



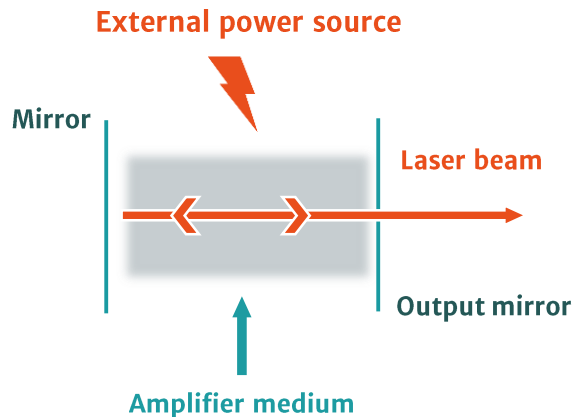
LUMIBIRD
MORE THAN LASERS

Investor presentation
January 2019

Laser technologies specialist



Laser, a concentration of light



With multiple applications



Material processing



Instrumentation and metrics



Surgery, biomedical



Research and defense



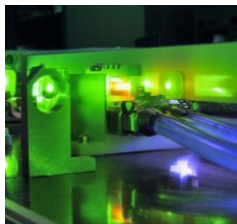
Information and telecommunications

3

Lumibird has expertise in the world's 3 most used laser technologies.

Because lasers perform an essential role in the development of tomorrow's technologies, Lumibird is developing a range of lasers adapted for applications in multiple areas, while industrializing the production of high-performance devices

Positioned on diverse markets



Industrial & Scientific



Universities



Laboratories



Industrial integrators



LiDAR Sensors



Autonomous vehicles



Wind energy



Drones



Defense and Space



Research centers



Defense industry



Space



Medical



Ophthalmologists



Hospitals



Specialist distributors



Created through the merger of two complementary longstanding operators



1970

2016 revenues: €63m

2016 headcount: 307

Solid-state laser
and laser diode
specialist



€30m of Medical
revenues in 2016

Complementary
products

Complementary
markets

Fiber laser
specialist



Strong competitive
position on LiDAR for
autonomous vehicles



1997

2016 revenues: €17m

2016 headcount: 101

Strengthening of
vertical
integration

Optimization of
R&D investment
programs

Critical mass for
contracts on a
significant scale

Sharing of
distribution
networks: US,
China, Japan,
Germany and UK

Pivotal player in the laser industry and synergies generating value creation.

International group that has achieved critical mass

Lumibird exports its solutions
to over 110 countries



Percentage of 2018 export revenues

515
2018 headcount

€7.2m
2017 R&D
spending

+18.5%
2018 growth

Breakdown of
2018 revenues



€25.7m
(25.4% of revenues)



€15.4m
(15.3% of revenues)



€26.2m
(26% of revenues)



€33.6m
(33.3% of revenues)

€100.9m



DIVERSIFIED BUSINESS LINES IN GROWING MARKETS

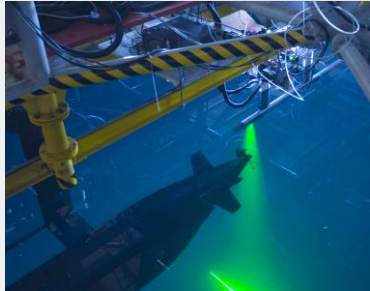
Product leadership
positioning



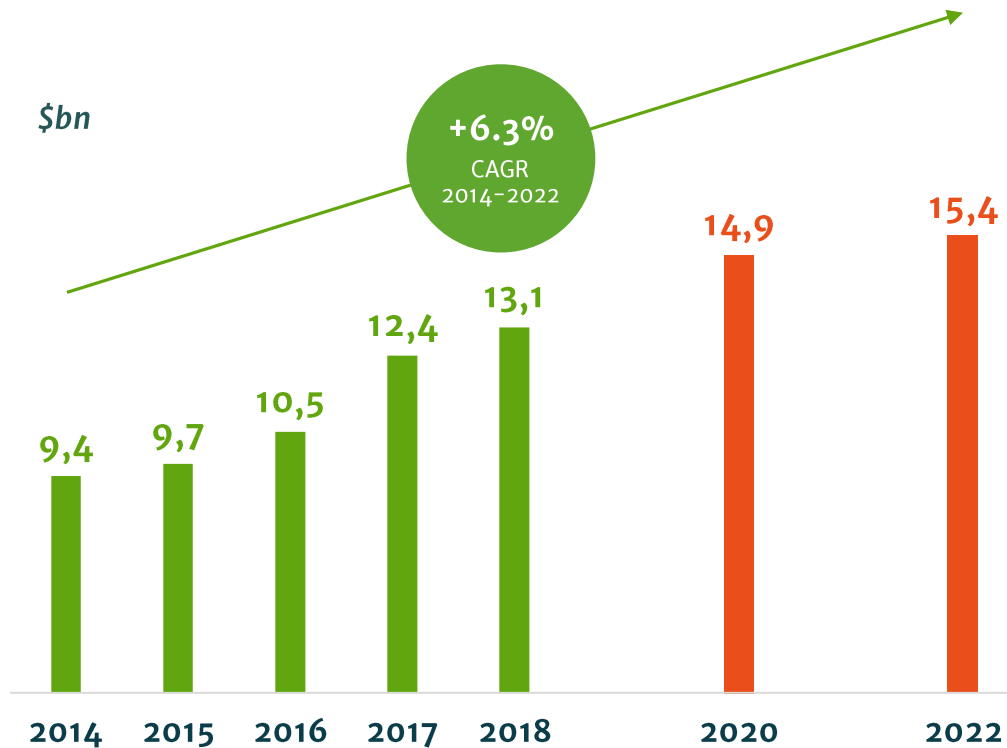
Diversified market risk



Highly international
group



Global laser market



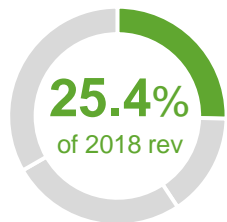
Source: Laser Focus World



Industrial and Scientific division

This “Industrial and Scientific” market covers a client base made up of universities, laboratories and industrial groups integrating lasers into their products.

(OEM production)



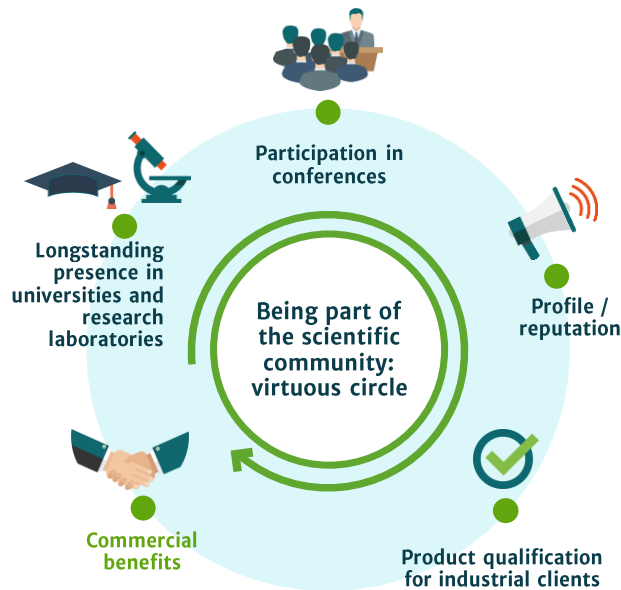
+1.5% YTD

Product
leadership

Nanosecond
pulsed
solid-state
lasers

Core
target
markets

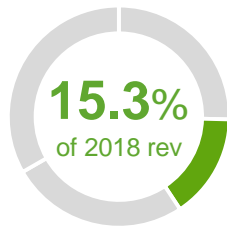
- > Flat screen repairs
- > Industrial production tools
- > Materials resistance metrics
- > Metrology
- > Telecoms



LiDAR Sensors

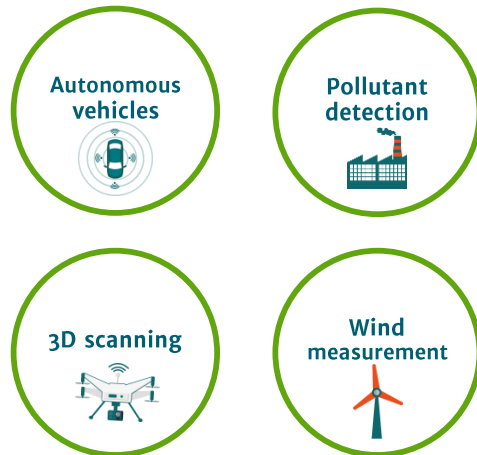
The LiDAR sensors market is developing strongly thanks in particular to the reduction in their production cost price, which is opening up new possibilities.

(OEM production)



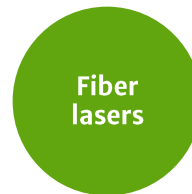
+33.8% YTD

Lumibird: pioneer on the main LiDAR markets



+ needs for rail industry, shipping or drones for civil, industrial and military applications

Product leadership



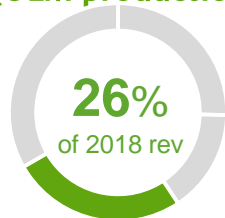
Lightweight, compact, reliable and high frequency

Position as a world leader for fiber LiDAR

Defense and Space

The group is committed to long-term research contracts, including laser development, prototyping, validation then production phases.

(OEM production)



+56.9% YTD

State organizations



E.g.: MEGAJOULE laser

- > 13 years developing and manufacturing the first series
- > In June 2018, this contract recorded a new order for over €20m, to be delivered over the next four years

Core target markets

- > Telemetry
- > Designation
- > Targeting
- > Obstacle detection

Product leadership

Industrial groups

THALES SAFRAN

E.g.: Rafale guiding laser

- > 1st research phase in 1999
- > Long-term contract

Very compact pulsed fiber lasers

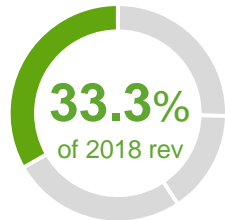
Shock, vibration and water resistant

Longstanding positions for Quantel and Keopsys with major operators

Medical division

Since being set up in 1993, Lumibird's medical division has developed and released a comprehensive range of specialist ophthalmology products.

(Finished products)



+6.3% YTD

Strong competitive positions on the
Ophthalmology market

Treatment



Diagnosis



The group estimates its global market share (excluding US and Japan) **at 10% to 20% for Ophthalmological treatment, alongside a particularly strong position on Ophthalmological ultrasound** (although there is no indisputable official source for this last market).

Global sales network



>110
countries

>90
distributors

Markets

Benchmark operator with medical professionals worldwide

Commercial organization with a proven track record



Marketing team

Identification of prospects and potential markets



Sales team

Prospecting and conversion of prospects into clients

Defense/Space, Industrial, LiDAR



60%
direct

Medical



70%
through
distributors

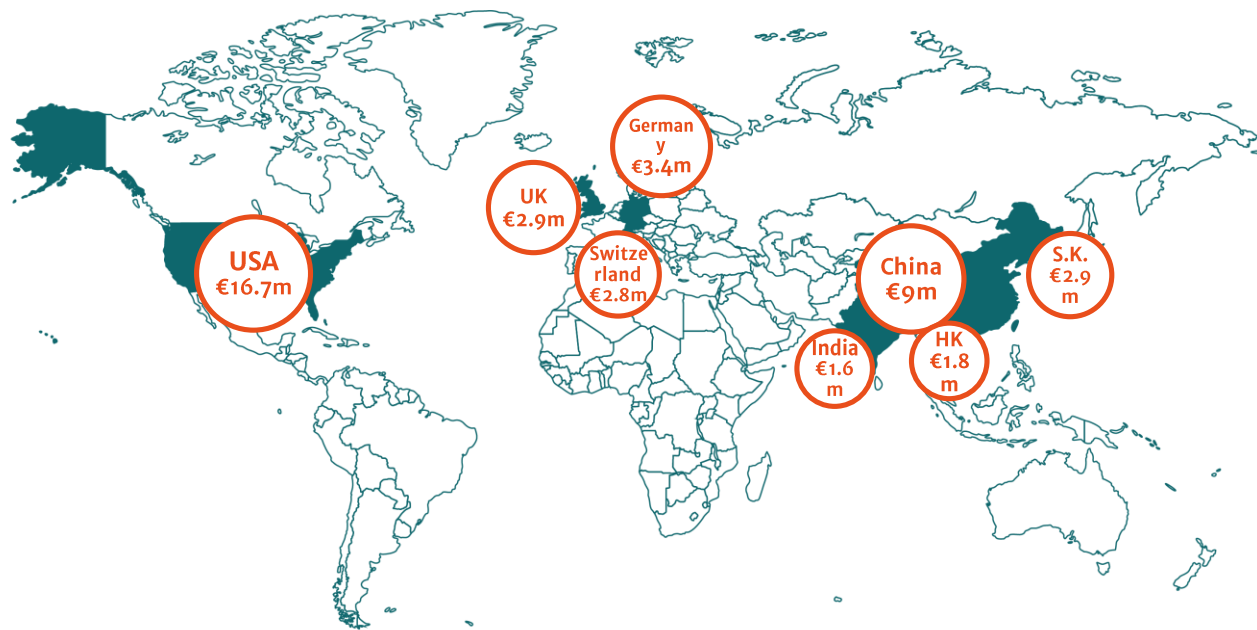
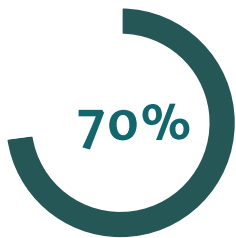
Calls for tenders / RFPs

Markets

The major strategic stages are supervised by senior management

Highly international group

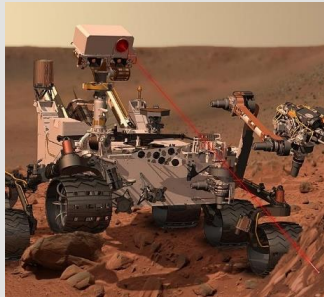
2018 export
revenues



4 production sites: Bozeman (USA), Lannion, Les Ulis, Clermont-Ferrand (France)

Export revenues of €70m in over 110 countries

INNOVATION-DRIVEN STRATEGY, FOR STRONG VALUE-ADDED PRODUCTS



Fundamental
research



Applied research



Innovative
processes

Technological lead driven by innovation

101 engineers and researchers

Portfolio of 30 patents:

- Laser components
- Laser architecture
- Optronics features
- Medical

Partnerships with industry-leading research centers

ALPhA NOV
Centre Technologique Optique et Lasers

THALES

cea

DGA

esa
ESTEC

PhLAM

III-V lab

COLUMBIA
UNIVERSITY

xlim
INSTITUT
DE RECHERCHE

PHOTONICS
BRETAGNE

ONERA
THE FRENCH AEROSPACE LAB

UC RIVERSIDE
UNIVERSITY OF CALIFORNIA

QUINZE-VINGTS
CENTRE NATIONAL DE RECHERCHE OPTIQUE

Example

Fiber laser miniaturization



- Pump model packaged in-house
- Optics features with photo-inscribed networks
- Collimation micro-optics
- Thermal dissipation architecture optimization

Size reduced by 3x

8.5%

of revenues devoted
to R&D in 2017

Technological lead continuously renewed

Outstanding development capabilities to meet the most complex needs

Expertise in the world's 3 most used laser technologies

Solid-state lasers

- Highly powerful
- Maximum wavelength spectrum

Laser diodes

- Low energy consumption (electrical current)
- Compact

Fiber lasers

- Powerful
- Compact and lightweight

Example

Space exploration



- ESA and NASA programs
- World leader for electro-optical efficiency, essential for space applications
- Lumibird is a pioneer for applications enabling space shuttles to automatically dock with the space station using its pulsed fiber lasers

1/4

of the R&D budget
funded by
clients in 2017
(€1.9m / €7.2m)

High-end positioning supporting pricing power

INDUSTRIAL APPROACH TO SUPPORT PROFITABLE GROWTH

Industrialization



Integration



New platforms



Flexible capacity management

Planning and logistics

- Production planning budget-driven (vs orders-driven)

Synergies between the sites

- Optimum capacity distribution

Flexibility for procurement and subcontracting

- On non-critical components and functions

Lean manufacturing

- Creation / optimization of production lines, standardization of platforms

Example

3D scanning laser production in Lannion



- Industrial production method for 3D scanning lasers that were previously produced on a small scale
- Rapid ramp-up to meet strong demand, with a transition to 2 production shifts
- 3,000 lasers produced in 2018

First to market: quick market access for innovative products



Increasingly integrated production

Historically strong integration

- All the lasers produced by the Group incorporate the key components (laser sources and passive fiber components) produced in-house

Decisive strategic advantage

- