your advantage to farmers?

TL: We win when farmers test different lights. Farmers typically buy a variety of high pressure sodium lights, fluorescent lights, and LED lights, then test them over a number of growth cycles to see how the plants respond. For food production, we are winning just about every application we're going after. Per watt of energy we always come out ahead and the only time a farmer has opted out of Transcend lights is when they want a much higher powered product.

Our current fixture (230 watt LED) is a good substitute for the 600-watt high pressure sodium lights. Those few farmers that require 1000 watts would just buy more LED lights until we've built a larger substitute in the coming months.

WF: How have sales and distribution gone so far?

TL: Most of our sales have come from trade shows and referrals within the tight knit farming community. Recently many of the publications have featured our lights. Our sales have mostly come from inbound leads interested in a light that can really save 50% on electricity costs.

We launched in January and the first customers are just getting completed test results from our lights after nine months. The feedback is overwhelmingly positive. The industry is audibly abuzz with the fact that Transcend lights are the highest performing fixtures available. Our plan is to ride this wave, continue to bolster our trade show efforts, and encourage farmers to share their experience.

WF: What other sales channels will you explore in the future?

TL: The sales cycle for indoor agriculture is changing fast. The old model relied on recurring revenue from bulb sales stocked with normal distributors like feed and supply stores. These bulbs were designed to last 1-2 years and be replaced, while every fixture was standardized to accept any bulb, Philips in GE and vice versa.

We're pioneering a new model with LED lights. Rather than rely on a traditional bulb Transcend is a fully integrated semiconductor system with a heat sink and electronics and reflectors. Each of our lights has different optical characteristics, different light output, different color qualities, it's more of a full-system-sale. Currently we work directly with big farms to design lighting systems specific to their needs. As LED evolves and more farmers insist on the technology, wholesalers and distributors will become accustomed to the tech and unique design and actually be able to sell and install our system themselves.

WF: How are your lights better for the future of farming?

TL: Farming is growing up, the entire industry is evolving vertically and our lights are perfect for this. Most lights on the market burn super hot, and must be kept a long distance from the plant leaves. Transcend lights rely on much cooler LED bulbs which can be placed inches from the plants, above plants, next to plants, below and behind plant beds. Our lights are the right temperature and have the installation flexibility necessary for vertical farming in ways that fluorescent and sodium lights just don't.

WF: How long is the typical sales cycle?

TL: The typical sales cycle is between six and nine months because it takes this long to properly test the lights. We started selling to commercial farms in January, so our first customers have now tested the lights for a full sales cycle and are now converting into big projects. We have three LOIs for \$960,000 worth of projects: a project in Canada, a project in Massachusetts, and a project in the Netherlands.

Between Q1, Q2, and Q3, we've more than doubled our pipeline of new customers quarter on quarter. In the last three months we've seen 8 customers begin trials with our lights. If all of these trials convert, we'll be looking at many millions in new sales.

WF: What are your costs and margins?

TL: We charge \$600 per light. A typical one acre farm uses 1,000 lights, which means \$600,000 in sales. Our cost of production for each light is \$358 and our margins are just over 40% which is fantastic for our first production run.

WF: How low do you think your production costs can fall?

TL: That's a good question. Part of my background is international manufacturing of lighting fixtures. I've audited 75 factories in China over the last five years, and also have a firm understanding of the manufacturing options here in the U.S. It looks like we can get our cost of goods sold to \$190 per fixture, at volume.

Such low costs will require a steady sales volume and forecast to ship container after container from China. Such supply risk doesn't make sense for us at such an early stage, so we'll bite the bullet on margins for now. 40% is a good start and as soon as volume picks up we know exactly where to go to lower costs and achieve 60-65% margins.

WF: How big is the market?

TL: The indoor farming market currently billions every year on all types of lights. LED lighting fixtures are projected to sell about 500 or 550 million dollars worth of lights in 2015.

The demand for LEDs by established farmers is doubling every two years, so by 2020, the market is projected to be \$3.5, \$3.6 billion dollars.

These numbers are only reflective of the established market. There 20,000 acres of indoor farming here in the US and hundreds of thousands of acres worldwide. We see a hundred billion market as the industry expands and the efficiency of indoor farming is adopted everywhere.

WF: Can you talk more about the evolution of the indoor farming market?

TL: Our market is growing in two ways: the industry is turning to the efficiency of LED lights, and indoor farming in general is expanding. Because of the cost savings all these established farms are considering new lights for the first time. There are also dozens of new indoor farms being built in the US, that cover hundreds if not thousands of acres being installed over the next couple of years.

WF: How do you think about competition?

TL: Our niche - LED lights - is quickly emerging in horticulture. There are a few venture-backed companies that started before us and are doing quite well. But they still rely on a variety of lights to generate the proper photosynthetic spectrum. Our advantage is the patent-pending technology that creates photosynthetic light with just blue LEDs which last longer and use less energy.

WF: How protected is your technology? Why can't a competitor make the switch to LEDs?

TL: First we developed the technology ourselves which gives us a big head start. We filed a provisional patent a little over a year ago, and converted that to a full patent and PCT for international patents around the world. We have multiple different claims that cover our wavelength conversion system which allows us to swap different spectral components for different plants and different plant phases. We're well protected on our technology for creating photosynthetic light with blue LEDs.

Blue LEDs are increasing in performance and decreasing in price in a very predictable way. There's a complement to Moore's Law for LEDs called Haitz's Law. Essentially LEDs are becoming brighter and more efficient at a lower cost every year, which means our lighting fixture performance is increasing every single year, even if we don't invest in research and development. We have protectable technology that's already more efficient than our competitors, and every year that efficiency is widening the gap between us and them.