CrayoNano

Company Presentation

April 2023

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Financial ambitions

By 2026

Manufacture
30-40 million units

Generating
NOK 750m – 1bn revenue

In medium- to long-term…

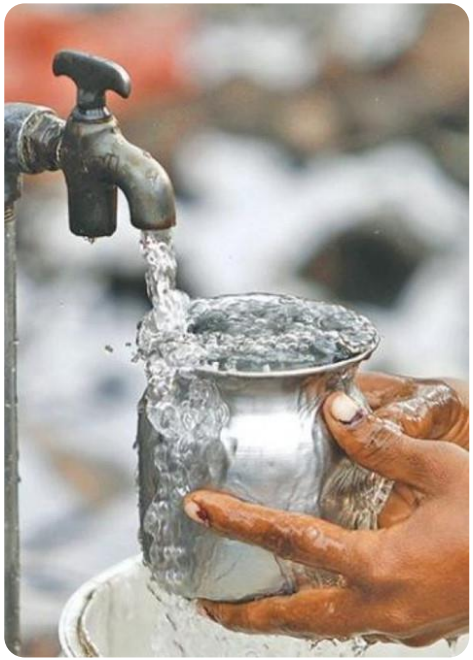
Gross profit of
50-65%

How we will get there:

- Controlled go-to market approach to build **successful partnerships with tier 1 customers in rapidly growing market**
- Expanding international sales force with **experienced sales personnel** and distributors to target customers in priority levels
- CrayoNano **patent protected technology** enables **high volume manufacturing** at **high yield[1] with high performance**
- Roadmap to **industry leading cost position**, outperforming costs and performance of current UV-C technology and hazardous cleaning solutions
- **Highly scalable fab-lite business model** allows partnership-based **flexibility in manufacturing**, targeting production capacity ~150m units per year by 2026 with limited capex requirements

Note: [1] Yield = metric dividing no of good parts produced by total no of parts started in production

Providing a sustainable solution for global challenges



Massive and growing world population...

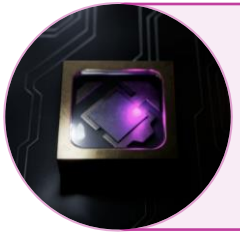
~10bn

world population by 2050

...with increasing health concerns, like access to safe drinking water

~5bn

people could face water scarcity and limited access to clean water by 2050

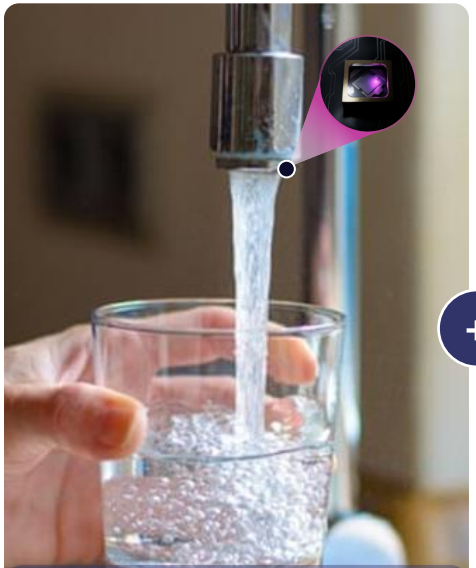


CrayoNano

CrayoNano provides a **disruptive and patented** UV-C LED semiconductor component that is **energy efficient, scalable and sustainable**, replacing the use of toxic chemicals and mercury UV lamps for disinfection to **ensure safe drinking water at scale**. Miniaturisation enabled by **nanotechnology** unlocks additional use cases

Source: United Nations

Flexible chips – used everywhere, from homes to hospitals



Faucet water disinfection – end-application example

“Thousands” of end-applications

can benefit from utilising UV-C LED, ranging from food processing sterilisation to hospital disinfection, enabled by miniaturisation

- Standardised for all applications
- The size of a grain of rice, enabled by advanced nanotechnology
- Superior design flexibility
- Direct and eco-friendly substitute to current solutions

CrayoNano provides its disruptive UV-C LED solution to system integrators and original equipment manufacturers

UV-C at a glance

UV-C

- UV-C is the shortest and most dangerous wavelength, which is absorbed by the ozone layer
- High energy radiation that can penetrate cell membranes and damage DNA/RNA of organisms
- Proven effective against viruses and most other pathogens
- Wavelength between 100-280 nanometers

UV-B

- UV-B has the largest effect on the upper layer of human skin, causing redness and burning that can lead to skin cancer
- Commercial (e.g. sunbeds) and medical applications
- Wavelength between 280-320 nanometers

UV-A

- UV-A is the longest wavelength and penetrates deep into human skin, causing aging and wrinkling
- Black-light lamps are in this spectrum
- Wavelength between 320-390 nanometers

UV-C radiation is a known disinfectant that has been used extensively for more than 60 years

CrayoNano – Next Generation Semiconductor Company

- Design and sell **UV-C LED chips**
- Customer products **disinfect water, air, surface**
- **Flexible fab-lite** manufacturing

2005-2012

Born in the lab at NTNU

2012-2022

Strong owners, grants and patents validating the technology

- NOK ~220m equity + NOK ~86m grants
- 266 patents[1]

2023 and onwards

Norwegian company solving global challenges

- 41 employees
- HQ Trondheim, Norway and subsidiary in Taiwan for design,engineering,marketing,sales
- Fab-lite manufacturing model
- Selling in for hypergrowth disinfection market
- Scale-up phase – first revenue booked – 100+ customers engaged

Note: [1] 97 own patents (core) and 169 licensed

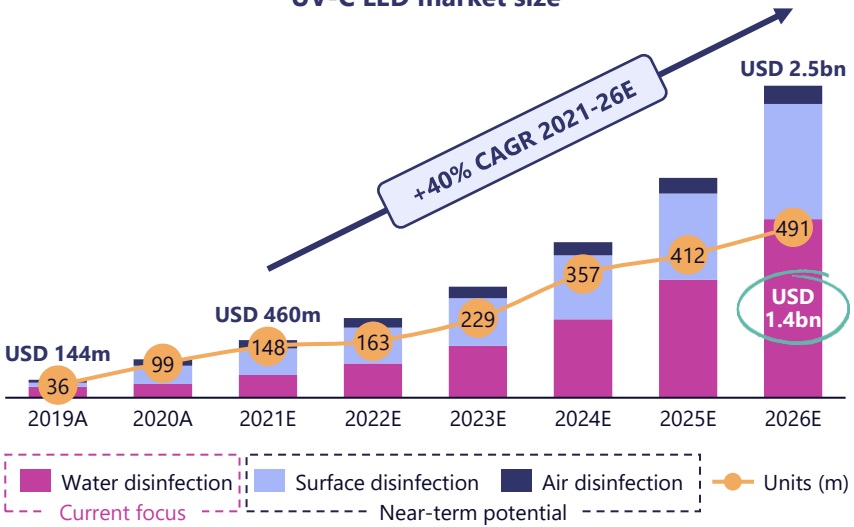
Addressable Market & Opportunity

The pandemic revealed the **need** for improved sanitisation concepts, and the **willingness to pay** for peace of mind

CrayoNano's solutions are applicable to a broad range of end applications within **water, food and air disinfection**

UV-C LED market growing at 40% CAGR to USD 2.5bn by '26E

UV-C LED market size



Market segments

Water disinfection
Existing water treatments often use hazardous chemicals, while the UV-C LED solution is a clean, environmentally friendly alternative

Surface disinfection
In high contact and trafficked areas, UV-C LED can enable an automatised disinfecting solution that provide a safe environment to meet and interact in

Air disinfection
Small, compact UV-C LEDs can eliminate airborne pathogens and other causing bacteria, making multi-family housing and shared workplaces safer

Drivers for UV LED integration – UV disinfection

- Environmentally-friendly
- Low power consumption
- Instant start and stop
- Compactness and lightweight
- Longer lifetime
- No heat emitted

UV-C disinfection dates back to 1910, and used on a bigger scale since the mid 1950s

Note: Segment splits are management estimates based on the Yole Development Report for 2020 | Source: Yole Development Report (2021) and management estimates

LED technology enables new applications for UV-C

~20%[1] Share of market '26E

Main current UV-C applications


Water treatment


Drinking water disinfection


Air purification systems


Aquarium sterilizers


Laboratories & hospital disinfection


Food packaging disinfection

~80%[1] Share of market '26E

New UV-C LED applications


POU: Faucets, showers & POE


Consumer white goods


Water coolers, ice makers


Food processing sterilization


Cleaning drones & robots


Baby bottles sterilizers


Air conditioner


Automotive


Dishwasher


Public transportation


Healthcare/medical


Humidifiers

Since 2020, integration of disinfection features into home appliances are providing strong growth driver to the UV LED market

7 of the top 10[2]

home appliance players have at least one reference integrating UVC LEDs

Haier · Electrolux · SAMSUNG · Whirlpool · Panasonic · LG · Midea

Note: [1] Management estimates: ~20% replacement of current lamp business, and ~80% new applications; [2] Yole Development Report | Source: Yole Development Report (2021, 2020) CrayoNano AS | www.crayonano.com

Sustainability

We are bringing **safe drinking water solutions** to the world, supporting better health and well being for those who need it most

CrayoNano's UV-C LED can be part of a **sustainable solution**, enabling portable and effective disinfection and purification of air, water and food

Broad and positive ESG impact

UN environment
United Nations Environment Programme

MINAMATA CONVENTION ON MERCURY

MAKE MERCURY HISTORY

The convention's goal is to protect human health and the environment from the adverse effects of mercury – expects a ban on mercury UV lamps once alternative technologies, like UV-C LED, are widely available

3 GOOD HEALTH AND WELL-BEING

- Clean water, air and food are necessities challenged by a growing population and resources
- UV-C LED can replace conventional UV lamps containing mercury

6 CLEAN WATER AND SANITATION

- Free of toxins
- Solutions based on UV-C LED can help reduce the use of toxic chemicals like chlorine
- Labour-less sanitising

13 CLIMATE ACTION

- Reduces CO_2 emissions
- UV-C LED is more energy efficient than current disinfection methods
- UV-C LED does not generate ozone[1]

Health and eco-friendly benefits

- Energy efficient CO_2 reduction
- Reduce the use of toxic chemicals
- Instant on/off, no warm-up time needed
- Constant UV output for effective disinfection
- Enclosed to protect against UV-C radiation
- Longer lifetime, low maintenance

UV-C LED technology can be deployed in portable, solar charged, water sanitation devices

Note: [1] Mercury UV lamps produce ozone, which is dangerous to breathe, especially in a constricted space, and elevated exposures to ozone can affect sensitive vegetation and ecosystems

ESG mission to enable water security for the world

Replacing current methods

Lower energy consumption
~70% energy savings compared to mercury UV lamps

Lower CO_2 footprint
~50% lower CO_2 footprint than mercury UV lamps

No ozone generation
UV lamps produce ozone due to 185nm peak

Less waste
>10 years lifespan versus 1-2 years for UV lamps

No mercury
Conventional UV lamps contain 20-200mg mercury

No need for toxic chemicals, like chlorine
Chlorine is commonly used in water treatment systems

CrayoNano

Using UV-C LED for water disinfection

~1/3rd

of CrayoNano's 2023 target customers are in the water treatment and disinfection segment

- Globally, there are more than 785 million people who lack access to clean drinking water
- UV-C LED equipped on the water tap can sterilise water to improve the safety of drinking water
- UV-C LEDs are significantly smaller than their standard UV counterparts, enabling integration in small appliances
- Instant on/off function and limited heat generation make UV-C LED ideal for disinfecting water, incl. cold water

Exposure to UV-C radiation can cause severe skin burns and eye injuries. Hence, UV sterilisation is usually done using UV-C lamps with protective shields

CrayoLED™ is a sustainable alternative to mercury UV lamps, and can contribute to a healthier and safer everyday life

Source: Phoseon, World Health Organisation

UV-C LED can reduce power consumption and CO_2 emissions

Example	 **Drinking water disinfection**	 **PET bottle production**	 **Lower temperature washing**
Current method	**Disinfection of water by boiling** ▪ Indonesia: ~90% of households boil water before drinking ▪ Africa: 0-40% of households boil water ▪ Shanghai: ~45% of population boil water	**High consumption of bottled water** ▪ China: 120bn litres; 20m tons CO_2 emissions ▪ USA: 65bn litres; 12m tons CO_2 emissions ▪ Global: 470bn litres; 85m tons CO_2 emissions	**High temperature washing** ▪ Nearly two thirds of Europeans (63%) still wash clothes at 40°C or higher ▪ Reducing wash temperature from 40°C to 30°C would save 27kg of CO_2 equivalent per household per year
Total CO_2 implications of current methods	**~60m ton CO_2** annually in Indonesia alone	**~85m ton CO_2** annually worldwide	**~6m ton CO_2** annually in Europe

Source: Nazava, Statista, Sciencing, Electrolux study (2021)

Estimated 80%[1] less energy cost and CO_2 for water treatment

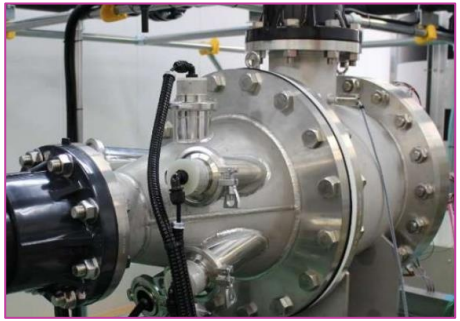
CrayoNano's impact for water treatment systems

- **38%[1]** less energy and CO_2 over a month-long testing of LED vs lamp
- **80%[1]** estimated lower power consumption with LED vs lamp over a whole lifecycle
- **x5** roadmap to TCO[2] improvement in 5 years
- No toxic chemicals or mercury

Solutions available in the market today

Europe / Typhon Systems

US / AquiSense


Asia

Current challenge

- Minamata convention will ban current mercury based systems
- Global energy costs increase
- Water reuse and water scarcity worldwide
- CO_2 footprint reduction mandated by Paris accord

Source: Typhon Treatment Systems, Management estimates, UN
Notes: [1] Energy comparison between Hg & LED UV Systems for Municipal Scale Drinking Water Disinfection (Power Consumption of UV LED a Case Study (typhontreatment.com)), [2] TCO – total cost of ownership

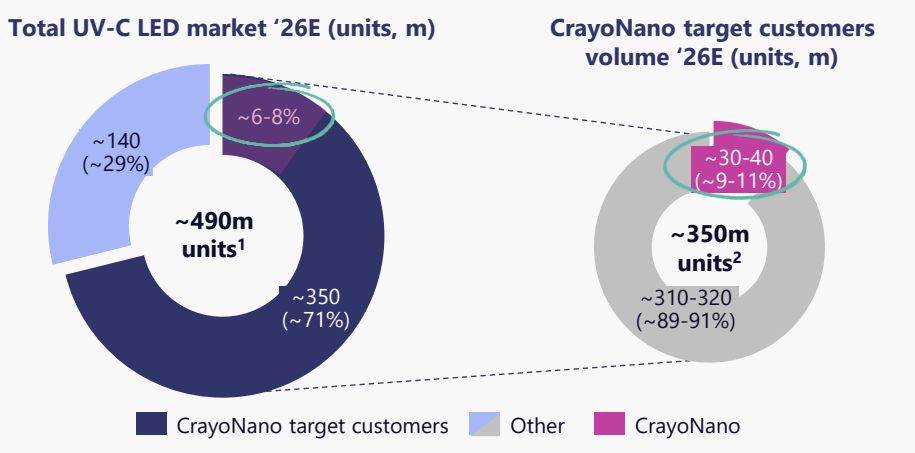
CrayoNano Target Customers

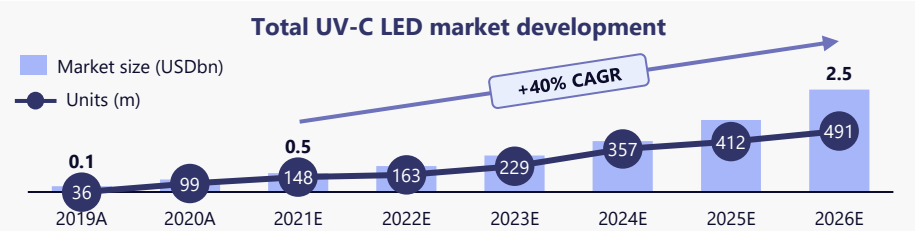
Strong interest from **industry-leading system integrators** and **first revenue booked**

Signed **3 letters of intent** with key strategic customers, and long list of identified target customers

Note: There is a testing phase before commitment to figures proposed in letters of intents. No binding customer agreements have been entered into as of the date of this Presentation

Targeting ~6-8% market share in 2026





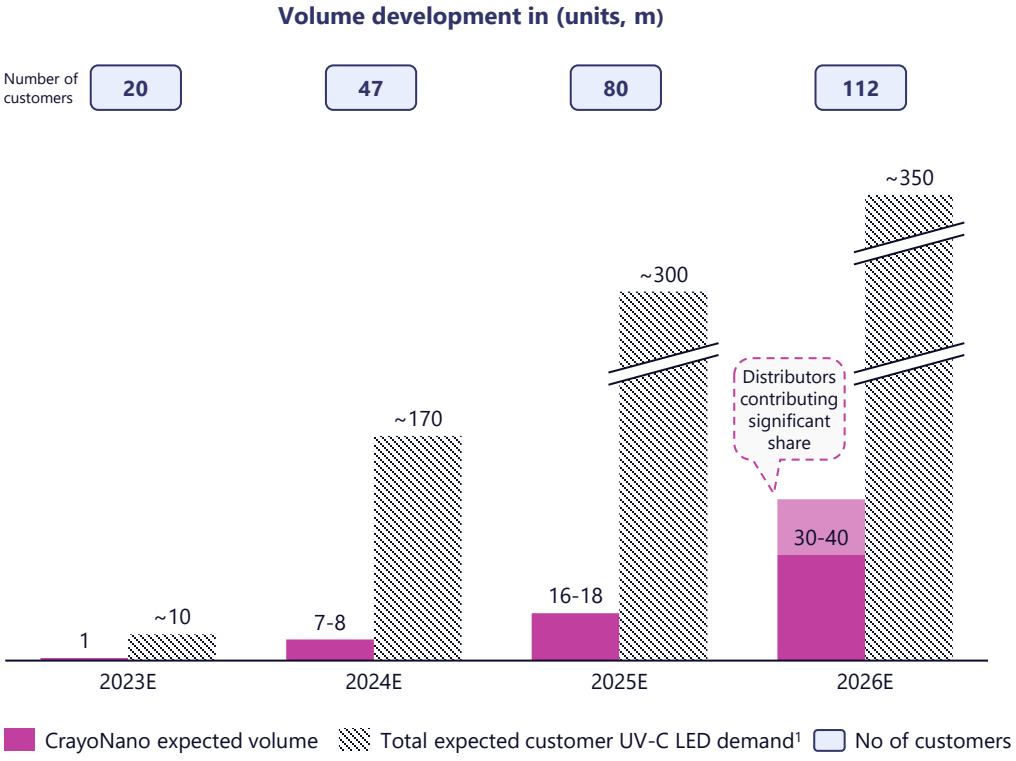
Commentary

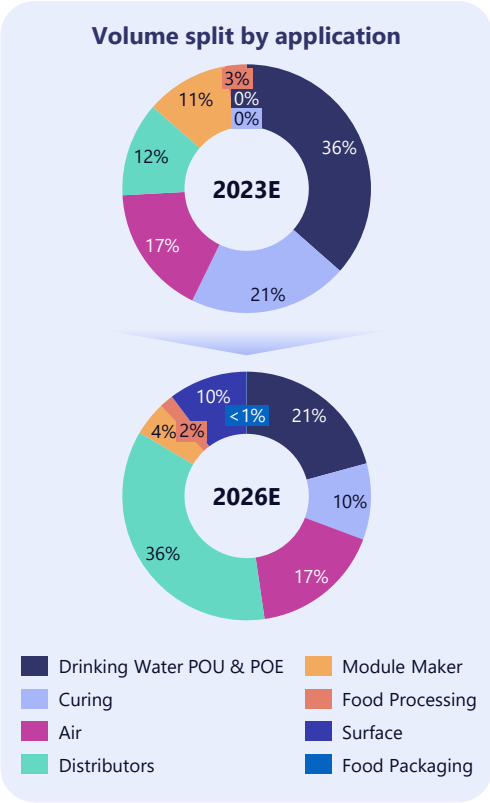
- Yole forecasts the total UV-C LED market to reach ~490m units in 2026, of which CrayoNano's prospects is estimated to cover ~71% based on the long list of 112 identified target customers
- CrayoNano expects to supply ~9-11% of its target customers estimated total demand in 2026, which is a function of the expected share of each customer's demand and a probability rate of CrayoNano winning the customer
- Based on volume, CrayoNano is expected to have ~6-8% market share in 2026, equivalent to ~30-40m units
- The targeted customers are based on sales personnel's relationships with relevant decision makers, former customer relationships, and sales personnel's former experience working with the companies

CrayoNano estimates a market share of ~6-8% of the global UV-C LED market in 2026 based on volume

Note: [1] Yole Development Report (2021); [2] Management estimate | Source: Yole Development Report (2021) and management estimate

Strong expected volume increase, largely driven by distributors





Note: [1] Management estimate

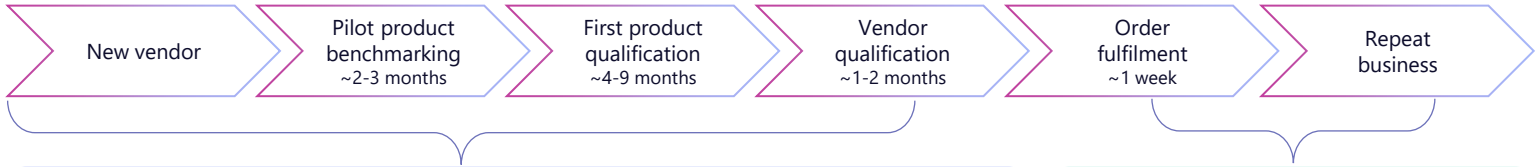
Go-To-Market Strategy & Commercial Traction

Our unique technology is a **vital component** for the fast-growing disinfection market, with **high customer demand**

CrayoNano will adopt a controlled market entry to **ensure high product quality** and build long term customer relationships

Structured sales process

Standard customer qualification and design-in process



Typical qualification & design win timeline – 5-12 months

1. *Sample Testing*
   ~ 1 months
2. *Product Qualification*
   3 – 9 months
3. *Design Win Qualification*
   1 – 2 months

CrayoNano's revenue operations (RevOps)

Holistic customer orientation

Sales / marketing / customers operations + Data
The three teams work together as one unit to work with data, which fuels the RevOps strategy

ORACLE NETSUITE

Close customer follow-up

Netsuite's ERP/CRM system went live on July 1st with customer pipeline including forecast and opportunities implemented

Sales Force – Direct Sales and scale with Distributors

- We plan to increase our sales force each year, bringing our disruptive technology to more OEM partners and customers, creating greater awareness for our products, and supporting mass affordability and adoption
- **We will focus on building a competent internal sales force in 2023, recruiting experienced sales personnel with robust UV-C LED knowledge and an extensive network in the industry**
- From 2024 and onwards, we plan to begin establishing a global distribution network to compliment our direct sales for scaling of mass affordability and adoption

Present:
Norway HQ & Taiwan
RevOps staff **10 FTEs**

2023: Further sales force expansion in Norway and Taiwan
RevOps staff **20 FTEs**

2024: Opening of sales offices in the US & EU
RevOps staff **34 FTEs**

2025: Further expansion in the US, EU, Asia and ROW
RevOps staff **49 FTEs**

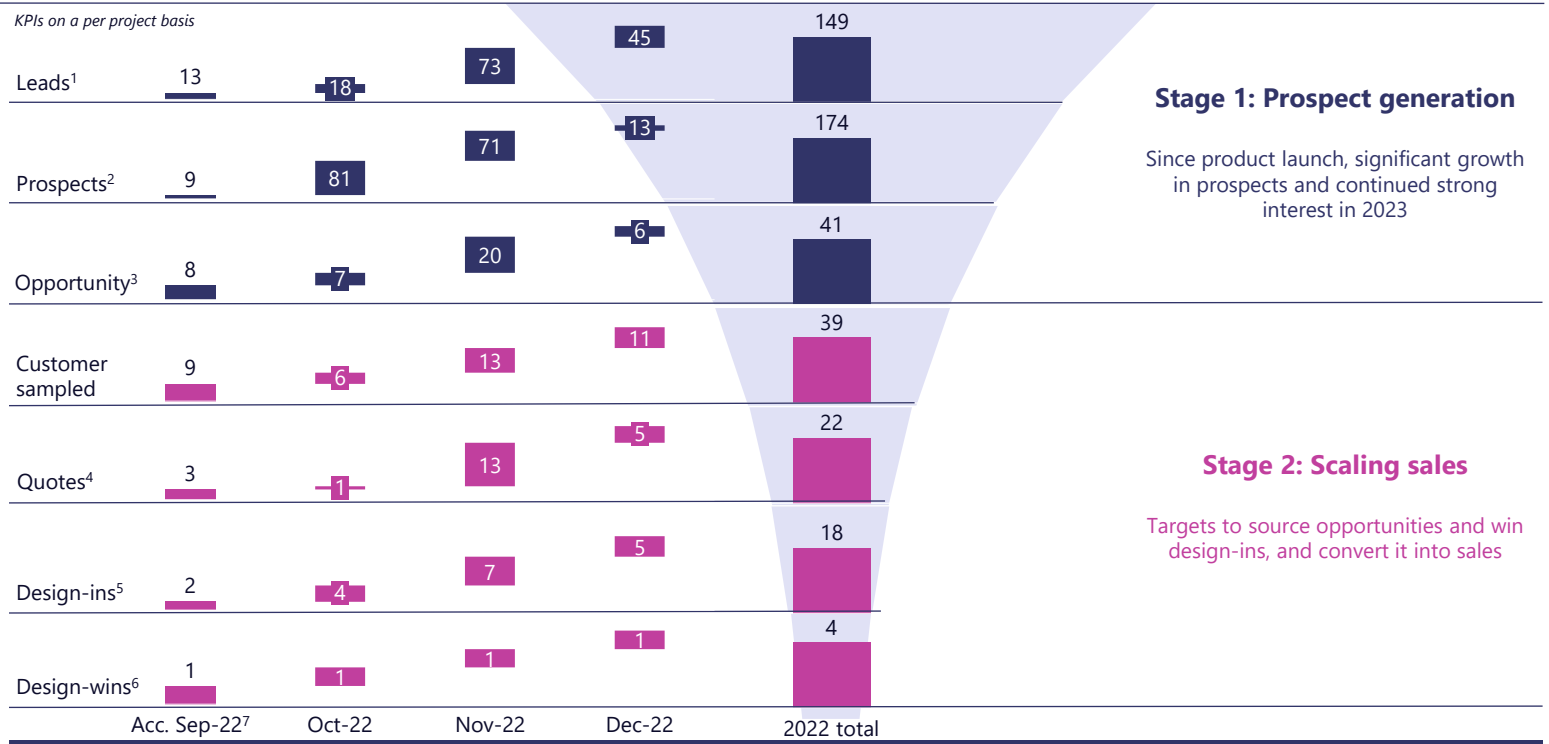
Target customers supporting 2023 revenue plan

Customer	Description	'23E CrayoNano volume	'23E total volume demand	Application	Industry	Commentary
AquiSense Technologies	Supplier of UV-C LED products to disinfect water	*Confidential*	*Confidential*	Drinking water POU[1] & POE[2]	Industrial	First revenue booked. Sampled. In qualification
watersprint Intelligent water purification	Supplier of UV-C LED products to disinfect water	*Confidential*	*Confidential*	Drinking Water POU & POE	Electronics	Sampled. In qualification
Confidential	Offers UV light solutions	150,000	>1,000,000	Curing	Industrial	Sampled. In qualification
Confidential	LED manufacturer and technology developer	94,500	>100,000	Drinking water POU & POE	Industrial	First revenue booked. Large end customer opportunities
Confidential	Delivers water purification and disinfection solutions	90,000	>1,000,000	Drinking water POU & POE	Commercial	Sampled. In qualification
Confidential	Manufacturer of water related products	50,000	>1,000,000	Drinking water POU & POE	Commercial	Early contact
Confidential	Manufacturer of UV and UV LED curing solutions	50,000	>1,000,000	Curing	Healthcare/ medical	Sampled. In qualification
Confidential	Experts in airborne virus elimination	30,000	100,000	Air & surface	Industrial	Sampled. In qualification
Confidential	Developer of water treatment products	20,000	>100,000	Drinking water POU & POE	Electronics	Engaging with customer
+11 other target customers						

Controlled market entry with key target customers to validate CrayoLED™ – strong uplift in volume expected following this

Note: [1] POU = Point of Use; [2] POE = Point of Entry

Strong customer demand in Q4'22, supporting 2023 targets



Stage 1: Prospect generation

Since product launch, significant growth in prospects and continued strong interest in 2023

Stage 2: Scaling sales

Targets to source opportunities and win design-ins, and convert it into sales

Strong attraction in Q4'22 post product launch, creating basis for 2023 targets

Key examples of CrayoLED™ design-ins for 2023

Water

Residential drinking water

Residential white goods

Consumer drinking water

Municipal water treatment

Surface and Air

Industrial devices

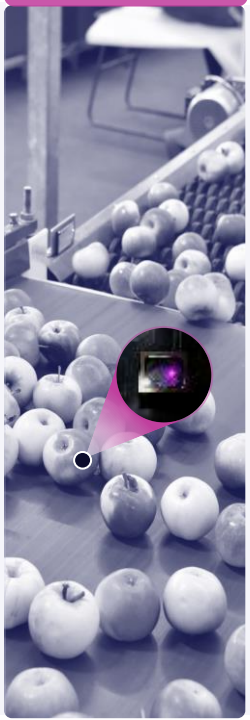
Air conditioning/ HVAC

Air purifiers

Public transportation

Spot disinfection

Curing



Printing

Food packaging

Targeting shipping 1 million units to target customers in 2023

Customer feedback

CrayoLED™ LED samples distributed to target customer groups

	CrayoLED™ H-series performance
Power	80mW
Lifetime reliability	L70 10,000hrs
Small footprint	3.5x3.5mm
Wavelength	275nm
Forward current	350mA

CrayoLED™ H-series feedback from target customers

"*CrayoLED™ initial testing results are **impressive**. Power and Voltage are matching the specs. 3rd party qualification highly appreciated*" by tier-1 water disinfection OEM customer (US)

"*CrayoNano, being a UV-C focused company is critical for us. Initial test results are good in terms of measurements and specs*" by tier-1 water POE customer (UK)

"*H-series is a **highly robust and reliable** UV-C LED with solid package. "* by tier-1 system integrator (Taiwan)

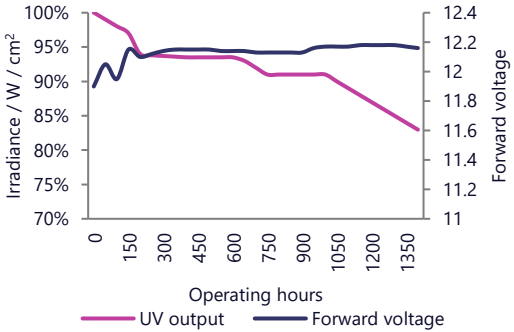
"*Would like to utilize **CrayoLED in the product & promote it in India consumer market**.*" by tier-1 ODM India

"*We have been waiting for the transitional time since the early UV-C and we **finally see it with your LED**. " by* tier-2 OEM US

"*We are buying other UVC LEDs right now. **The output of H-series is higher and lifetime is the same**. Price is similar too.*" by semiconductor tier-1 customer

"*Your **technical specification** in small, standardised form-factor and long life-time is already **taking UV-C LEDs one step further beyond your competitors**" - Tier 1 customer*

CrayoNano CLH-N3S Package Array UV Maintenance at maximum ratings



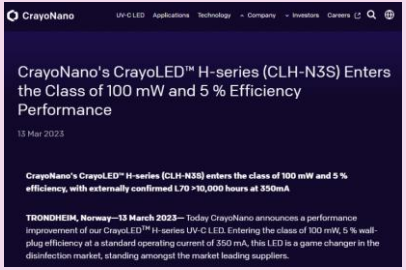
Robust product data – testing by Tier 1 curing customer - shared data with CrayoNano - to be used for adhesive curing

Source: Based on information from customers

Create customer demand – outbound marketing Mar23

Press releases

Product performance increase


CrayoNano's CrayoLED™ H-series (CLH-N3S) Enters the Class of 100 mW and 5 % Efficiency Performance

13 Mar 2023

CrayoNano's CrayoLED™ H-series (CLH-N3S) enters the class of 100 mW and 5 % efficiency, with externally confirmed L70 >10,000 hours at 350mA

TRONDHEIM, Norway—13 March 2023— Today CrayoNano announces a performance improvement of our CrayoLED™ H-series UV-C LED. Entering the class of 100 mW, 5 % wall-plug efficiency at a standard operating current of 350 mA, this LED is a game changer in the disinfection market, standing amongst the market leading suppliers.

13 March 2023

Distributor agreement signed


CrayoNano Announces Signing EMEA Distribution Agreement with Laser Components

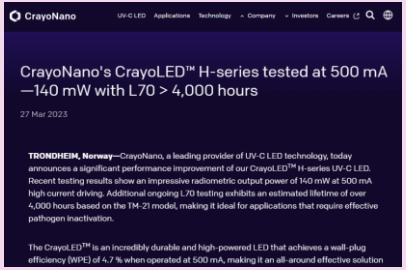
16 Mar 2023

TRONDHEIM, Norway—CrayoNano has signed a distributor contract with Laser Components GmbH, an experienced and reputable optical and optoelectronics distributor with locations throughout Europe, UK, and North America. Today we are announcing a partnership through which Laser Components Germany GmbH will distribute the CrayoLED™ H-series UV-C LED to customers with an initial focus on the EMEA region.

Laser Components is a well-matched partner for CrayoNano with over 40 years of experience as a distributor and solution provider in the area of optical and optoelectronic technologies, and UV-C LED expertise. Laser Components will promote and distribute our innovative

16 March 2023

140 mW and high robustness


CrayoNano's CrayoLED™ H-series tested at 500 mA —140 mW with L70 > 4,000 hours

27 Mar 2023

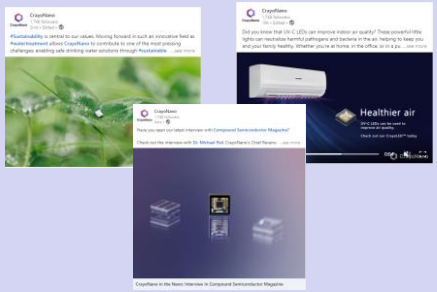
TRONDHEIM, Norway—CrayoNano, a leading provider of UV-C LED technology, today announces a significant performance improvement of our CrayoLED™ H-series UV-C LED. Recent testing results show an impressive radiometric output power of 140 mW at 500 mA high current driving. Additional ongoing L70 testing exhibits an estimated lifetime of over 4,000 hours based on the TM-21 model, making it ideal for applications that require effective pathogen inactivation.

The CrayoLED™ is an incredibly durable and high-powered LED that achieves a wall-plug efficiency (WPE) of 4.7 % when operated at 500 mA, making it an all-around effective solution

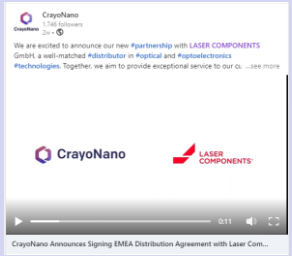
27 March 2023

LinkedIn

Market education

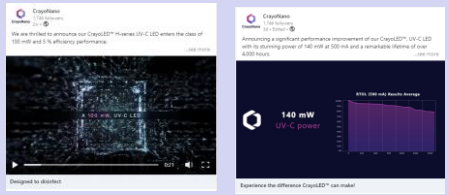


Customers and business enablers



Distributor agreement – Laser components

Product announcements – increase TAM



Patented Technology

Leading-edge **patented technology** as the foundation of a new generation of semiconductor devices

CrayoNano has **266 patents**[1] in the portfolio with **full freedom to operate** providing strong intellectual property protection

Note: [1] 97 own patents (core) and 169 licensed

Current technologies unable to solve market needs

	Conventional mercury-based UV lamps	Present-day UV-C LED "visible lighting" technology	CrayoNano's target 2026E UV-C LED technology
Description	Conventional UV lamps that contain mercury	Based on visible light LED technology, not manufacturable at high volume for UV-C LED	With nanostructures combined with classic LED technology – technology roadmap solves manufacturing scaling and performance
Environmentally friendly	✗	✓	✓
Size	LARGE	SMALL	SMALL Miniaturisation enabled by nano-technology unlocks multiple use cases
Manufacturing scalability	LOW	LOW	HIGH Dislocation-free and easily scalable to high volume production
Energy efficiency	LOW	LOW	HIGH High Wall Plug Efficiency (WPE)
Lifetime	MEDIUM Decent lifetime in terms of active hours, but no intermittent operation	MEDIUM	LONG High thermal and electrical conductivity leads to longer lifetime
Cost-effectiveness	MEDIUM Low cost per unit, but high replacement (every 500-2,500 hours) increase costs	MEDIUM Low yields make present-day technology costly	HIGH 1/10th cost per watt compared to present-day technology

Key performance metrics to be a viable alternative to mercury UV lamps

Note: CrayoNano wall-plug efficiency and cost effectiveness figures are based on 2026E CrayoLED™

Disruptive technology to solve UV-C LED industry needs

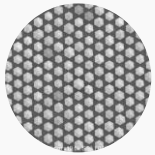
CrayoLED™ UV-C packaged LED

- ✓ Small footprint
- ✓ High power density
- ✓ Quality and reliability driven
- ✓ Qualified & validated by DEKRA, the world's largest product testing company
- ✓ Robust package design with industry leading lifetime of 10k hours (L70 rating[1])

Patented technology based on ~17 years of research...

Nanowire based design
No lattice mismatch and increased emission area

Graphene material
Transparent to all wavelengths and strain compensating



CrayoNano's
Ground-breaking UV-C LED solution enabled by CrayoNano's patented technology merging two nanomaterials, nanowire and graphene

...leading to lower cost & manufacturing scalability

Added value for UV-C LED

Higher efficiency and power output

Lower manufacturing cost

Manufactured at scale

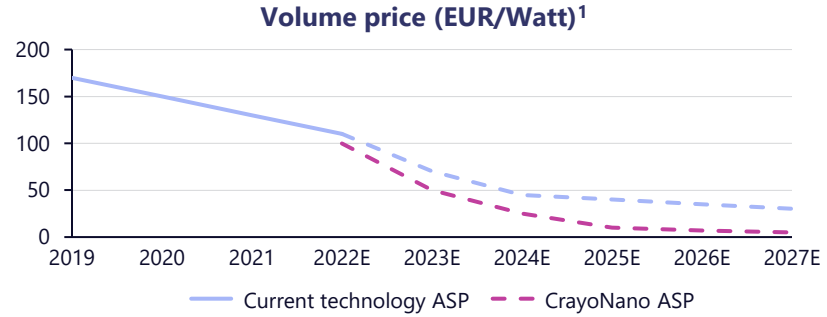
Falling ASP as volume increases, encouraging mass market adoption

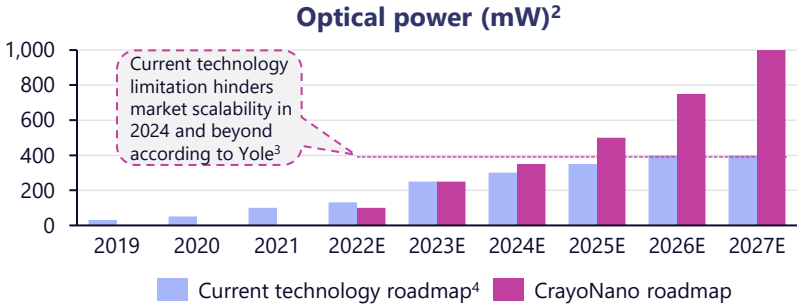
50-65%

Delivered with gross margins rising with scale

Note: [1] L70 is a lifetime measurement criteria developed by IESNA to evaluate useful lifetime of LED luminaire – exp. no of operating hours until light output has diminished to 70% of initial levels

CrayoNano delivers a material advantage over competition





CrayoNano market disruption

- Entered the market in 2022 – controlled based on industry standard platform – low risk and high adoption for customers
- Nanotechnology solves existing high volume manufacturing scalability problems enabling total cost of ownership for market growth
- Fab-lite model reusing existing semiconductor equipment allows rapid growth at efficient capex requirement

