



heliospectra

Annual Report 2019

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Nectar Farms CEO Stephen Sasse upon placing a major order for a MITRA solution:

*"This also makes sure that Nectar Farms produces **high yields and high quality products** to our local **dealers and consumers.**"*



150%

Orders received increased by 150 per cent during 2019. Growth was strongest during the second half of the year following the launch of MITRA.

65%

The equity assets ratio is 65 per cent. The company's financial position is strong following its two new share issues in 2019.



The year in brief

2019 was characterised by the decision taken in 2018 to renew the product portfolio with the development of MITRA. The decision involved a risk that sales would be affected, which was the case as sales fell by 43 per cent during the year. However, market acceptance of MITRA was good and we leave 2019 behind us with full order books and a positive business momentum.

Significant events

- The launch of MITRA, specially designed for light-hungry plants such as cannabis, tomatoes and cucumbers.
- Heliospectra's service offering is brought under the helioCARE brand.
- The company carried out two new share issues totalling SEK 104 million. Both emissions were covered 100 per cent by subscription and guarantee commitments from major owners Weland and Midroc.
- The company opened new offices in Toronto, Canada and Tokyo, Japan.
- Orders with a value of SEK 72 million for a MITRA solution were received from Nectar Farms in Australia.



Financial key ratios (SEK thousand unless otherwise indicated)

	2019	2018	2017	2016	2015
Orders	119,848	47,806	43,814	22,729	–
Net sales	25,530	45,370	36,039	23,053	13,686
EBITDA	-47,712	-30,526	-28,770	-38,446	-28,473
Operating loss	-51,545	-33,251	-33,089	-42,784	-32,360
Cash flow	43,078	-29,468	-32,307	54,092	-12,721
Cash and bank	54,243	11,165	40,633	72,940	18,848
Equity	60,687	15,207	48,303	81,474	28,147
Equity/assets ratio, %	65	38	65	77	56
Quick ratio, %	255	119	324	614	277
Number of shares, thousands	56,178	35,112	35,112	35,112	18,622

Total solutions based on knowledge

Heliospectra offers results-driven solutions for smart plant lighting and optimised cultivation based on a deep understanding of plant physiology, photosynthesis and LED technology.

Vision

Our vision is to feed and heal the world through our unrivaled passion for sustainable growing and relentless pursuit of innovation.



Offering

The company's offering is targeted at greenhouses and indoor growers of medicinal plants, foodstuffs, herbs and micro greens, and to academic and agtech researchers.

The offering consists of total solutions that rest on three pillars:

- **Lighting,**
- **control systems** marketed under the brand name **helioCORE** and
- **services** marketed under the brand name **helioCARE**.



MITRA INDOORS | GREENHOUSES

Intensive and dimmable light for greenhouses and indoor cultivation in a modular design.



ELIXIA INDOORS | GREENHOUSES

Adjustable spectrum and superior ability to control lighting in greenhouses and indoor cultivation.



SIERA INDOOR | VERTICAL | RESEARCH

Slim profile, light weight specially designed for vertical cultivation



DYNA RESEARCH

Specially designed for the research market with superior abilities to fine tune the spectrum.



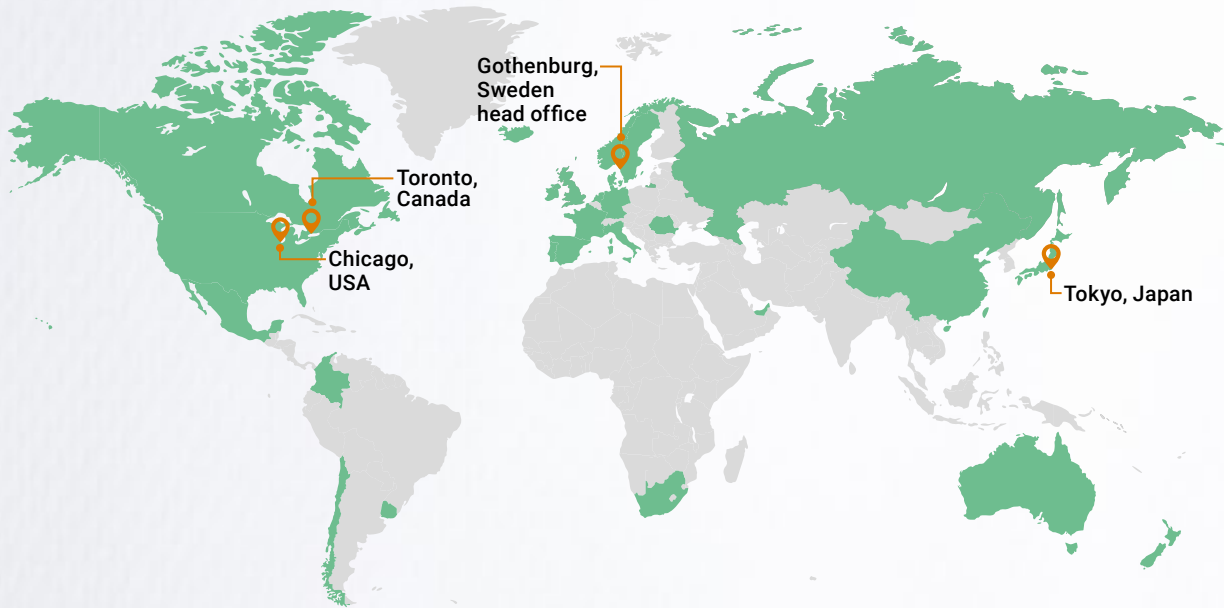
Light control system that allows the grower precise lighting control for better, more uniform results.



Training, consultations, tests and specially designed lighting strategies are all part of Heliospectra's service offering.

Global presence

Today, the company's lighting solutions are in use on every continent including the Antarctic where the company's products form part of a research project run by the German aerospace agency. The company also has offices in four countries.



"The EDEN ISS research project is tasked with developing cultivation technology for space."

From research to commercialisation

2017-2019

Commercialisation, software and services

Staffan Hillberg, who has been with the company since 2010, resigns as CEO in 2017 and is replaced by Ali Ahmadian, with the background as an entrepreneur and executive positions in companies including TetraPak. The company focuses on market driven product development and revenue generation.

2018 sees the launch of helioCORE, the software-based control system that automatically maintains a desired light level in greenhouses while also optimising energy savings by taking incoming natural sunlight and energy prices into account.

The organisation is fine tuned in 2018 and assembly is outsourced to a major Swedish production partner.

In 2019, Heliospectra brings its service offering under the brand name helioCARE and launches the new MITRA lighting series whose intense light is ideally suited to light-hungry crops.

2014-2016

Stock exchange listing and commercial breakthrough

In 2014, the company's stock is listed on Nasdaq First North at the same time as the depository share is taken up for trading in the US.

The company receives its first major commercial order from a grower in the USA who orders 20 of the recently launched LX60 model. The success continues in 2015, among other things with a breakthrough order worth almost SEK 6 million for medicinal plant growers in the US. In 2016, the company increases its marketing efforts and at the same time it receives its first order for an E60, a simplified development of the LX60.

Heliospectra's position at the leading edge of technology is consolidated when a water-cooled version of the LX60 is created for the EDEN ISS research project run by the German Aerospace agency. Cultivation in space is simulated in a container at the South Pole.

2013

LED introduced

Luminaires are fitted with LEDs with different light frequencies.

The development of a volume product intended for plant production is begun in collaboration with suppliers; the development of sensors in collaboration with Chalmers continues. Sales consists of lighting to researchers.

2006-2012

Company formation, early development and the first sale

Heliospectra was formed in 2006 by plant researchers together with The Incubator in Borås and a number of equity investors with the aim of developing plant lighting based on a biofeedback system.

The strategy involves developing a complete lighting system for the large-scale greenhouse market for vegetables, fresh herbs and ornamental plants. Light recipes are created for various plants, and sensors developed in close collaboration with Chalmers University of Technology.

Weland joins as part owner in 2008, and in 2011 they are joined by Midroc. In 2012, the company sells its first grow lights to customers in Australia, Holland, England and Sweden.

Stronger market position follows transition year

2019 was a year of transitions as we rebuilt our product portfolio for Heliospectra. The strategic decision in mid-2018 to revamp our product portfolio created some challenges. But with the hard work of our team, we came out of 2019 in a stronger market leadership position and with good momentum in our business. Heliospectra remains dedicated to our front-line mission of helping growers and their businesses feed the world and heal the world in a sustainable way with locally grown products, superior yields and highest quality crops.

In 2018, our main lighting product for the greenhouse and indoor growing market was ELIXIA, which was originally developed in 2014. ELIXIA has a variable spectrum, which is a great feature for many crops and applications, but not necessarily for light-hungry crops like tomatoes, cucumbers and cannabis, where quantity (or intensity) of light is as important as its quality (or spectrum). We could continue to push ELIXIA for light-hungry crops too but would put Heliospectra at reputational risk and undermine our long-term market position as light and plant experts.

MITRA is a market stand out

Committed to providing our customers and growers with advanced lighting technologies and innovative performance, we anticipated the need to update our ELIXIA series to the new MITRA platform, aware of the risk to our order intake and sales in the short term. Our aim was to optimize capital expenditures for new customer

installations while delivering a powerful new light that helped our growers achieve reliable production results. The 2019 introduction of MITRA was met with immediate customer interest and orders. MITRA's highest controllable light output in the LED market, an efficacy of up to 2.8 $\mu\text{mol}/\text{J}$, and modular form factor with multiple spectra differentiates Heliospectra in a crowded market.

In September, Heliospectra won the Lighting Systems award at the Grow Up cultivation conference in Ontario, Canada. The award recognizes the best LED lighting product in the market, as voted by the cannabis industry. The award and our participation in other horticulture trade shows and photobiology speaking panels garnered high interest and orders from customers that immediately recognized that MITRA, together with our helioCORE light control system, elevated Heliospectra above the competition.

Stronger local presence in North America

While we developed the new product platform, we also reorganized our internal team to focus more on sales and growth. These efforts included my own temporary move to Canada to establish the Heliospectra Canada Office and the creation of a more focused organization across our key markets in North America. These initiatives give Heliospectra a stronger local presence in a very dynamic market and enable us to develop strong strategic partnerships with global players across the industry.

The strongest current driver of the North American grow light market has been cannabis. The sales revenues of the certified recreational growers in Canada have so far fallen short of initial expectations. There are many reasons for this, including a sluggish rollout of physical retail stores, lack of production experience and challenging technology choice. However, we believe that the recreational and medical growers will mature in their operations and turn their focus even more to quality which can be achieved by right technology choice and obtaining expertise. This will benefit us as we are advantaged with integrating control and automation into the production process and support our growers with our technical services through our helioCARE service platform.

“With world-class solutions, our holistic systems approach and our cultivation expertise, Heliospectra is well-positioned to be the right partner and the right technology for both the short and long term.”

Produce dominates the long-term

While medical cannabis continues as an important driver for the grow lighting market today, food will dominate as the longer-term opportunity. As populations and cities grow and the need to address climate change becomes ever more urgent, our long-term commitment to supporting commercial food growers and future food supply with local and global market presence is vital. Microgreens, herbs and salads, grown in urban vertical farms and greenhouses will become more common. Heliospectra solutions and our technical helioCARE expertise enable food growers to apply and control light for more efficient production cycles. Our customers consistently deliver locally grown, nutritional produce to market faster while reducing carbon footprint and plant waste.

In the end, the opportunity to scale sales and markets for both food supply and medicinal plants depends on creating clear economic benefits for the grower that demonstrate our ability to boost yields, nutritional or medicinal values, flavour and shelf life. With world-class solutions, our holistic systems approach and our cultivation expertise, Heliospectra is well-positioned to be the right partner and the right technology for both the short and long term.

With that, I would like to thank the entire Heliospectra team for their hard work and the passion for our customers that you have shown throughout the year. I would also like to thank our shareholders for supporting us in our decision to prioritize our long-term market position and leadership. I look forward to a bright future for Heliospectra.

Ali Ahmadian, President & CEO



The light environment affects the development of plants

Plants use light as an energy source to power photosynthesis. But the light also provides signals to the plant about the environment it's growing in. These signals can affect how the plant will look – its stem, leaves and colour.

By selecting the right light, growing can be optimised to provide better, more consistent results.

Different types of light

Light is a form of electromagnetic radiation and is sorted by wavelength. The spectrum visible to the human eye usually includes wavelengths between approx 380–740 nanometres. Shorter wavelengths are known as ultraviolet, and longer wavelengths as infra-red.

Light, including light beyond the visible spectrum, affects plants and can give

them different characteristics. Plants have proven to be affected by light with wavelengths between 280–800 nm. This part of the spectrum is known as Photo-Biologically Active Radiation (PBAR).

The bandwidth used by plants for photosynthesis is roughly the same as that perceptible by the human eye, around 400–700 nm. This band is known as Photosynthetically Active Radiation (PAR). Plants are most efficient at using blue light, 400–500 nm, and red light, 600–700 nm, to power photosynthesis. The light that humans are best at perceiving is the green light in between. Put simply, blue light results in compact, sturdy plants while red light causes plants to grow taller.

Even if green light is not as effective for powering photosynthesis, it is important to include it in plant lighting. If plants are cultivated under blue and red light without the green component, they will look black to people working with them, which makes

heliFACTS

Did you know that...

...the red pigment in red leaf lettuce acts as a sort of sunscreen, which can inhibit growth and extend the growing phase. Energy is conserved by applying a lighting strategy that keeps the lettuce green longer during the growth phase.