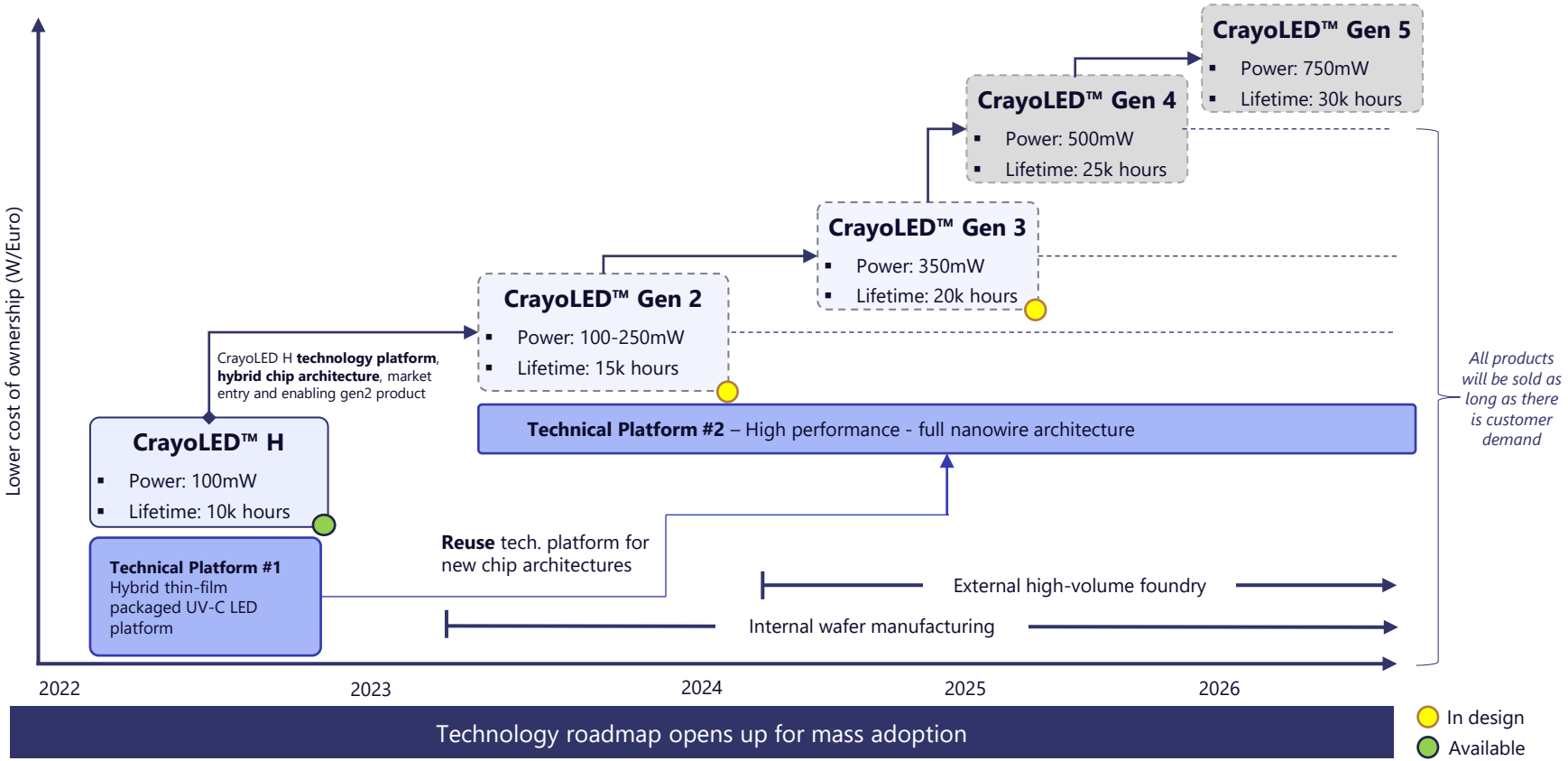
Competing technologies

- Competing UV-C LED products based on visible LED technology – unable to scale in volume, performance and reliability according to CrayoNano management
- Competing technologies struggle to improve total cost of ownership required to open high volume applications and new markets
- Industrialisation still remain a key challenge as process yields are still low (between 50% and 80% typically)[3]

In 2020, UV-C LED market was mostly restricted by manufacturing capacity of players with shortage at all level of the supply chain[3]

Note: [1] ASP = Average Sales Price year-end; [2] Yole forecasts for Thin Film; [3] Yole Development Report (2020) statement; [4] Highest output power in market regardless of chip-size, voltage, current | Source: Yole Development Report (2020)

CrayoLED™ UV-C LED product introduction roadmap



Note: [1] WPE = Wall-Plug Efficiency

Fab-Lite Business Model

We are **building a supply chain** that is **asset light and scalable**, allowing us to meet the growing demand for disinfection devices

CrayoNano's **fab-lite approach** ensures available capacity to research, develop and produce with limited capital deployment

Fab-lite strategy provides flexibility and lower time to market

Fab-lite strategy

Own R&D lab in Norway ⊕ **CrayoNano wafer fab + partner foundry in Taiwan**

3,000m²

available for in-house development in partner foundry, 500m² dedicated to CrayoNano fab2

Lower time to market

allows CrayoNano to focus on cost optimisation and control of the supply chain and intellectual property

Increased flexibility

can lease 1 machine for NOK 2-300k/month – total manufacturing capacity of 20m units per year

Taiwan key for accelerating fab-lite strategy

Increased activities toward Taiwan to scale operations

Geographically strategic for supply chain management

Concentration of semiconductor talent and industrial know-how

Photos: © CrayoNano 2022 – Photos from CrayoNano cleanroom, including MOCVD and Scanning Electron Microscope + device characterization

Securing capacity to satisfy anticipated strong demand

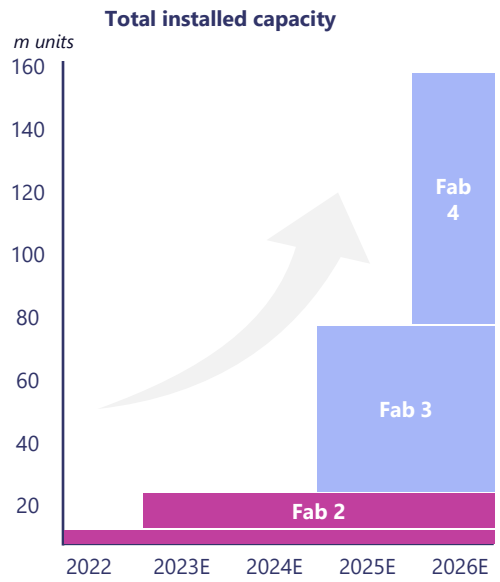
Internal capacity

Capacity of ~20m units per year based on NOK ~40m accumulated capex

External capacity

Capacity of ~130m units per year based on minimal capex related to production tooling

Production site	Capex (NOKm)	Yearly capacity (m units)	Utilisation (m^2)	Operational (year)
R&D Lab 1	11	(R&D)	-	2018
Fab 2	26	20	>500	2022/23[1]
Foundry Fab 3	12	50	3000	2024/2025
Foundry Fab 4	17	80	4000	2026
Total	**66**	**150**	**>7500**	-

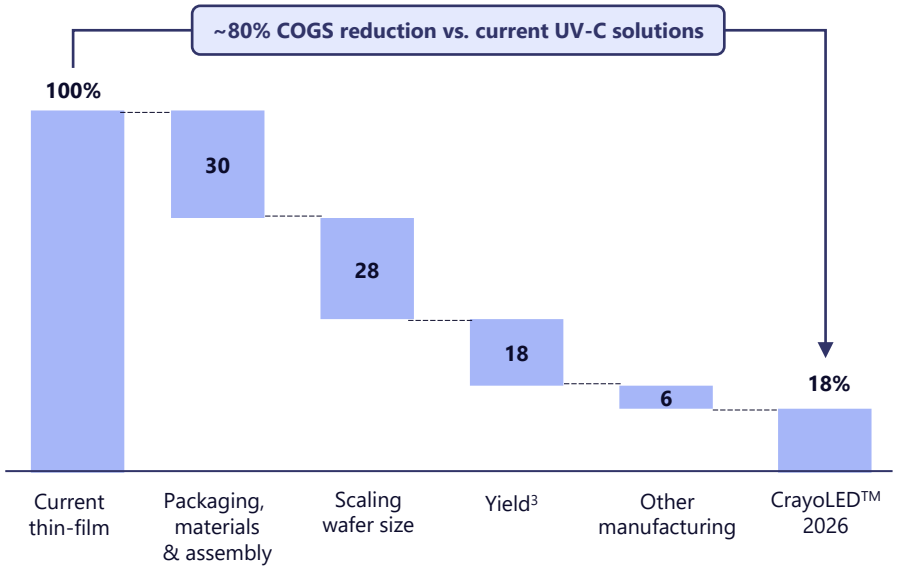


Aiming for capacity of ~150m units per year with limited capex requirements of NOK ~70m

Note: [1] CrayoNano Fab 2 (chip) + foundry (package)

Roadmap to market leading costs

Cost per unit evolution – relative scale



CrayoNano's disruptive technology enables long-term cost advantages

- High WPE[1] to drive cost reduction in packaging (e.g. no hermetic sealing[2])
- Scaling wafer size from 2" to 6" to reduce wafer consumption significantly
- Yield[3] increase to >90%
- Choice and amount of materials to increase efficiency and reduce cost
- Optimisation of manufacturing processes with partners at high volume production