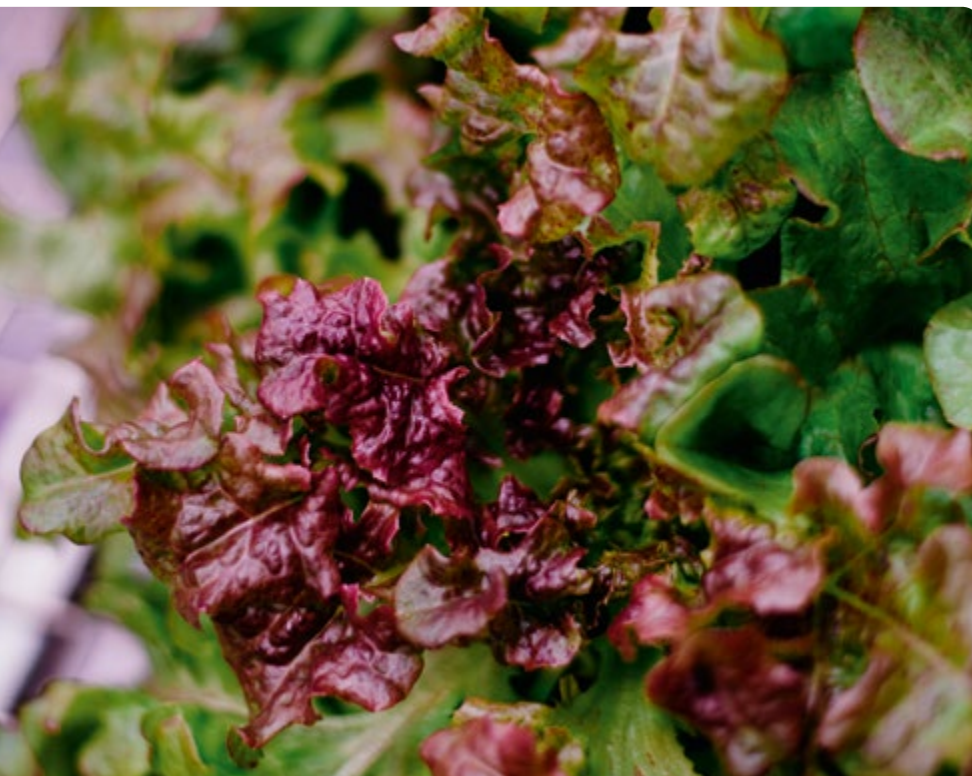
it more difficult to reach conclusions about plant health, a lack of nourishment, diseases or attacks by pests. Also, over time, it will become an unpleasant working environment for the grower.

Cultivation and light

During cultivation, lighting is used to replace natural light in indoor cultivation and to complement natural light in e.g. greenhouses. Because plants have the ability to absorb light for more hours than natural daylight is available during major parts of the year, lighting is used to extend the day in greenhouses. Thus, daily growth is increased, shortening the time between planting and harvesting.

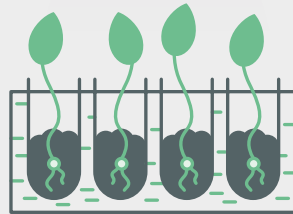
Plants are affected by light in many different ways. The different wavelengths, their balance, intensity and duration all contribute to a lighting environment that affects how plants grow and how the end product will look. Growers have long controlled aspects such as temperature, humidity and the level of carbon dioxide. Limitations in both knowledge and technology mean that light has been one of the last aspects that growers have learned to control.

With its deep understanding of how light affects plants during various stages of growth, Heliospectra creates light recipes customised to provide what the grower seeks to achieve. This might include growing more effectively, creating stronger plants or getting the plants to look in a particular way, e.g. to get herbs to grow taller and thereby fill an entire package.





Seeds germinating in plugs.



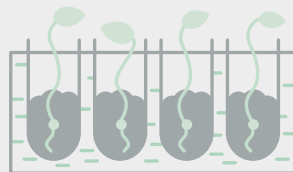
When the shoots emerge, they are placed under LED lighting.

The goal is many leaves to receive light, and a compact, sturdy plant with a good root system able to cope with transplantation to a pot.



The plant is transplanted into a pot and passed on to production.

Greenhouses have natural light that varies with the seasons and weather. Added light must complement natural light and stimulate the right growth at the lowest energy cost possible.



The wrong light will result in a rickety plant unable to survive transplantation.



Too little light or the wrong light will mean drooping plants that create problems with increased humidity and more damage.

Treatment with light

At the end of the production cycle, the plants can be treated with light e.g. to provide them with longer life, a different taste profile or a different appearance. Keep your eyes peeled for our helioFACTS for examples.

Multiple trends driving demand

The market for grow lights is affected by multiple trends which, according to external opinion, is expected to support financial growth in the years ahead.

LED-based grow lights in particular are expected to grow quickly¹. Growth will come from new installations and the replacement of old lamps.

Technology HPS

The most widespread technology in terms of existing installations concerns high-pressure sodium lamps (HPS), which is a proven technology that has been used for grow lights since the 1940s. The light spectrum in HPS lamps tends to be mostly in the red band, even if modern lamps have a better balance. Too much red light causes plants to grow too tall and become rickety, which is a major risk in cases where artificial lighting cannot be supplemented with a sufficient amount of natural sunlight. HPS lamps also give off a great deal of heat, which increases plant watering needs.

LEDs

Light-Emitting Diodes (LEDs) are the fastest growing technology. LEDs were first launched as grow lights at the end of the 1990s and the beginning of the new millennium, but the technology never took hold. Poor quality meant that LEDs got a bad reputation instead. In 2013, Heliospectra was one of the first companies to launch high quality LED grow lights. Today, the technology is fully established and its issues now concern how the technology can be customised to suit a grower's specific needs.

Compared to other technologies, LEDs are more expensive to purchase but cheaper to operate. They have several advantages compared to HPS: the light spectrum and intensity can be controlled, thus providing better growing results; LEDs are more energy efficient, which reduces costs; LEDs have a longer service life and need replacing less often, which reduces maintenance costs; they are more compact and do not give off as much heat, which means lighting and seed beds can be placed closer together in e.g. vertical cultivation. Also, because LEDs do not give off as much heat, cooling costs are lower, and these can be significant in warmer climates.

helioFACTS

Did you know that...

...LEDs allow the cultivation of healthy, thriving flowering plants entirely without natural light (sunlight).



Other technologies

HPS lamps are a type of high-intensity discharge lamps. Other lamps of the same type, and which are also relatively common as grow lights, include metal halide. They have a broader light spectrum than HPS, but are relatively expensive and contain mercury. Metal halide is also found in a more modern variant, ceramic metal halide. There are also different variants of fluorescent lamps. Compared with all of the above technologies, LEDs have lower operating costs and allow greater control of the light spectrum and intensity.

“The low energy consumption of LED technology, its lower heat generation and the ability to control the spectrum and light intensity makes it superior to other grow light technologies.”



¹) Technavio predicts growth close to 19% per year for the period 2019–2023 for the grow light market as a whole. BIS Research predicts growth of just over 23% per year for the period 2019–2024 in the market for LED-based grow lights.

Macro trends

Population increase

According to the UN, the world population is expected to grow to almost 10 billion people by 2050, which will mean an increased demand for food. At the same time, improving incomes in poor countries will lead to changed eating habits with greater elements of meat, fruit and vegetables compared to today's grains, putting additional pressure on food production.

Urbanisation

More and more people are moving to cities. Cities that are already large will continue to grow, increasing the demand for food in these areas while the availability of nearby arable land will fall as previous agricultural land is exploited for building. This is driving the emergence of cultivation that uses surface area more effectively, such as indoor and vertical cultivation.

Climate change

Climate change is affecting and will continue to affect agriculture around the world. Growing seasons are prolonged in some parts of the world while others suffer greater unpredictability in precipitation and more frequent dry periods, creating greater uncertainty in food production.

Market trends

Indoor cultivation

Indoor cultivation is used in areas where greenhouses or outdoor cultivation are not viable solutions. An isolated environment not only reduces the need for pesticides against noxious insects, but also provides a greater ability to control in detail all aspects of cultivation. Compared to greenhouses, the cost for controlling an indoor climate is lower, but on the other hand, all of the light is electric. The lower energy consumption of LED lighting compared to competing technologies is therefore a great advantage.

Vertical cultivation

A version of indoor cultivation is the vertical variety where crops are stacked atop one another, either in beds or towers. This enables the cultivation of more crops on a smaller surface, which is ideal for e.g. micro greens or low growing herbs in

urban environments. In Japan, which is one of the countries that has advanced furthest, cultivation takes place in aseptic environments with a high degree of automation.

Focus on energy consumption

Energy consumption is the biggest cost when growing in controlled environments such as greenhouses or indoors. Energy costs relate partly to climate control, e.g. heating and cooling, and partly to lighting. Even if the growers in colder climates who must heat their greenhouses in the winter have appreciated the heat given off by HPS lighting, the trend is toward more energy efficient specialised heating and LED lighting for cost-saving reasons.

MITRA was launched in June when the GreenTech trade fair kicked off in Amsterdam in the Netherlands. A unique modular design allows a broad range of adaptable models for greenhouses, indoor cultivations and vertical installations.





The helioCORE control system and dimmable luminaires supplement the daylight that flows in through greenhouse glazing automatically with the right quantity of electric light.



Indoor cultivation provides the grower with great abilities to control light quality, e.g. to make basil more cold resistant.

Heliospectra’s market segments

Estimations of the total market size for grow lights vary somewhat, but is currently thought to be worth around USD 3,500 million². Heliospectra’s offering is aimed at three different segments with different lighting requirements: traditional greenhouse farming, indoor and vertical cultivation, and research. Today, the company estimates its addressable market to be around USD 300 million annually, where traditional greenhouse farming accounts for 60 per cent, indoor and vertical cultivation for 30 per cent and research 10 per cent.

Traditional greenhouse farming

Heliospectra targets growers who have invested in greenhouses. In addition to glass, there are plastic greenhouses and so-called hoop or tunnel greenhouses, also plastic. Compared to conventional farming, a greenhouse provides a more controllable environment and more consistent, reliable crop performance both in terms of quality and quantity.

However, glass greenhouses are found mostly in wealthier parts of the world in the northern hemisphere where sunlight fluctuates and is unreliable, making production vulnerable and inconsistent. Lighting, which in existing greenhouses usually consists of HPS lamps, can be used to complement natural daylight and smooth out production.

If it is to replace existing lighting, LED lighting must be capable of suspension from the existing infrastructure. The great height between growing benches and lighting demands specialised optics to deliver a uniform light pattern. This is

especially important for plants that are cultivated in beds such as herbs and lettuces. Light intensity is important for light-hungry crops such as tomatoes or cucumbers.

The environment in a greenhouse is humid and temperatures are often high, which demands lighting with a high IP rating. IP stands for ingress protection and is the standard describing how well encapsulation of electrical equipment protects against e.g. moisture and dust.

Indoor cultivation

Indoor cultivation often involves medical cannabis, with North America as the leading market. Cannabis is currently illegal at the federal level in the USA, but it is legal to cultivate and sell in some form in 33 states. In Canada, cannabis was fully legalised in October 2018.

The cultivation of cannabis is mainly split into two different segments, specialised either by volume or quality. Because

helioFACTS

Did you know that...
...the right LED light can change the taste profile of plants.



2) Technavio and Mordor Intelligence.



In vertical cultivation, crops can be stacked in beds atop each other or as shown here, in towers.

cannabis is a light-hungry crop, high intensity is a basic lighting requirement.

Volume producers focus on getting as much volume as possible for the lowest costs possible. They seek thin-profile lighting with low heat generation to make room for more plants on a smaller surface.

Quality producers focus on creating a specialised chemical profile relevant for the medical market. Because crop performance is important for them, as is the same chemical consistency every time, they value being able to control the light.

Vertical cultivation

Large-scale vertical cultivation is still a relatively new phenomenon even if the concept has been around a long time. Typical specialised large-scale farmers in this niche in the USA are AeroFarms and Plenty. Vertical cultivation enjoyed an upturn in Japan following the earthquake and subsequent nuclear power catastrophe at Fukushima in 2011 when concerns about radioactive radiation were high on

the agenda. Major companies such as Panasonic, Fujitsu and Hitachi began vertical cultivations.

Lighting for vertical cultivation must have a very thin profile and high IP rating as the crops are tightly packed in a damp environment.

Research

The research market consists of researchers studying plants in academic environments or at agro-technology companies. It could be anything from a single lamp in the laboratory to greenhouse cultivation covering several hectares. This market has extremely high quality standards and important factors include a consistent light pattern, so that experiments are repeatable, and a great ability to fine tune the light.

The market is small in volume terms but important from a prestige perspective. Contact with companies and universities also means Heliospectra participates in the development of tomorrow's technolo-

gies and markets. Typical prestigious contexts in which Heliospectra is taking part or supplying lighting to include a consortium led by the German Aerospace Agency for cultivation in space, the North American Space Administration's simulation of a Mars expedition and a research project run jointly by Google and the Massachusetts Institute of Technology (MIT).

Competitors
The market for grow lights is fragmented with a number of smaller operators with various degrees of technical and biological expertise. Heliospectra's biggest direct competitors are Signify, Lumigrow, Illumitex, Fluence and Hortilux.

The solutions that make a difference for the grower

Compared to conventional lighting, LED technology already has several advantages including lower energy consumption and thus lower operating costs.

Also, Heliospectra uses its expert knowledge of light and its effect on plants to create solutions that further improve growing economy.

Cultivating foodstuffs or medicinal plants is often a competitive existence with thin margins. Accordingly, factors that can lead to better performance weigh

heavily in the sales process. Heliospectra's background as a research company and its reference list of satisfied customers means the company enjoys the great confidence of the market for delivering solutions that lead to better crop performance.



Higher rates of return

Under the right lighting over the right period of time, returns per square metre increase. In greenhouses, where growers have already made a major investment in the glazing, Heliospectra's solutions complement the daylight. The lighting is dimmed automatically depending on the weather to achieve the desired light intensity during daylight hours and to extend the photoperiod after sunset.

Twice the tomato harvest

Heliospectra's solution helped a greenhouse tomato grower in Mexico increase rates of return while also reducing his labour costs. Without lighting, the energy from the sun was not sufficient for every tomato on the plant to grow to the right size, which meant the grower was forced to sort. By adding more energy and extending the day with lighting, the grower avoided sorting, which saved hours while also doubling the tomato harvest.

Faster harvests

By optimising lighting, cultivation time i.e. the number of days between planting and harvesting, can be reduced. Heliospectra's solutions allow extension of the photoperiod and fine adjustment of the light to optimise growth, while the LED technology reduces electricity costs for both lighting and cooling.

Four generations of wheat

By replacing its HPS lighting with Heliospectra's adjustable ELIXIA series, Tel Aviv University's Institute for Cereal Crops Improvement could reduce the cultivation period so that four generations of wheat could be produced each year, instead of two. This enables researchers to perform more tests and speed up the research process.



*“By using **lighting** to extend the day, the grower avoided sorting while also **doubling his tomato harvest.**”*

Improved quality

With the right lighting strategy, the grower can increase the quality of his crops and reduce waste. For example, a uniform light pattern makes sure potted basil all grows to the same height. Plants that do not fill a bag are rejected, which means poorer economic performance for the grower. Advanced lighting strategies can also give plants specific characteristics.

Cold-resistant basil

By changing the balance between red light and infra-red light in Heliospectra lighting, Vitacress was able to make basil grown in greenhouses more resistant to cold and thus better able to cope with the British winter while also extending shelf life. Vitacress' reputation as a supplier to British food stores is based on delivering high quality, and the company sees Heliospectra as a means to continue developing its production.



Greater control

By using Heliospectra's lighting and the helioCORE control system, growers can enjoy greater control over the light used in production, and thus greater control over harvesting times and the quality and quantity of the end product.

This means the production of e.g. dill can be scheduled to coincide with major holidays such as Christmas. Or that fresh herbs and microgreens can be supplied in precise quantities all year-round.

Safe lettuce production all year round in Canada

Variations in natural light over the seasons made it difficult for a lettuce and microgreens producer in Canada to plan production and meet demand from retailers throughout the year. Heliospectra's helioCORE lighting control system complements daylight with LED lighting to provide the plants the same amount of light all year round. It provides for a consistent, predictable production and satisfied customers.

Total solutions that rest on three pillars

Heliospectra offers lighting solutions to commercial growers that will improve their crop and financial performance. The solutions consist of a proprietary LED-based grow lights, software and hardware based lighting control systems and services. For researchers, Heliospectra offers grow lights with the market's most precisely adjustable light spectrum.

Products and services LED luminaires

Heliospectra markets and sells four product series. Two with adjustable spectra, ELIXIA and DYNA, and two with fixed spectra: MITRA and SIERA.

ELIXIA and MITRA are aimed at the indoor cultivation and commercial greenhouse markets. ELIXIA has an adjustable spectrum and the means for great light control. MITRA has a high IP rating, a modular design, affordable price and an intense, dimmable light that is ideal for large greenhouses and indoor installations for vegetables and light-hungry crops such as cucumbers, tomatoes and cannabis. MITRA is available with three different spectrum options.

SIERA was primarily designed for the vertical cultivation market. It has a high IP rating, an extremely thin profile, is light and available with five different spectrum options.

DYNA was specially designed for the research market and offers superior abilities to fine tune the spectrum.

helioCARE

Heliospectra's service offering is marketed under the helioCARE brand. The company offers consultancy services concerning both cultivation and around the installation. An overview of the offering is provided below.

Custom lighting strategies

Heliospectra creates lighting strategies to help the customer achieve specific crop performance such as bigger harvests; higher, more consistent quality or a particular plant morphology, i.e. how the plant should look.

Installation design and electricity supply analysis

If lighting is to function at its best over time, it's important that the installation be

Under its helioCARE brand, Heliospectra offers e.g. help with installation design and electricity supply analysis.

ELIXIA is dimmable and has a controllable spectrum, making it a flexible solution for many applications.



designed and adapted according to the prevailing conditions, including the available power supply. Heliospectra measures, calculates and plans projects so that both installation and operation take place without interruptions.

Cultivation and lighting consultation

Heliospectra is able to help growers improve their performance by optimising the lighting environment and assisting with plant-specific problems.

Cultivation and lighting training

Heliospectra offers customised training programmes for customer employees to raise the level of practical knowledge about e.g. growth optimisation and lighting strategies. Training can be carried out both before and after installation.

Cultivation tests and pilot projects

Heliospectra can carry out customer-specific plant research to provide growers with the ability to accelerate their growing processes to achieve specific goals for their crops. For major customers, Heliospectra can also carry out pilot projects to ensure that new solutions function optimally before they are implemented on a larger scale.

helioCORE

Heliospectra's helioCORE light control system was launched in 2018 and enables superior control of plant lighting. Hardware in the form of light sensors and modular software provide the grower with the ability to control lighting precisely to achieve better, more consistent performance. Among other things, the grower can set up several different light zones and create advanced lighting schedules. At the same time, the software can adapt lighting use according to prevailing electricity prices.

Today, helioCORE has three different software modules. The DLI module allows the grower to optimise plant growth and set how lighting should be used based on targets in the form of daily light integrals. The on-target module uses targets and dynamic dimming to achieve a constant level of the light used by plants in photosynthesis. The schedule module lets the grower control automated schedules and lighting strategies throughout the growing cycle.

Sales

Heliospectra's geographical core markets are North America and Europe, and sales take place directly and indirectly. Sales are mainly aimed at major industrial operators.

The company has its own sales teams in important markets such as greenhouse farming in Europe and medicinal plants

helioFACTS

Did you know that...

...the right LED light can raise the vitamin C content in plants.



such as cannabis in North America. The company also sells through dealers who are able to add customer value such as installation and training. Moving forward, the company aims to increase its network of value-adding dealers.

Heliospectra also seeks collaborations with partners who have complementary offerings and with whom it can offer customers total solutions. A typical example of such a collaboration is ABB.

Leasing

The company also intends to broaden its customer offering with leasing solutions financed by banks with guarantee commitments from the export credits guarantee board.

Heliospectra's products are ideal for leasing as they do not comprise fixed installations and have a stable resale value.



The Plant Lab at the Heliospectra head office in Gothenburg tests lighting strategies that later form the basis for the company's lighting solutions.

Product development with the customer in focus

Heliospectra's organisation, product development and manufacturing methods have undergone major changes over the past five years. Today, the company enjoys good internal abilities for product development and a strong manufacturing partner.

Research and development Heliospectra Plant Lab

Heliospectra is founded on its knowledge and expertise concerning light and plants. At the head office in Gothenburg, there is an 80 square metre clean room with 20 smaller plant growth chambers and a Con-

viron A1000 climate chamber. Since its inception in 2006, the company has carried out more than 340 tests of various lighting strategies that have formed the basis for developing the company's lighting solutions. More than 90 of these tests were performed internally, and 250 together with external partners and customers.

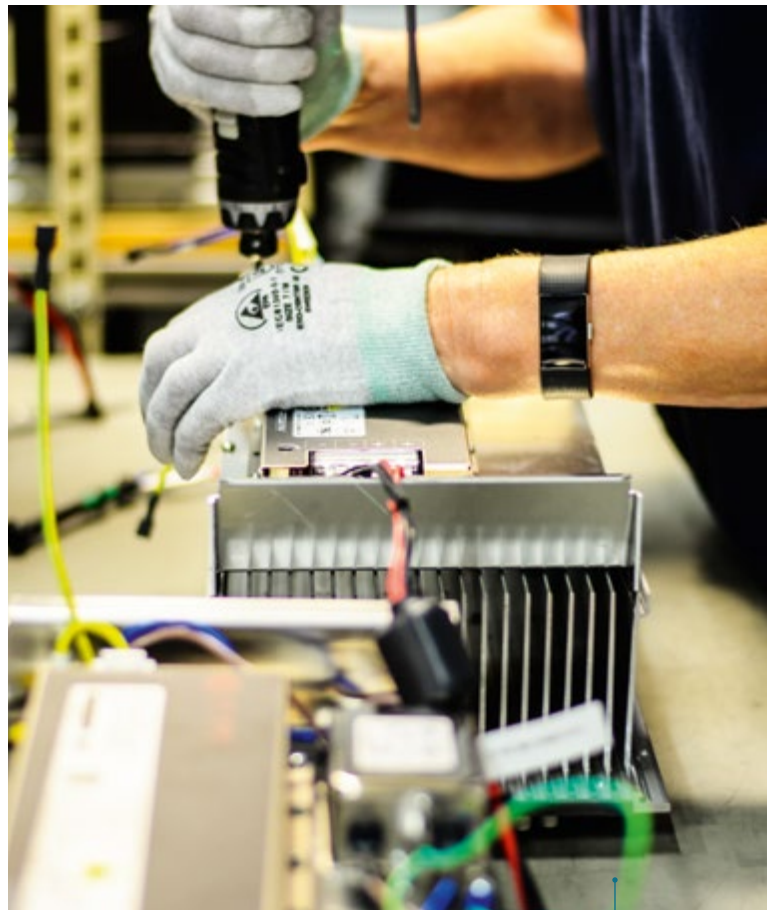
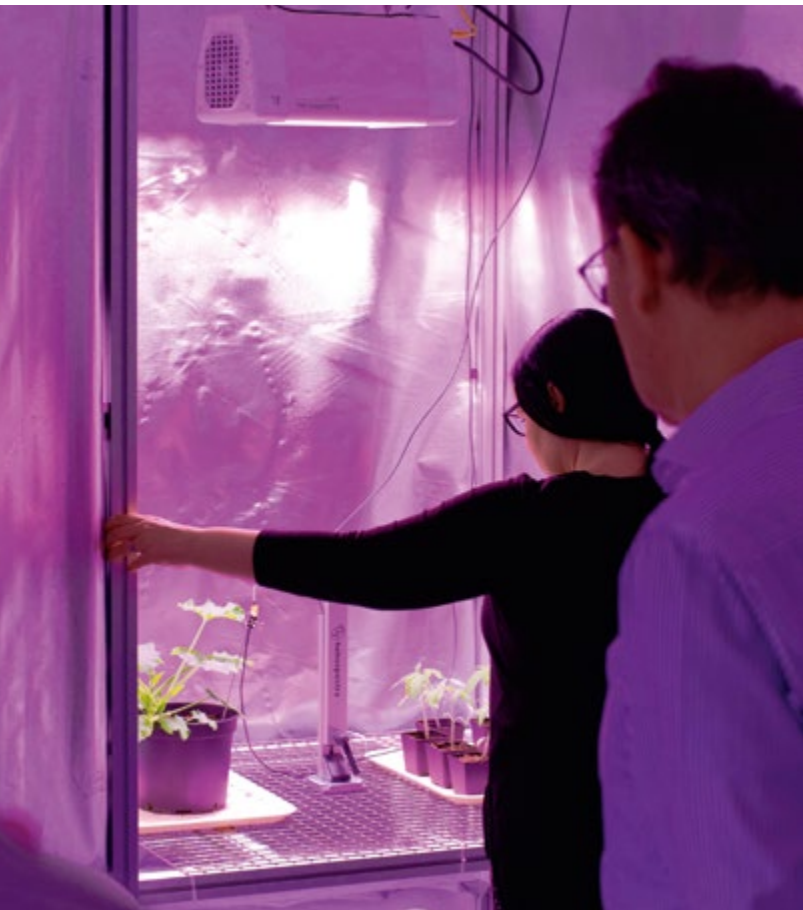
The company collaborates with multiple external research partners, and a number of projects are financed wholly or in part by grants. The company's collaborative partners include Wageningen University & Research in the Netherlands, the German aerospace agency DLR, the University of Guelph in Canada plus RISE and Chalmers in Sweden.

Product development, lighting

Since 2017, Heliospectra has strengthened its internal abilities in LED lighting product development and design. Previously, development was largely conducted together with an external partner. Development is carried out with the customer's needs as the focal point. The SIERA and MITRA lighting series are the fruits of the company's internal, customer-focused development efforts.

Product development, control systems

One possible future development of the helioCORE lighting control system will be to use sensors that can measure several aspects of the growing environment such



Since 2018, all final assembly is carried out by a major Swedish subcontractor.

as humidity and air quality. Later, helio-CORE fitted with additional sensors could adapt lighting automatically based on plant-health and how well their growth corresponds to the grower's targets.

Manufacturing

Heliospectra develops and designs its products in-house, while manufacturing is outsourced to external partners. The LEDs are made by well renowned manufacturers such as CREE, Philips and Osram, while the majority of the other parts are standard off-the-shelf components. Parts of the mechanism, plastic components and other mechanical components are manufactured in China. Since 2018, final assembly has

been carried out by a Swedish production partner. The products have very high reliability and quality. Historically, the return rate has been below 1 per cent.

The company works constantly to reduce lead times on critical components in order to respond quickly to changes in demand. The company has also made sure that the production partner is able to increase capacity as necessary using relatively little funds.

helioFACTS

Did you know that...

...plant height can be controlled by means of the right LED spectrum.



Culture with a passion for plants and technology

Its employees are Heliospectra's most important asset. It's why we work tirelessly to create a workplace that makes best use of their passion for plants and technology. Our culture is characterised by diversity, straight communication and an openness to ideas and contributions from all employees.

Our values

Our values define our culture and serve as a compass that guides our decisions and our behaviour.

Innovation and quality

Our goal is to drive innovation and transform the cultivation market. We do this without compromising on quality, while expanding and improving our product portfolio.

Sustainability and diversity

We believe in a green, sustainable and inclusive future for everyone. We advance by making best use of creativity and knowledge in a work environment characterised by diversity.

Collaboration and creating opportunities

We work close to our customers to recognise and understand their needs and challenges. We provide growers with the ability to reach their full potential by sharing our knowledge, solutions and experience.

Passion and integrity

Our passion for plants and technology fuels our innovations and creates value for our customers. We show integrity by hard work, straight talking, honesty and standing by our word.

Heliospectra as an employer

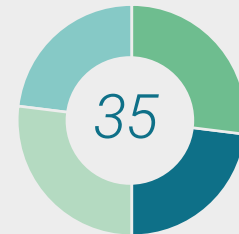
Its expertise on how plants and crop performance is influenced by lighting are what make Heliospectra stand out from the crowd. It allows the company to develop and implement lighting solutions that give the grower the best possible performance.

Accordingly, all employees are constantly encouraged to learn more about their passion and to share their know how e.g. by regularly participating in different industry gatherings such as conferences and exhibitions.

Annual Company Week

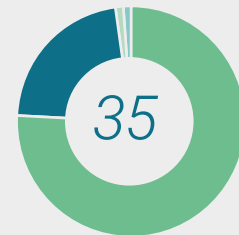
Every year, Heliospectra arranges Company Week at its head office in Gothenburg, in which personnel from all over the world take part. The days are taken up by interactive lectures and training courses for learning and exchanging knowledge, and team-building exercises to strengthen cohesion.

Number of employees by market area



- Marketing and sales, 10
- Research and development, 8
- Technical Services and Support, 10
- Administration and logistics, 7

Number of employees by country



- Sweden, 27
- North America, 6
- Japan, 1
- Great Britain, 1



Jessalyn Phillips tells us how it is to turn customers into long-term partners.

Jessalyn Phillips,
Regional Account Manager, East Coast Division, Americas

In March 2019, I joined the North American sales team. It's been awesome. One important thing I learned from talking to customers is that selling is not just about delivering high quality lighting solutions, but rather about providing holistic solutions modified to achieve what provides best performance in a specific growing application. We treat every customer as a long-term partner, and they choose to work with us firstly because of the consultative

relationship, and secondly due to our cultivation and lighting expertise. A typical example this year was our joint project with Griffin Greenhouse Supplies and Revolutionary Clinics for one of the biggest commercial cannabis installations so far in North America, which culminated in the production of a joint video about our partnership.

Daniel Bånkestad,
research and development engineer

Because we seek to be at the forefront of progress, we pursue our own research and development work and participate in various collaborative projects with academia and industry. We also travel to take part in conferences where academia and industry gather. In 2019, I personally visited Greensys in France, where we presented a poster showing how plants are affected by pulsating light, and Vertifarm in the Netherlands, where we took part in a panel discussion. For us, conferences are typically about investigating which research findings have the potential to lead to applications in the industry. It's a stimulating environment to work in, especially as the objective is to contribute to more sustainable food production.

Daniel Bånkestad talks about how it is to work at the leading edge of development.

"It's a stimulating environment to work in, especially as the objective is to contribute to more sustainable food production."

Stable, long-term major owners

The Heliospectra share has been listed on the Nasdaq First North Stockholm since 18 June 2014. Following a new share issue in December 2019, share capital totalled SEK 5,617,852 distributed across a total of 56,178,520 shares. Each share carries one vote. All shares provide an equal right to participate in the company's assets and financial performance.

Share-related incentive programmes

At the end of the reporting period, Heliospectra had two outstanding incentive programmes. At the time of publication, one had expired without any shares being subscribed to. Thus only one share-related incentive programme remains.

The extraordinary general meeting on 12 March 2019 resolved to introduce a new stock options programme for senior executives and other key individuals. A total of 1,000,000 series P02 share warrants were issued to the subsidiary Heliospectra Personal AB, which was authorised by the general meeting to transfer all or some of the stock options to senior executives and other key individuals. Such transfers must take place at the stock options' market value calculated according to the Black & Scholes model. Each stock option conveys the right to subscribe to 1 new share at a price of SEK 6.13 during the period from 1 March 2021 through 30 April 2021. A total of 880,000 series P02 stock options were transferred under the programme to senior executives and other key individuals. The dilution effect at full subscription is calculated at 1.7 per cent.

Dividend policy

Heliospectra's Board does not intend to propose any dividend be paid in the next few years. Any future profits will be reinvested in the business.

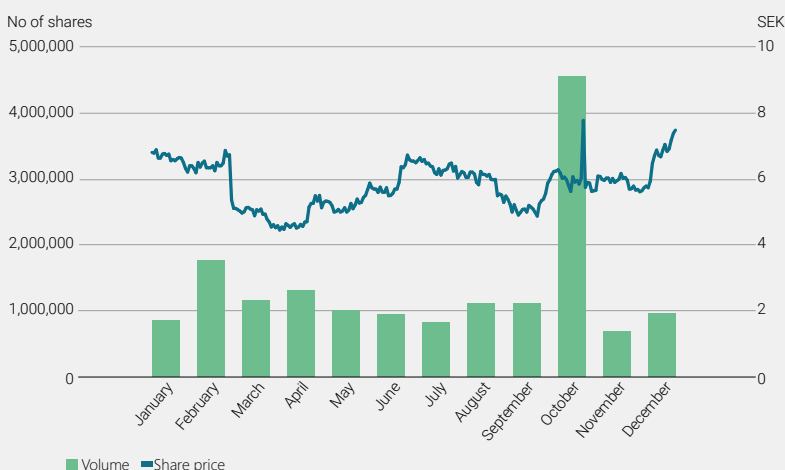
Financing

In April 2019, Heliospectra issued new shares in the amount of SEK 52.7 million with preferential rights for existing shareholders. The terms of the share issue meant that 3 existing shares gave the right to subscribe for 1 new share at a price of SEK 4.50. The issue was covered 100 per cent by subscription and guarantee commitments from the company's biggest owners, the Weland Group and Midroc New Technology. Around 30 per cent of the proceeds are intended to strengthen the company's financial position, with the remaining capital to be used as follows: 40 per cent for strategic repositioning of the business model toward a greater proportion of recurring income aimed at expanding the company's addressable market and stabilising future cash flows. 20 per cent to promote the new business model through reference objects with strategic customers primarily within the food production sector, and 10 per cent for continued product development in vertical cultivation. The rights issue means that Heliospectra's share capital increased by SEK 1,170,386 through the issue of 11,703,858 shares. The subscription rate was 76 per cent, at which the underwriters subscribed to the remaining 24 per cent.

Following the rights issue, the Weland Group's equity interest amounted to 39 per cent and Midroc New Technology to 11.5 per cent.

In December 2019, the company issued new shares in the amount of SEK 51.5 million with preferential rights for existing shareholders. The terms of the share issue meant that 5 existing shares gave the right to subscribe for 1 new share at a price of SEK 5.50. The issue was covered by a 100 per cent subscription commitment from the company's major owners the Weland Group and Midroc New Technology, and a guarantee commitment from the Weland Group. Around 20 per cent of the proceeds are intended to strengthen the company's financial position, with the remaining capital to be used as follows: 40 per cent for continued development of the sales organisation, 20 per cent for inventory build-up and 20 per cent for continued product development in control & automation. The rights issue means that Heliospectra's share capital increased by SEK 936,309 through the issue of 9,363,086 shares. The subscription rate was 88 per cent, at which the underwriters subscribed to the remaining 12 per cent. Following the rights issue registered on 3 January 2020, the Weland

Share price trend during 2019 (the share, listed on Nasdaq First North Stockholm)



Group's equity interest amounted to 41.1 per cent, Adma Förvaltnings AB's to 12.6 per cent and Midroc New Technology's to 11.5 per cent.

Our largest owners

Weland Group

Weland became a Heliospectra shareholder back in 2008 and is represented on the Board by member Staffan Gunnarsson and deputy Jens Helgesson. Weland is a family-owned group whose companies are mainly located in southern Sverige.

Adma Förvaltning

Adma is a family-owned investment company located in Malmö who base their ownership role around active, long-term commitment. Adma became a major shareholder in 2018.

Midroc New Technology

Midroc is a group engaged in contract services, property development and investing. They became owners in 2011 and are represented on the Board by Chairman Andreas Gunnarsson and deputy Göran Linder.

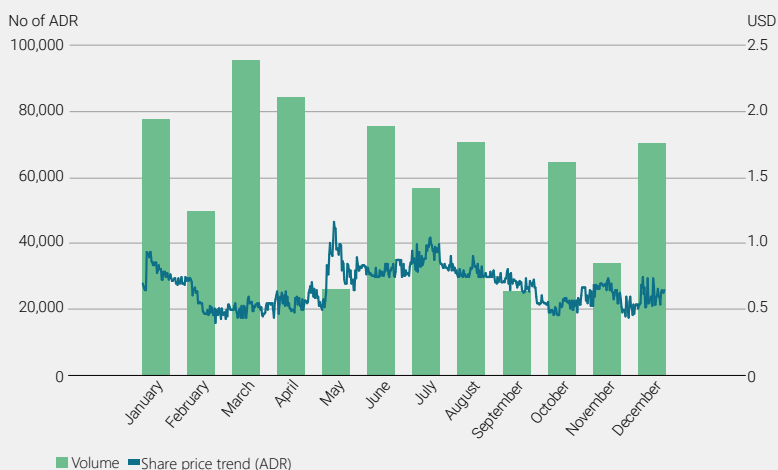
Ownership list excluding paid-up subscribed shares (BTA)

The largest shareholders 30/12/2019	Holding	Votes, %
Weland Värdepapper AB	10,511,914	22.5
Weland Stål AB	7,734,408	16.5
Adma Förvaltnings AB	5,810,000	12.4
Midroc New Technology AB	5,363,840	11.5
The Avanza Pension insurance company	1,803,248	3.9
The Bank of New York Mellon	1,330,325	2.8
Magowny Invest AB	454,252	1.0
PIBA AB	386,000	0.8
Nordnet Pensionsförsäkring AB	304,651	0.7
Chrilotte AB	260,300	0.6
Other shareholders	12,856,496	27.5
Total	46,815,434	100.0

Breakdown of shareholdings

Holding	Number of shareholders
1–500	3,203
501–1,000	858
1,001–5,000	1,339
5,001–10,000	232
10,001–15,000	71
15,001–20,000	35
20,001–	99

Share price trend during 2019 (ADR, listed on the exchange in the USA)



The Board



Andreas Gunnarsson
Chairman of the Board since 2011
Born 1974
Andreas studied at Jönköping International Business School and has significant experience in the start-up and operation of growth companies in the technology sector. He is Portfolio Director in Midroc New Technology AB and is a member of several boards in Midroc's portfolio companies.
Holding: 30,624 shares



Anders Ludvigson
Member since 2007
Born 1970
Anders has an MSc in Engineering and industry experience as a partner and Deputy CEO of Ludvig Svensson AB, one of the world's biggest manufacturers of climate screens for greenhouses.
Holding: 0 shares



Martin Skoglund
Member since 2006
Born 1966
Martin has a MSc in Business and Economics and is one of Heliospectra's founders. He is also a founder of the property company Wood & Hill Investment AB and a co-founder of Chalmers Innovation.
Holding: 99,672 shares via Wood & Hill Investment AB



Staffan Hillberg
Member since 2017.
Born 1964
Staffan has an MSc in Engineering and an MBA and was CEO for Heliospectra between 2010–2017. He is currently a partner in the property company Wood & Hill Investment.
Holding: 16,666 shares privately and 99,672 shares via Wood & Hill



Staffan Gunnarsson
Member since 2017
Born 1947
Staffan has significant experience of establishing and running leading companies. He holds several executive positions in the Weland Group, including CEO and board member of Weland Stål and Weland Fastigheter.
Holding: 26,666 shares



Göran Linder
Deputy since 2011
Born 1962
Göran has an MSc in Engineering and extensive experience in commerce and business development. He is CEO of Midroc New Technology, Midroc Invest and Midroc Finans.
Holding: 0 shares



Jens Helgesson
Deputy since 2018
Born 1966
Since 1989, Jens has held leading positions in the Weland Group. He is currently purchasing and property manager at Weland Stål.
Holding: 0 shares



Management



Ali Ahmadian
President & CEO since 2017
Born 1976

Ali has an MSc in Engineering and more than 20 years' experience of company management. He joined us from Tetra Pak where he was Vice President for Asia and the Pacific Ocean region and part of global group management. Ali lives in Gothenburg.
Holding: 22,666 shares and 300,000 stock options



Hans Naess
CFO since 2019
Born 1963

Hans has a MSc in Business and economics and more than 30 years' experience as an auditor, CFO and finance manager. He lives in Gothenburg and joined us from Volvo Bussar where he was Finance Director, City Mobility.
Holding: 25,000 shares and 100,000 stock options



Scott Thornton
Vice President of Sales and GM of North America since 2020
Born 1975

Scott has a degree from Concordia University in Montreal, Canada. He has more than 20 years' experience from commercial leadership, both in North America and the rest of the world. Scott joined us from the role as Sales Director at PBC. Scott lives in Montreal, Canada.
Holding: 0 shares and 0 stock options



Karin Dankis
Director of Product Management and Engineering since 2016
Born 1989

Karin has an MSc in Engineering with a focus on product development and has held several positions within Heliospectra, including Product Manager and interim Marketing Manager. Karin lives in Gothenburg.
Holding: 0 shares and 35,000 stock options



Peter Emanuelsson
Vice President of Supply Chain since 2016
Born 1965

Peter has an MSc in Science Automation and more than 20 years' experience from international trade, project management and strategic purchasing. He lives in Gothenburg.
Holding: 0 shares and 35,000 stock options



Hanna Rüdell
Vice President of Technical Services since 2018
Born 1976

Hanna has an MSc in Engineering and 18 years' experience in B2B business development in the international food industry. She joins us from a senior executive position with Micvac. Hanna lives in Gothenburg.
Holding: 0 shares and 35,000 stock options



Sarah Basiri
Vice President of Marketing since 2020
Born 1982

Sarah has a bachelor's degree from York University in Toronto, Canada. She joins us from her position as head of marketing in the Mezzanine Group. Prior to that, she has had a number of executive positions in B2B companies around North America. Sarah lives in New York, USA.
Holding: 0 shares and 0 stock options

Director's report

Operations

Heliospectra AB (publ) is the global leader in intelligent lighting technology, light control systems and related services for greenhouse and controlled plant growth environments. With the vision to make commercial crop production more connected and resource-efficient, Heliospectra integrates customised LED spectral strategies with real-time response and artificial intelligence to create predictable, reliable business forecasts and harvest results. Heliospectra was founded in 2006, and is committed to helping growers and commercial producers across six continents consistently increase yields and produce crops that look good, have high nutritional value, standardised medicinal quality and longer shelf life, harvest after harvest. Heliospectra has received much recognition and many international awards.

The share and ownership structure

The Heliospectra share has been listed on the NASDAQ First North Stockholm since 18 June 2014. In October 2014, trading in the Heliospectra share also began in the United States through an ADR programme. The main owners of the company are the Weland Group and Midroc New Technology AB. As of 31 December 2019, Heliospectra's share capital amounted to SEK 5,617,852 and comprised 56,178,520 shares with a quota value of SEK 0.10.

Significant events during the year

First quarter (January–March)

- Heliospectra's helioCORE™ control system was awarded a 2019 AE50 honour by the American Society of Agricultural and Biological Engineers.
- Heliospectra's technical service offering is brought under the helioCARE™ brand.
- A European medical research facility invests in Heliospectra's controllable LED lighting solutions. The research company is expanding its greenhouse production and has placed an order for Heliospectra's controllable ELIXIA LED lighting solution. The order is worth SEK 2.0 million (EUR 189,000).
- Heliospectra AB's s year-end report was published 22 February.
- Heliospectra carries out a rights issue and raises a bridging loan from principal owners. The company's Board proposes a new share issue of approx SEK 52.7 million with preferential rights for existing shareholders. The terms of the share issue mean that 3 existing shares give the right to subscribe to new shares at a price of SEK 4.50. The issue was covered 100 per cent by subscription and guarantee commitments from the company's biggest owners, the Weland Group and Midroc.
- Notice to attend an extraordinary shareholders' meeting in Heliospectra AB was issued on 22 February.
- Extraordinary shareholders' meeting was held 12 March 2019 at the Hotel Riverton on Stora Badhusgatan 26, SE 411 21 in Gothenburg. A resolution was passed to carry out a new share issue and establish a new incentive programme through the issue of

share warrants for key personnel in the company and persons in executive positions.

- Hans Naess was appointed new CFO for Heliospectra AB. Hans has acted as interim CFO since 24 September 2018 and took up his post as CFO as of 1 March 2019.
- Publication of Heliospectra's prospectus regarding the rights issue. On 19 March, the company published its prospectus regarding the rights issue announced on 22 February 2019.
- Heliospectra AB expands its presence in North America by opening a new subsidiary (Heliospectra Canada Inc.) in Toronto, Canada. The company is also continuing its expansion by hiring key personnel, expanding its American and Canadian sales teams and building up a team of cultivation experts with a focus on commercial food producers and licensed commercial cannabis growers in the USA and Canada.
- Ljusgård AB continues its expansion with the new investment in Heliospectra's innovative LED lighting solutions with a further order for Heliospectra's controllable ELIXIA LED lighting solution worth SEK 5.7 million (USD 611,450).

Second quarter (April–June)

- Heliospectra AB publishes the outcome of its rights issue. The subscription period for the rights issue in Heliospectra AB (publ) ended 3 April 2019 and in all showed that the issue had a subscription rate of just over 76 per cent. Subscriptions through the exercise of subscription rights corresponded to around 72 per cent, and subscriptions without subscription rights corresponded to approx 4 per cent of the shares offered. The outstanding shares, corresponding to around 24 per cent of the issue, were allocated to the guarantors, who under an agreement with the company had undertaken to subscribe to shares in the issue in relation to commitments made. The rights issue provided the company with approximately MSEK 52.7 million before issue expenses.
- Heliospectra published its supplementary prospectus regarding the Heliospectra rights issue. The supplementary prospectus was approved and registered by the Swedish Financial Supervisory Authority on 19 March 2019.
- Heliospectra AB is sponsoring and exhibiting at MJBizDaily's Cannabis Symposium in Copenhagen, Denmark on Monday 6 May.
- Share warrants in Heliospectra's incentive programme transferred to senior executive and key personnel.
- Heliospectra introduces MITRA, a new modular LED lighting solution for customised installations. MITRA's simple, streamlined design delivers high intensity light with an output of up to 2.9 µmol/J. MITRA was specially designed for plants such as cannabis and tomatoes that require intense light.
- SOG D00 automates its lighting environment with Heliospectra's intelligent ELIXIA LED lighting solutions and the helio-CORE™

control system. SOG DOO also added the helioCARE™ technical service package to its purchase to take advantage of Heliospectra's expertise in lighting, installations and plants. The order was worth SEK 2.8 million (EUR 260,000).

- Heliospectra's CEO Ali Ahmadian talks on the theme "Vertical Farming 2.0: How light influences the future of food" at AVF's forum for indoor cultivation during the Urban Future Global Conference in Oslo 22–24 May.
- Notice to attend the annual general meeting in Heliospectra AB was issued on 27 May.
- Heliospectra expands its intelligent LED lighting solutions portfolio with a new 600W ELIXIA as the industrial standard in greenhouses and indoor cultivations. The new lamp is suitable for major industrial installations and can handle up to 480 VAC input voltage.
- Heliospectra's AGM was held on 27 June in the Centralhuset Conference office at Nils Ericsonplatsen 4 in Gothenburg.

Third quarter (July–September)

- Västra Hamnen Corporate Finance begins monitoring Heliospectra AB.
- Heliospectra continues its expansion by establishing a new subsidiary, Heliospectra Japan Co., Ltd., and opening a new office in Tokyo, Japan, as of July. Heliospectra has appointed Yasuhiro Suzuki as General Manager.
- Heliospectra receives a major order from John Innes Centre in England for Heliospectra's fully controllable ELIXIA LED lighting solutions. The order was worth SEK 2.4 million (GBP 200,000).

Fourth quarter (October–December)

- Heliospectra supplies Eco Canadian Organic inc. with LED spectrum control worth SEK 2 million (CAD 277,000) for high-quality cannabis production.
- Heliospectra becomes a collaborative partner with Nectar Farms by supplying MITRA LED lighting solutions for large-scale greenhouse installation in Australia. Order value SEK 72 million.
- Heliospectra publishes its interim report for January–September 2019.
- Bridge Farm Group chooses Heliospectra's MITRA platform for the greenhouse cultivation of herbs and plants. Order value SEK 12 million.
- Communiqué from Heliospectra AB (publ) regarding its extraordinary shareholders' meeting.
- The company issued new shares in the amount of SEK 51.5 million with preferential rights for existing shareholders.
- Publication of Heliospectra's prospectus regarding the rights issue.
- Heliospectra AB (publ) publishes the outcome of its rights issue.

- Davis Electric delivers Heliospectra's ELIXIA LED lighting solutions and the helioCORE™ control system to a university in the USA for greenhouse research. Order value SEK 3 million.
- Rothamsted Research chooses Heliospectra's LED lighting solution for growth chambers with controlled environments. Order value SEK 1.9 million.

Financial trends

Sales and financial performance

Net turnover totalled SEK 25,530 (45,370) thousand. The operating loss totalled SEK –51,545 (–33,251) thousand, representing a negative operating margin (neg). The loss after tax was SEK –51,677 thousand (–33,303) or SEK –1.20 (–0.95) per share before dilution and SEK –1.17 (–0.93) after dilution.

Financial position

Operating cash flow was SEK 47,560 (–25,588) thousand. Total cash flow was SEK 43,079 (–29,468) thousand. At the end of the period, the Group's cash and cash equivalents amounted to SEK 54,243 thousand (11,165).

As of 31 December 2019, the equity assets ratio was 65 per cent (38).

Investments

Investments during the year totalled SEK 3,881 thousand (3,280). The investments can be divided into SEK 2,648 thousand (2,639) for intangible assets and SEK 1,233 thousand (641) for tangible assets. The investments in intangible assets refer to capitalised R&D expenses and patents. The investments in materials concern office equipment.

Employees

At year-end, the number of employees totalled 35 (30).

Significant events since year-end

- Heliospectra's helioCORE™ control system is awarded a 2019 AE50 honour by the American Society of Agricultural and Biological Engineers in the category "Unique innovations in product or system technology".
- Heliospectra's service offering is brought under the helioCARE™ brand.
- A leading European research facility continues to invest in Heliospectra's intelligent LED lighting solutions. The research company is expanding its greenhouse production and has placed an order for Heliospectra's fully adjustable ELIXIA LED lighting solution. The new order is worth SEK 2.0 million (EUR 189,000).
- In April 2019, Heliospectra issued new shares in the amount of SEK 52.7 million with preferential rights for existing shareholders. The terms of the share issue meant that 3 existing shares gave the right to subscribe for 1 new share at a price of SEK 4.50. The issue was covered 100 per cent by subscription and guarantee commitments from the company's biggest owners, the Weland Group and Midroc New Technology. The rights issue means that Heliospectra's share capital increased by SEK 1,170,386 through

the issue of 11,703,858 shares. The subscription rate was 76 per cent, at which the underwriters subscribed to the remaining 24 per cent. Following the rights issue, the Weland Group's equity interest amounted to 39 per cent and Midroc New Technology's to 11.5 per cent.

- On 8 May Heliospectra announces the launch of the new MITRA series, the market's first true modular LED lighting solution. MITRA was specially designed for plans such as cannabis and tomatoes that require intense light. The initial linear and square modules can be simply combined and customised to suit other plant types and many different cultivation environments.

Risks

Components, component prices and supplier dependency

The company is especially dependent on certain components for the production of its products. Therefore, the company's production and position can be affected by price fluctuations for such components. If rising component prices cannot be covered by higher prices for the company's products, the company's operations, financial position and earnings can be affected negatively. The company currently has only one single main supplier. The supplier is replaceable, but should it suffer capacity restrictions, delivery delays, industrial action or other factors that affect its operation, there is a great risk that Heliospectra's operations, financial position and earnings would also be affected negatively.

The company assesses the level of the above-mentioned risk as: **Intermediate**

Extent: Heliospectra's expenses for the components it is especially dependent on amounted to approx SEK 15 million for the period 1 January 2019 – 31 December 2019. Should the price of such components rise by 5 per cent, and given similar circumstances in general, it would entail an expense increase of SEK 750,000.

Technical development

Heliospectra carries out research and development into how plants are affected by light and into the types of decipherable signals emitted by plants. The findings from such investigations and development efforts can be unpredictable and undesirable, and therefore the company's forecast expenses and revenues related to such investigations and development efforts are associated with great uncertainty. Unforeseen outcomes may also lead to the reassessment of concepts and development, which means supplementary investigations and development efforts may be necessary at significant expense or that the investigations and development efforts cease completely. This can in turn cause delays to market launches or their complete failure to take place, which can occur if e.g. regulators or other decision-makers consider that the company's products do not meet set standards.

The company assesses the level of the above-mentioned risk as: **Intermediate**

Extent: Should the company's technical investigations and the development of its products not turn out as anticipated, (i) the company's revenues may fail to appear completely due to failed commercialisation, or (ii) the company's product development expenditures increase significantly for the purpose of developing a fully commercialised product.

Regulatory decisions and complex, changeable regulatory requirements

The marketing of products based on the company's technology may require the company, its collaborative partners and/or suppliers, to obtain relevant permits from regulators. There is a risk that such permits are not obtained, or that the permit does not have that the scope the company anticipated. The permit application process can also be intensive in terms of time and capital, which may delay the market launch of products based on the company's technology. Concerning the permit application process, there is a risk of changes to legislation or other regulations in markets where the company's technology is used, such as regulations and legislation regarding the cultivation of medical marijuana and certain types of tobacco in parts of the USA. The demand for Heliospectra's products, and thus the security of its future revenues, is therefore largely dependent on the development of various regulatory requirements.

The company assesses the level of the above-mentioned risk as **Low**

Extent: Currently, the company's revenues attributable to operations that pursue the cultivation of medical marijuana in the USA constitute around 50 per cent of the company's total revenues. A change in regulations could mean that revenues from this market drop to zero.

Heliospectra's intellectual property rights, know-how and confidentiality

Heliospectra's future success will to some extent be dependent on its ability to protect its intellectual property rights, chiefly patent protection for the company's inventions and products in the USA, Canada, the EU, Asia and other countries. The conditions for patenting inventions within the field of life technology and intelligent lighting systems is generally difficult to assess and involves complex judicial and scientific issues. There is a risk that Heliospectra cannot obtain patents for its technology. Moreover, patents have a limited lifetime. Also, the scope of protection each patent enjoys may differ from country to country.

There is a risk that existing and any future patent portfolios and other intellectual property rights held by the company will not constitute adequate commercial protection. The technologies Heliospectra uses in its research or includes in the products it develops and intends to commercialise, may infringe patents owned or controlled by others. Third parties may also infringe patents that are owned or controlled by Heliospectra. Furthermore, third parties may have applied for patents that include the same field (lighting technology and intelligent lighting systems) or the technology Heliospectra uses. If Heliospectra is forced to take civil action related to its patents or technology, the time and expense involved for such action can be significant, and the company may lose such actions, which could mean that the protection for the company's technology ceases to apply or that the technology is considered to infringe upon the rights of others. Actions lost by Heliospectra may also involve its having to pay significant damages.

Heliospectra is also dependent on its proprietary software, know-how and trade secrets. The company seeks to protect these values, inter alia through confidentiality agreements with employees, consultants and collaborative partners. However, it is impossible to completely protect the company against the unauthorised

dissemination of information, which entails a risk that competitors may become informed of and exploit software, know-how and trade secrets developed by Heliospectra. Furthermore, the dissemination of trade secrets may affect the company's ability to be granted patents for its inventions or even exclude the possibility of being granted a patent.

The company assesses the level of the above-mentioned risk as: Intermediate

Extent: Because Heliospectra's operations are to a significant extent based on the company's intellectual property rights, the incorporation of the above risks could entail extensive loss of revenue as well as cost increases.

Additional financing needs

Heliospectra has reported operating losses since the business was started and cash flow is expected to remain negative until a revenue surplus is generated. Two new share issues were carried out in 2019, but this does not preclude the possible necessity of further capital contributions in the future.

The company assesses the level of the above-mentioned risk as: Intermediate

Extent: If a future requirement for capital occurs, it is not certain that capital can be obtained and there is a risk that terms become unfavourable.

International business and exchange rate changes

Heliospectra is a Swedish public limited company whose earnings and financial position are reported in Swedish kronor. The company's purchases mostly take place in Swedish kronor, euros and the US dollar and are thus exposed to fluctuations in these currencies. A major part of the future market is located abroad and the majority of potential sales may take place in other currencies. Such sales could expose the company to currency fluctuations.

The company assesses the level of the above-mentioned risk as: Intermediate

Extent: If the company sells products worth USD 5 million, its revenues will be reduced by approximately SEK 5 million if the Swedish krona weakens by 10 per cent against the US dollar (in terms of the current exchange rate).

Corporate governance

Heliospectra AB is a Swedish public company listed on Nasdaq First North Growth Market, Stockholm since June 18, 2014. The company is a public limited company and is regulated by Swedish law, mainly by the Swedish Companies Act and the Swedish Annual Accounts Act. Additional rules and recommendations regarding corporate governance are found principally in the Stock Exchange's regulations, the Swedish Corporate Governance Code (the Code) as well as in the statements of the Swedish Securities Council. In addition to legislation and the rules and recommendations, the articles of association form the basis for the governance of the company's operations. At present, the Code need not be applied by companies whose shares are listed on First North Growth Market. While it is not mandatory for Heliospectra, the company is committed to complying with the Code's principles.

Annual General Meeting

The Annual General Meeting (AGM) must be held no later than six months from the end of the financial year. Shareholders who are registered in the shares ledger and who have notified their participation in time have the right to take part in the meeting. Heliospectra's 2019 AGM took place on 27 June in Gothenburg. The AGM passed resolutions on the approval of financial statements, the election of Board members and auditors, remunerations to Board members and auditors, guidelines for remunerations to the company's senior executives and guidelines for appointing the nomination committee.

Nomination committee

The nomination committee is tasked with preparing proposals for the following matters for submission to the AGM for resolution: Proposals for Chairman of the meeting; for Board members and Board Chairman, remunerations for Board members for committee work; proposals to auditors, fees for the company's auditors and proposals for the composition of the nomination committee. The 2019 AGM passed a resolution on guidelines for the establishment of a nomination committee. Each of the company's three biggest shareholders in terms of voting rights as of 30 August 2019 is entitled to appoint one member of the committee. None of the three people appointed may be a member of the Board. Furthermore, the nomination committee must comprise one Board member appointed by the Board. This person must be the convener. Should one of the two members of the nomination committee appointed by the two largest shareholders in terms of votes resign the assignment prematurely, the shareholder who appointed the resigning member has the right to appoint a new member. Should one of the two largest shareholders in terms of votes sell all, as opposed to only part of, its shares in the company before the nomination committee has completed its assignment, then in place of this shareholder, the third largest shareholder in terms of votes must appoint a new member. The nomination committee's mandate runs until a new nomination committee is appointed. No compensation will be paid to nomination committee members, but they have the right to reimbursement for reasonable and necessary expenses incurred for nomination committee work.

The nomination committee for the 2020 AGM consists of:

- Göran Larsson, appointed by the Weland Group (nomination committee chairman).
- David Sundin, appointed by Midroc New Technology AB.
- Andreas Gunnarsson, convener, appointed by Heliospectra AB.

Auditor

The company's auditor is Mikael Glimstedt, practising at Frejs Revisorer AB in Gothenburg, authorised public accountant and member of FAR.

The Board

Board composition

According to the articles of association, the Board of Heliospectra AB must comprise no fewer than three and no more than nine members, with a maximum of five deputies. Board members are appointed for a maximum of one year at a time. In 2019, Heliospectra's Board comprised five ordinary members and one deputy (two deputies from 27 June). Andreas Gunnarsson was Chairman.

Of the regular Board members, five are independent of the company and company management and two are independent of the company's major shareholders.

The work of the Board

The Board oversees the work of the CEO and is responsible for ensuring that the organisation, management and guidelines for the company are properly set up. The Board is also responsible for ensuring the company's compliance with laws, regulations and internal guidelines. Furthermore, the Board is responsible for developing and monitoring the company's strategies and major investments, and for approving the budget and annual accounts. In 2018, the Board held five ordinary meetings and five extraordinary meetings. The work of the Board follows the rules of procedure adopted at the statutory meeting. Each ordinary Board meeting discusses the minutes from the previous meeting, business developments since the previous meeting and the company's financial position and its financial performance. The Board receives written information on an ongoing basis concerning the business and external issues that are important for the company. In 2019, the Board paid particular attention to financing, strategy and the organisation.

Rules of procedure

In accordance with the Swedish Companies Act, the Board has adopted written rules of procedure for its work and written instructions on reporting to the Board. The rules of procedure and reporting instructions are evaluated, updated where necessary and approved annually. Any allocation of responsibilities among Board members must be described in the rules of procedure. The Board holds ordinary meetings that follow a programme established by the rules of procedure that includes fixed decision points as well as other items as necessary. The Board holds extraordinary meetings as necessary and also on request by a Board member or the CEO. The reporting instructions make clear when and how information that is necessary for the Board's ongoing assessment of the company's and the Group's financial situation must be collected and reported to the Board. The reporting instructions provide the Board with data for the follow-up of plans, budgets etc. According to the current rules of procedure, the Board must, after the statutory Board meeting following the AGM, meet on at least six scheduled occasions during the fiscal year.

Processes for evaluating Board performance

The Chairman is responsible for the evaluation of the work of the Board. The evaluation is performed annually. Among the items examined are the Board's working methods, the number of meetings and their effectiveness, the time for preparation, available specific expertise and opportunities for individual Board members to influence the work of the Board. The findings are taken into account in the nomination process for the subsequent year's AGM.

CEO and management

Heliospectra's Group management consists of the CEO, CFO, VP Supply Chain, VP Technical Services, Global Marketing Director, Director of Product Management and Engineering, and the General Manager, Japan. The CEO is responsible for day-to-day operations, preparing and implementing strategies, addressing organisational issues and following financial developments. Measures that are of an unusual nature or of great importance with regard to the scope and nature of the company's business, fall outside of day-to-day management and must therefore be prepared and presented to the Board for resolution. The work and role of the CEO

and the division of responsibilities between the Board and the CEO are described in more detail in a written instruction approved by the Board (known as the CEO Instructions). Together with the Board Chairman, the CEO draws up a notice to attend and a proposal for the agenda, prepares necessary decision data and participates in Board meetings.

Remunerations to senior executives

The Board as a whole has chosen to take responsibility for remuneration issues in the company.

Salary and other benefits

Remunerations to senior executives must comprise a fixed salary and a pension. The fixed salary is usually reviewed once per calendar year. No variable salaries are paid. In addition, senior executives have the right to customary non-monetary benefits such as occupational health services. Other benefits may be offered in individual cases.

Pension

Senior executives should be offered pension terms that include a defined contributions scheme with premiums based on the full basic salary. Pension provisions are individual and must be in relation to basic salary.

Severance benefits

The period of notice may not exceed one year if the termination takes place on the part of the company, or no more than six months if the termination takes place on the part of the senior executive. In case of termination on the part of the company, severance pay may also be paid in an amount equal to no more than six months' salary. The Board has the right to deviate from the guidelines if there are particular reasons for this in individual cases. Salaries and remunerations to the CEO and other senior executives in 2019 are described in Note 6 on page 44.

Remunerations to the Board

In 2019, it was resolved that the fee to the Board total SEK 558,000. The 2019 AGM resolved that the remuneration to the Board Chairman will be paid as 4 × price base amounts equivalent to SEK 186,000 per year, and to the other Board members as 2 × price base amounts, equivalent to SEK 93,000 per Board member per year.

Auditors' fees

Compensation for Heliospectra's auditors is paid at approved hourly rates. In 2019, fees paid to Frey's Revisorer AB were in the amount of SEK 186,000.

Internal controls

The Board must make sure the company has good internal control and formalised procedures ensuring that the policies established for financial reporting and internal control are complied with and that the company's financial reporting is set up in accordance with the law, applicable accounting standards and other requirements resulting from the company's status as listed. The company's internal control structure is based on controlling the allocation of responsibilities between the Board and the CEO. The CEO must, through the good offices of the CFO, ensure that the members of the Board are provided with special financial reports on a monthly basis along with any other information necessary for tracking the company's financial situation.

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Change in equity

Amount in SEK thousand	Share capital	Other capital contributed	Other equity incl. profit for the year
THE GROUP			
Opening balance 01/01/2019	3,511	239,575	-227,879
Loss for the year			-51,677
Translation difference			68
New share issue	2,107	94,982	
Total equity 31/12/2019	5,618	334,557	-279,488

	Share capital	Fund for dev. expenditures	Share premium reserve	Accumulated profit or loss
PARENT COMPANY				
Opening balance 01/01/2019	3,511	5,232		6,073
Loss for the year				-52,447
Change for the year		1,739		-1,739
New share issue	2,107		102,057	
Issue costs			-7,075	
Total equity 31/12/2019	5,618	6,971	94,982	-46,113

Proposed appropriation of earnings for the year

The Board and CEO propose that non-restricted equity

Accumulated profit or loss	4,333,716
Share premium reserve	94,982,142
Loss for the year	-52,446,559
Total	46,869,299
be appropriated as follows	
Carried forward	46,869,299
Total	46,869,299

With regard to the company's financial position and performance in other respects, refer to the following income statement and balance sheet, as well as the accompanying notes.

Consolidated income statement

Amount in SEK thousand	Note	2019	2018
Operating income	2		
Net turnover		25,530	45,370
Other operating income		1,309	615
Total operating income		26,839	45,985
Operating expenses	2		
Commodities		-14,554	-30,057
Other external costs	3-4	-25,627	-22,480
Staffing costs	5-6	-33,873	-23,854
Depreciations of tangible and amortisation of intangible assets	7	-3,833	-2,725
Other operating expenses		-497	-120
Operating profit/loss		-51,545	-33,251
Loss from financial items			
Interest expenses and similar profit/loss items	8	-132	-52
Loss before tax		-51,677	-33,303
Tax		0	0
Loss for the year		-51,677	-33,303
Of which attributable to:			
Parent company's shareholders		-51,677	-33,303
Minority interest		0	0

Consolidated balance sheet

Amount in SEK thousand	Note	31/12/2019	31/12/2018
ASSETS	1		
Fixed assets			
Intangible assets			
Balanced expenditures for development and similar work brought forward	9	14,548	15,316
Total intangible assets		14,548	15,316
Tangible assets			
Equipment, tools, fixtures and fittings	10	2,125	1,309
Total tangible assets		2,125	1,309
TOTAL ASSETS		16,673	16,625
Current assets			
Stock held			
Finished products and goods for sale		15,931	5,499
Total inventories		15,931	5,499
Current receivables			
Accounts receivable		1,683	3,644
Current tax assets		138	78
Other receivables		3,296	1,720
Prepaid expenses and accrued income	12	2,033	1,427
Total current receivables		7,150	6,869
Cash and bank		54,243	11,165
TOTAL CURRENT ASSETS		77,324	23,533
TOTAL ASSETS		93,997	40,158

Amount in SEK thousand	Note	31/12/2019	31/12/2018
EQUITY AND LIABILITIES			
Equity			
Share capital	13	5,618	3,511
Other capital contributed		334,557	239,575
Total equity		-227,811	-194,576
Loss for the year		-51,677	-33,303
Equity attributable to parent company shareholders		60,687	15,207
Minority interest		0	0
Total equity		60,687	15,207
Provisions			
Other provisions		0	550
Total provisions		0	550
Long-term liabilities			
Other liabilities	15, 17	9,200	9,800
Total non-current liabilities		9,200	9,800
Current liabilities			
Advance payments from customers		12,387	3,342
Trade accounts payable		6,084	6,035
Other liabilities	16	627	1,837
Accrued expenses and deferred income	17	5,012	3,387
Total current liabilities		24,110	14,601
TOTAL EQUITY AND LIABILITIES		93,997	40,158

Consolidated statement of cash flows

Amount in SEK thousand	2019	2018
OPERATING ACTIVITIES		
Earnings after financial items	-51,677	-33,303
Adjustment for items not included in cash flow		
Depreciations and impairment charges re assets	3,833	2,725
Other items not included in cash flow	68	
Shareholder contributions	97,089	219
Cash flow from operating activities before changes in working capital	49,313	-30,359
Cash flow from changes in working capital		
Changes in inventory	-10,432	2,090
Change in operating receivables	-281	3,152
Change in operating liabilities	8,959	-471
Cash flow from operating activities	47,559	-25,588
INVESTING ACTIVITIES		
Activation of capitalised expenditures	-2,647	-2,639
Acquisition of equipment, tools, fixtures and fittings	-1,234	-641
Cash flow from investing activities	-3,881	-3,280
FINANCING ACTIVITIES		
Change in non-current liabilities	-600	-600
Cash flow from financing activities	-600	-600
Cash flow for the year (cash and bank)	43,078	-29,468
Cash and cash equivalents at beginning of year	11,165	40,633
CASH AND CASH EQUIVALENTS AT YEAR-END	54,243	11,165

Parent company income statement

Amount in SEK thousand	Note	2019	2018
Operating income	2		
Net turnover		25,530	45,370
Other operating income		1,017	615
Total operating income		26,547	45,985
Operating expenses	2		
Commodities		-14,554	-30,057
Other external costs	3-4	-26,397	-28,875
Staffing costs	5-6	-33,873	-17,649
Depreciations of tangible and amortisation of intangible assets	7	-3,833	-2,725
Other operating expenses		-496	-120
Operating loss		-52,606	-33,441
Loss from financial items			
Interest expenses and similar profit/loss items	8	-133	-52
Earnings after financial items		-52,739	-33,493
Appropriations			
Group contributions		292	0
Loss before tax		-52,447	-33,493
Tax		0	0
Loss for the year		-52,447	-33,493

Parent company balance sheet

Amount in SEK thousand	Note	31/12/2019	31/12/2018
ASSETS	1		
Fixed assets			
Intangible assets			
Balanced expenditures for development and similar work brought forward	9	14,548	15,316
Total intangible assets		14,548	15,316
Tangible assets			
Equipment, tools, fixtures and fittings	10	2,119	1,309
Total tangible assets		2,119	1,309
Financial assets			
Participations in Group companies	11	127	82
Total financial assets		127	82
TOTAL ASSETS		16,794	16,707
Current assets			
Stock held			
Finished products and goods for sale		15,931	5,499
Total inventories		15,931	5,499
Current receivables			
Accounts receivable		1,683	3,644
Receivables from Group companies		2,224	2,180
Other receivables		2,990	1,772
Prepaid expenses and accrued income	12	1,709	1,427
Total current receivables		8,606	9,023
Cash and bank		52,406	10,186
TOTAL CURRENT ASSETS		76,943	24,708
TOTAL ASSETS		93,737	41,415

Amount in SEK thousand	Note	31/12/2019	31/12/2018
EQUITY AND LIABILITIES			
Equity			
Restricted equity			
Share capital	13	5,618	3,511
Fund for development expenditures		6,970	5,232
Total restricted equity		12,588	8,743
Non-restricted equity			
	14		
Accumulated profit or loss		4,335	39,566
Share premium reserve		94,982	0
Loss for the year		-52,447	-33,493
Total non-restricted equity		46,870	6,073
TOTAL EQUITY		59,458	14,816
Provisions			
Other provisions		0	550
Total provisions		0	550
Long-term liabilities			
	15, 17		
Other liabilities		9,200	9,800
Total non-current liabilities		9,200	9,800
Current liabilities			
Advance payments from customers		12,387	3,342
Trade accounts payable		6,084	7,683
Other liabilities	16	1,596	1,837
Accrued expenses and deferred income	17	5,012	3,387
Total current liabilities		25,079	16,249
TOTAL EQUITY AND LIABILITIES		93,737	41,415

Parent company statement of cash flows

Amount in SEK thousand	2019	2018
OPERATING ACTIVITIES		
Earnings after financial items	-52,447	-33,493
Adjustment for items not included in cash flow		
Depreciations and impairment charges re assets	3,833	2,725
Other items not included in cash flow		12
Shareholder contributions	97,089	
Cash flow from operating activities before changes in working capital	48,475	-30,756
Cash flow from changes in working capital		
Changes in inventory	-10,432	2,090
Change in operating receivables	417	2,819
Change in operating liabilities	8,280	1,178
Cash flow from operating activities	46,740	-24,669
INVESTING ACTIVITIES		
Activation of capitalised expenditures	-2,647	-2,639
Acquisition of equipment, tools, fixtures and fittings	-1,273	-641
Cash flow from investing activities	-3,920	3,280
FINANCING ACTIVITIES		
Change in non-current liabilities	-600	-600
Cash flow from financing activities	-600	-600
Cash flow for the year (cash and bank)	42,220	-28,549
Cash and cash equivalents at beginning of year	10,186	38,735
CASH AND CASH EQUIVALENTS AT YEAR-END	52,406	10,186

Notes

NOTE 1 Accounting policies

This annual report has been prepared in accordance with the Swedish Annual Accounts Act and the Swedish Accounting Standards Board's General Recommendations BFAR 2012:1 Annual Accounts and Consolidated Accounts (K3).

Accounting principles remain unchanged from the previous year.

Assets, provisions and liabilities have been appraised at cost unless otherwise specified below.

Consolidated accounts

Subsidiaries

Subsidiaries are companies in which the parent company directly or indirectly holds more than 50 per cent of the voting rights or in some other way has a controlling influence. Control exists when the parent company has a right to affect the financial and operating policies of a company in order to gain benefits from its activities. Business combinations are accounted for based on the unit principle. This means the acquisition analysis is prepared at the time the acquirer gains a controlling influence. From this date on, the acquirer and the acquired unit are regarded as a single accounting unit. Application of the unit principle also means that all assets (including goodwill) and liabilities, income and expenditures are included in their entirety even in the case of partially owned subsidiaries.

The cost of the subsidiary is calculated as the sum, on the acquisition date, of fair value for the assets purchased plus liabilities acquired and incurred, equity instruments issued, expenditures directly related to the business combination and any supplementary purchase sum. Fair value is determined in the acquisition analysis, with some exceptions, at the time when the identifiable assets, liabilities and minority interest are acquired. Minority interest is measured at fair value as of the acquisition date. The acquired company's income and expenditure, identifiable assets and liabilities, and any goodwill or negative goodwill, are included in the consolidated financial statements as of the date of acquisition.

Elimination of transactions between subsidiaries and associated companies

Intra-group receivables and liabilities, income and expenses, and unrealised gains or losses arising from transactions between associated companies are eliminated in their entirety.

Intangible and tangible assets

Intangible and tangible assets are reported at cost less accumulated depreciations and impairments. In addition to the purchase price, cost also includes expenditures that are directly attributable to the acquisition.

Balanced expenditures for development and similar work brought forward

Development costs calculated as the average cost in operations are balanced and accounted for per project (new products/projects). As sales per object commence, depreciation of capitalised expenditures begins. Depreciations continues throughout the object's sales period, however max 5 years.

In the case of any shutdown/closure of the object, the simultaneous impairment of the entire remaining balance for the object and expenses are reversed to the income statement.

Additional expenditures

Additional expenditures that meet the asset criterion are included in the asset's carrying amount.

Expenditures for day-to-day maintenance and repairs are reported as expenses as they arise.

Depreciations

Depreciations take place on a straight-line basis over the asset's estimated useful life as it reflects the expected pattern of consumption of the asset's future economic benefits. The depreciation is reported as an expense in the income statement.

The estimated residual value determined on the acquisition date at the then prevailing price level has been taken into account.

Useful life

Balanced expenditures for development and similar work brought forward	5 years
Equipment, tools, fixtures and fittings	5 years

Impairment charges – material and immaterial fixed assets and participations in Group companies

On each balance sheet day, calculations are made to find any indications that an asset's value is lower than its carrying amount. Given such an indication, the asset's recoverable value is calculated.

Recoverable value is the higher of fair value less selling expenses and value-in-use. When calculating value-in-use, the present value of future cash flows the asset is expected to give rise to in operating activities is calculated, as well as when it is divested or retired. The discount rates used is pretax and reflects the market-related assessment of the time value of money and the risks associated with the asset. Any former impairment loss is only reversed if the reasons forming the basis for the calculation of the recoverable value of the previous impairment have changed.

Foreign currency

Monetary items in foreign currency are translated to the closing day exchange rate. Non-monetary items are not translated but carried at the acquisition date exchange rate.

Exchange rate differences that arise when settling or translating monetary items are reported in the income statement as they arise.

Stock held

Inventory is taken up at the lower of cost or net realisable value, thus taking into account the risk of obsolescence. Cost is calculated according to the first-in, first-out principal. In addition to expenditures for the purchases, cost also includes expenditures for bringing the goods to their current place and condition.

continued note 1

NOTE 1 Accounting policies

Financial assets and liabilities

Financial assets and liabilities are reported according to chapter 11 (financial instruments measured at cost) in BFNAR 2012:1.

Reporting and removal from the balance sheet

A financial asset or financial liability is taken up in the balance sheet when the company becomes part of the instrument's contractual conditions. A financial asset is removed from the balance sheet when the contractual right to the cash flow from the asset has ceased or is settled. The same applies when the risks and benefits associated with possession are in all material respects transferred to the other party and the company no longer has control over the financial asset. A financial liability is removed from the balance sheet when the contractual obligation is fulfilled or has ceased.

Valuation of financial assets

Financial assets are measured at cost on initial recognition, including any transaction expenses directly attributable to the acquisition of the asset.

Accounts receivable and other receivables that constitute current assets are measured individually to the amounts that are anticipated to flow in.

Financial assets are measured at initial recognition at cost less any impairment charges and with additions for any revaluations.

Valuation of financial liabilities

Non-current financial liabilities are reported at amortised cost. Expenditures that are directly attributable to the raising of loans have corrected the loan's cost. Current liabilities are reported at cost.

Employee benefits

Employee post-employment benefits

Classification

Post-employment benefit plans are classified as defined contribution plans.

In defined contribution plans fixed fees are paid to another company, usually an insurance company, and the payee no longer has any obligation to the employee once the fee is paid. The size of the employee's post-employment benefits is dependent on the fees paid to the plan and the return on capital generated by the contributions.

Defined contribution plans

The charges for defined contribution plans are expensed. Unpaid fees are reported as liabilities.

Provisions

A provision is recognised in the balance sheet when the company has a legal or informal obligation resulting from a previous event and it is likely that an outflow of resources is required to settle the obligation and a reliable estimate of the amount can be made.

At initial recognition, provisions are measured at the best estimate of the amount required to settle the obligation on closing day. Provisions are reviewed on each closing day.

A provision is measured at the present value of the future payments necessary to settle the commitment.

Revenue

The inflow of economic benefits that the company has received or will receive for its own account is recognised as revenue. Revenue is recognised at the fair value of the consideration received or which will be received, less any discounts.

Sale of goods

When goods are sold, revenue is recognised when the following criteria are met:

- it is probable that the economic benefits associated with the transaction will flow to the company,
- the revenue can be calculated in a reliable way,
- the company has transferred the significant risks and benefits associated with ownership of the goods to the purchaser,
- the company no longer has a level of involvement in day-to-day management usually associated with ownership and nor does it exercise any real control over the goods sold, and
- the expenditures incurred or which can be anticipated to occur as a result of the transaction can be measured reliably.

NOTE 2 Group information

Purchasing and sales within the Group

Of the parent company's total purchases and sales measured in SEK, 20.4 % (11.4 %) of the purchases and 0 % (0 %) of sales concern other companies within the entire grouping to which the company belongs.

NOTE 3 Auditor's fees and compensation

	The Group		Parent Company	
	2019	2018	2019	2018
Audit assignment	97	116	97	116
Tax advice	0	0	0	0
Other services	89	9	89	9
Total	186	125	186	125

NOTE 4 Operational leasing

	The Group		Parent Company	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
Leases where the company is the lessee				
Future minimum lease charges in respect of non-cancellable operating leases				
Within 1 year	1,786	1,779	1,786	1,779
Between 1 and 5 years	6,818	6,759	6,818	6,759
Longer than 5 years	0	0	0	0
Total	8,604	8,538	8,604	8,538
The financial year's expensed leasing fees incl. rent	1,667	1,133	1,667	1,133

The company's most significant leases consist of rental agreements for premises.

NOTE 5 Employees and company management

	The Group		Parent Company	
	2019	2018	2019	2018
Average number of employees, total	35	30	35	24
Gender balance in senior management				
Board members			5	5
Of which men			5	5
CEO and company management	7	7	7	7
Of which men	4	4	4	4

NOTE 6 Salaries, other remunerations and social costs, including pension costs

	The Group		Parent Company	
	2019	2018	2019	2018
Pay and other remunerations				
Members of the Board and CEO	2,023	1,570	2,023	1,570
Other employees	20,048	15,605	14,327	10,324
Total salaries and benefits	22,071	17,175	16,350	11,894
Pension costs in respect of members of the Board and CEO	499	430	499	430
Pension costs relating to other	1,249	699	1,142	639
Other social costs	2,780	4,649	4,528	3,789
Total social costs	4,528	5,778	6,169	4,858
Obligations for pensions and similar benefits to Board members and the CEO	0	0	0	0

NOTE 7 Depreciation of tangible and amortisation of intangible assets

	The Group		Parent Company	
	2019	2018	2019	2018
Expenditures for development and similar work brought forward	3,416	2,256	3,416	2,256
Equipment, tools, fixtures and fittings	417	469	417	469
Total	3,833	2,725	3,833	2,725

NOTE 8 Interest expenses and similar profit/loss items

	The Group		Parent Company	
	2019	2018	2019	2018
Interest expenses, other	132	52	132	52
Total	132	52	132	52

NOTE 9 Balanced expenditures for development and similar work brought forward

	The Group		Parent Company	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
Opening balance acquisition value	32,662	30,023	32,662	30,023
Acquisitions	2,648	2,639	2,648	2,639
Closing accumulated acquisition values	35,310	32,662	35,310	32,662
Opening depreciations	-17,346	-15,089	-17,346	-15,089
Depreciations for the year	-3,416	-2,257	-3,416	-2,257
Closing accumulated depreciations	-20,762	-17,346	-20,762	-17,346
Closing carrying amount	14,548	15,316	14,548	15,316

NOTE 10 Equipment, tools, fixtures and fittings

	The Group		Parent Company	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
Opening balance acquisition value	3,249	5,782	3,325	5,858
Acquisitions	1,233	640	1,227	640
Disposal/retirements	0	-3,173	0	-3,173
Closing accumulated acquisition values	4,482	3,249	4,552	3,325
Opening depreciations	-1,940	-4,634	-2,016	-4,710
Disposal/retirements	0	3,162	0	3,162
Depreciations for the year	-417	-468	-417	-468
Closing accumulated depreciations	-2,357	-1,940	-2,433	-2,016
Closing carrying amount	2,125	1,309	2,119	1,309

NOTE 11 Shares and participations in Group companies

	Parent Company	
	31/12/2019	31/12/2018
Opening balance acquisition value	82	82
Acquisitions	45	0
Closing carrying amount	127	82

The company registration numbers and registered offices of subsidiaries are set out below

Company, Company Registration Number, Head office	Number of shares	Particip., %	Carrying amount
Heliospectra Personal AB, 556904-7243, Gothenburg	1,000	100	50
Heliospectra Inc, 5290422, USA	5,000,000	100	32
Heliospectra Canada inc., 003197932, Ontario	10	100	0
Heliospectra Japan Co., Ltd, Tokyo	1,000	100	45

Refers to the equity interest of capital, which also corresponds to the percentage of votes of the total number of shares.

NOTE 12 Prepaid expenses and accrued income

	The Group		Parent Company	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
Prepaid rent	403	380	403	380
Other items	1,630	1,047	1,306	1,047
Total	2,033	1,427	1,709	1,427

NOTE 13 Share capital

	Parent Company	
	31/12/2019	31/12/2018
Number of shares	56,178,520	35,111,576
Quota value	SEK 0.10	SEK 0.10

NOTE 14 Proposal for the allocation of the company's profit or loss

The Board and CEO propose that non-restricted equity in the amount of SEK 46,869,299, be appropriated as follows:

	Parent Company
	31/12/2019
Carried forward	46,869
Total	46,869

NOTE 15 Non-current liabilities

	The Group		Parent Company	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
With maturities longer than five years from closing date	9,000	9,000	9,000	9,000
Total	9,000	9,000	9,000	9,000

NOTE 16 Pledged assets

	The Group		Parent Company	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
Other pledged assets	6,050	6,050	6,050	6,050
Total pledged assets	6,050	6,050	6,050	6,050

NOTE 17 Accrued expenses and deferred income

	The Group		Parent Company	
	31/12/2019	31/12/2018	31/12/2019	31/12/2018
Salaries and holiday pay	2,234	1,683	2,234	1,683
Accrued social contributions	977	860	977	860
Other items	1,801	844	1,801	844
Total	5,012	3,387	5,012	3,387

Gothenburg 31 March 2020

Andreas Gunnarsson
Chairman of the Board

Ali Ahmadian
*CEO
and co-founder*

Martin Skoglund
Board member

Staffan Hillberg
*Board member
and co-founder*

Anders Ludvigson
Board member

Staffan Gunnarsson
Board member

Our auditor's report was submitted on 7 April 2020

Frejs Revisorer AB

Mikael Glimstedt
Authorised Public Accountant

Auditors' Report

To the annual general meeting of Heliospectra AB (publ) Corporate ID number 556695-2205

Report on the annual accounts and consolidated financial statements

Opinion

We have audited the annual accounts and consolidated financial statements of Heliospectra AB (publ) for the financial year 2019.

The company's annual accounts and consolidated financial statements are included in the printed version of this document on pages 26–47.

In our opinion the annual accounts and consolidated financial statements have been prepared in accordance with the Swedish Annual Accounts Act and in all material respects fairly present the parent company's and Group's financial position as of 2019-12-31 and their financial performance and cash flows for the year in accordance with the Swedish Annual Accounts Act. The administration report is consistent with the other sections of the annual accounts and the consolidated accounts.

We therefore recommend that the AGM adopt the income statement and balance sheet for the parent company and the Group.

Basis for our opinion

We have conducted the audit in accordance with International Standards on Auditing (ISA) and auditing standards generally accepted in Sweden. Our responsibility according to these standards is described in more detail in the section entitled Auditor's responsibility. We are independent of the parent company and the Group in accordance with professional ethics in Sweden and we have otherwise fulfilled our professional ethical responsibilities under these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate as a basis for our opinions.

Information other than financial statements and consolidated financial statements

The Board and the CEO are responsible for the other information on pages 1–25 in this document (but does not include the annual accounts, consolidated financial statements and our audit report related to these).

Our opinion in respect of the annual accounts and consolidated financial statements does not cover this information, and we make no substantiating statement concerning this other information.

In the context of our audit of the annual accounts and consolidated financial statements, it is our responsibility to read the information identified above and consider whether the information is materially inconsistent with the annual accounts and consolidated financial statements. In this review, we also take into account the knowledge we otherwise obtained during the audit as well as assesses whether the information otherwise seems to contain material misstatements.

If, based on the work that has been done with regard to this information, we conclude that the second information contains a material misstatement, we are obliged to report it. We have nothing to report in this regard.

Responsibilities of the Board and the Chief Executive Officer

The Board and CEO are responsible for ensuring the annual accounts and the consolidated financial statements are prepared and that they give a true and fair view in accordance with the Swedish Annual Accounts Act. The Board and the CEO are also responsible for the internal control they deem necessary for the preparation of annual accounts and consolidated financial statements that do not contain material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board and the CEO are responsible for assessing the ability of the company and the Group to continue operations. They inform, as appropriate, on the conditions that may affect the ability to continue operations and to make a going concern assumption. However, the going concern assumption does not apply if the Board and CEO intend to liquidate the company, cease operations or have no realistic alternative but to do so.

Auditor's responsibility

Our goal is to achieve a reasonable degree of certainty as to whether the annual accounts and consolidated financial statements as a whole do not contain any material misstatement, whether due to fraud or error, and to submit an audit report that contains our opinions. Reasonable assurance is a high degree of certainty, but there is no guarantee that an audit performed in accordance with ISA and other generally accepted auditing standards in Sweden will always detect a material misstatement, should such be present. Misstatements may occur due to fraud or error, and are considered to be material if they severally or jointly can be reasonably expected to affect the economic decisions that users make on the basis of the annual accounts and the consolidated financial statements.

As part of an audit under ISA, we use professional judgment and maintain a professionally skeptical attitude throughout the audit.

We also:

- identify and assess the risks of material misstatement in the annual accounts and consolidated financial statements, whether due to fraud or error; draw up and carry out audit procedures, inter alia on the basis of these risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinion. The risk of failing to detect a material misstatement due to fraud is greater than for a material misstatement due to error, because the fraud may include conduct in collusion, falsification, deliberate omissions, incorrect information or waived internal controls.
- gain an understanding of the part of the company's internal controls that is relevant to our audit in order to draw up audit measures that are appropriate with regard to the circumstances, but not in order to express an opinion on the effectiveness of the internal controls.
- evaluate the suitability of the accounting policies used and the reasonableness of the Board and CEO's assumptions in the

annual accounts and their related disclosures. draw a conclusion concerning the suitability of the Board and CEO's use of the

going concern assumption when preparing the annual accounts and the consolidated financial statements.

- we also draw a conclusion based on the audit evidence obtained, as to whether there is any material uncertainty factor relating to events or conditions that may cast significant doubt on the company's and the Group's ability to continue operations. If we conclude that there is a significant uncertainty factor, we must use the audit report to draw attention to the information in the annual accounts and consolidated financial statements about the significant uncertainty factor or, if such information is insufficient, modify our opinion on the annual accounts and the consolidated financial statements. Our conclusions are based on the audit evidence obtained up to the date of the audit report. However, future events or circumstances may mean that a company and a group can no longer continue operations.
- evaluate the overall presentation, structure and content of annual accounts and consolidated financial statements, including the information, and whether the annual accounts and consolidated financial statements reflect the underlying transactions and events in a way that gives a true and fair view.
- obtain sufficient and appropriate audit evidence with respect to the financial information for the units or business activities within the group in order to provide an opinion with regard to the consolidated financial statements. We are responsible for the control, supervision and execution of the Group audit. We are solely responsible for our opinion.

We have to inform the Board about, inter alia, the date, planned scope and direction of the audit. We must also inform about significant observations made during the audit, including any significant weaknesses in internal control that we may identify.

Report on other legal and regulatory requirements

Opinion

In addition to our audit of the annual accounts and the consolidated financial statements, we have also audited the Board and CEO's management of Heliospectra AB (publ) for the year 2018 and also the proposed appropriation of the profit or loss.

We recommend to the AGM that the profit be allocated in accordance with the proposal in the administration report and that the members of the Board and the Chief Executive Officer be discharged from liability for the financial year.

Basis for our opinion

We have conducted the audit in accordance with auditing standards generally accepted in Sweden. Our responsibility in this regard is described in detail in the section entitled Auditor's responsibility. We are independent of the parent company and the Group in accordance with professional ethics in Sweden and we have otherwise fulfilled our professional ethical responsibilities under these requirements.

We believe that the audit evidence we have obtained is sufficient and appropriate as a basis for our opinions.

Responsibilities of the Board and the Chief Executive Officer

The Board is responsible for the proposal for the appropriation of the company's profit or loss. Among the things considered in the proposal are an assessment of whether the dividends are justified

with regard to the requirements that the company's and Group's business nature, scope and risks place on the size of the parent company's and the Group's equity, the need for consolidation, liquidity and general position.

The Board is responsible for the company's organization and the administration of its affairs. This includes ongoing assessment of the company's and the Group's financial situation and ensuring that the company's organization is structured such that bookkeeping, asset management and the company's financial affairs are otherwise monitored in a reliable way. The CEO takes care of day-to-day administration under the Board's guidelines and instructions and must, among other things, take measures necessary for ensuring that the company's accounting is completed in compliance with legislation and that assets are managed in a satisfactory manner.

Auditor's responsibility

Our goal with regard to the management audit, and therefore our opinion concerning discharge from liability, is to obtain audit evidence that with a reasonable degree of certainty enables us to determine whether any member of the Board or the CEO in any material respect: has carried out any act or been guilty of any omission that could give rise to liability for damages against the company, or has in some other way acted in contravention of the Swedish Companies Act, the Swedish Annual Accounts Act or the articles of association.

Our goal in regard to the proposal for the allocation of the company's profit or loss, and thus our opinion on this, is to assess with a reasonable degree of certainty whether the proposal is in compliance with the Swedish Companies Act.

Reasonable assurance is a high degree of certainty, but no guarantee that an audit performed in accordance with generally accepted auditing standards in Sweden will always detect the actions or omissions that may give rise to liability for damages against the company, or to a proposal for allocation of the company's profit or loss that is not in accordance with the Swedish Companies Act.

As part of an audit under ISA and good auditing practice, we use professional judgment and maintain a professionally skeptical attitude throughout the audit. The management review and the proposed appropriations of the company's profit or loss are based mainly on the audit of the accounts. Any additional procedures are performed according to our professional judgement based on risk and materiality. This means we focus our examination on such measures, areas and conditions as are essential for the operation and where deviations and non-compliance would have special significance for the company's situation. We review and examine decisions, decision support data, actions taken and other conditions that are relevant for our opinion concerning discharge from liability. As the basis for our opinion on the Board of Directors' proposed appropriations of the company's profit or loss, we assessed whether the proposal is in accordance with the Swedish Companies Act.

Gothenburg, 7 April, 2020

Frejs Revisorer AB

Mikael Glimstedt
Certified Public Accountant

The background of the page is a soft-focus photograph of a greenhouse. In the foreground, several pink cosmos flowers are in bloom, with their delicate, feathery green leaves clearly visible. The flowers are scattered across the lower half of the frame. In the background, the structure of the greenhouse is visible, including a pink metal frame and a hanging lamp that is illuminated, casting a warm glow. The overall atmosphere is bright and natural.

Financial Calendar

24 April 2020	Interim report Jan–March 2020
14 May 2020	Annual General Meeting
21 August 2020	Half year report Jan–June 2020
29 October 2020	Interim report Jan–September 2020



Heliospectra offers intelligent lighting technology for greenhouses, indoor cultivation and plant research. The lighting solutions are based on a deep understanding of plant physiology and photosynthesis combined with the unique application of modern LED technology.



Heliospectra AB
Fiskhamngatan 2 · SE-14 58 Gothenburg
Telephone: +46 (0)31-40 67 10
www.heliospectra.com