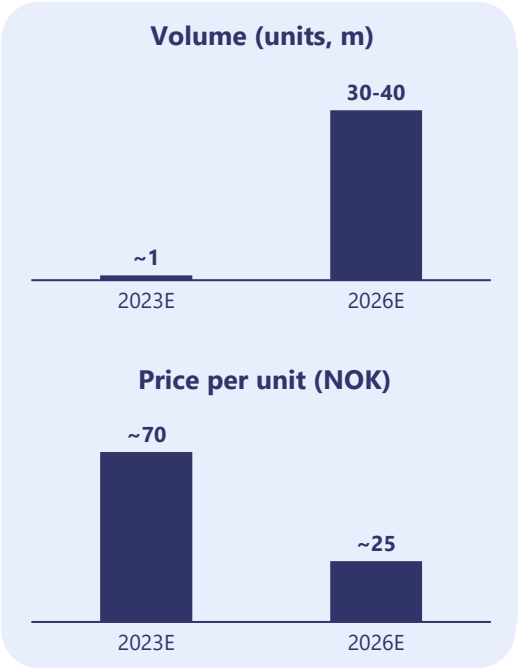
Note: [1] WPE = Wall-Plug Efficiency; [2] Hermetic sealing is any type of sealing that makes an object airtight; [3] Yield = metric dividing no of good parts produced by total no of parts started in production

Financial targets

CrayoNano is executing its planned acceleration on schedule, with **confidence in the outlook for its proprietary technology**

CrayoNano is targeting **NOK 750m – 1bn in revenue** by 2026 and a gross margin of 50-65% in the medium- to long-term

Financial ambitions



Targeting

NOK 750m – 1bn revenue

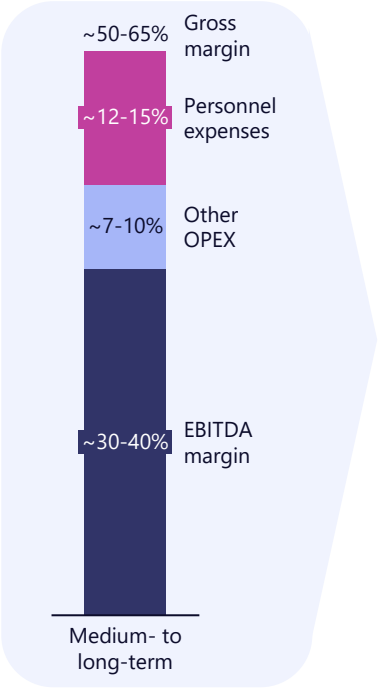
by 2026E

How we will get there:

- Controlled go-to market approach to build **successful partnerships with tier 1 customers in rapidly growing market**
- Expanding international sales force with **experienced sales personnel** and distributors to target customers in priority levels
- CrayoNano **patent protected technology** enables **high volume manufacturing** at **high yield with high performance**
- Roadmap to **industry leading cost position**, outperforming costs and performance of current UV-C technology and hazardous cleaning solutions
- **Highly scalable fab-lite business model** allows partnership-based **flexibility in manufacturing**, targeting production capacity ~150m units per year by 2026 with limited capex requirements

Note: [1] Yield = metric dividing no of good parts produced by total no of parts started in production

CrayoNano target cost structure



COGS

- COGS includes wafer fabrication, wafer level packaging and assembling expenses
- Majority of COGS expected to occur at production facilities in Taiwan (and partner in Europe)
- COGS is expected to be **35-50%** of revenue in the medium- to long-term

Personnel expenses

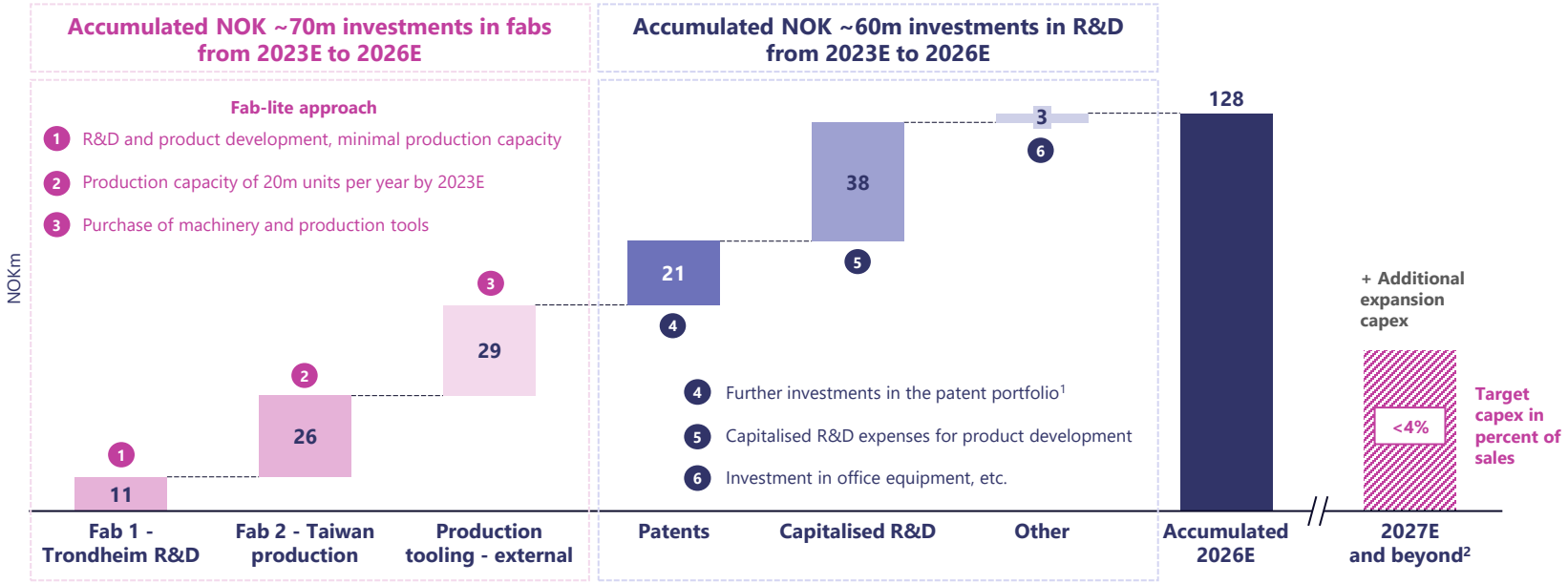
- Personnel expenses include salary, social benefits and bonuses for management team, R&D team, operations team and sales and marketing employees
- Average number of FTEs was ~40 in Q4'22 and is expected to **increase by ~170 FTEs** by 2026, driven by an increase in sales and marketing, and operations
- Personnel expenses in percent of revenue is expected to be **12.5-15.0%** in the medium- to long-term (in line with industry peers)

Other OPEX

- Other operating expenses comprise of purchased services, rent and facility, IPR expenses, IT and related equipment, marketing and other expenses
- Marketing expenses represent the largest cost component together with purchased services, followed by rent and facility in the medium- to long-term
- Other OPEX in percent of revenue is expected to be **7.5-10.0%** in the medium- to long-term (in line with industry peers)

Target gross margin of 50-65% and EBITDA margin of 30-40% in the medium- to long-term

Expected capex requirements



Capex-lite business model with expected total investments of NOK ~130m required from 2023E to 2026E

Note: [1] Patent investments include conditional liability of NOK 13m related to NTNU patent purchase; [2] Illustrative, not at scale

Disrupting the fast growing markets for disinfection

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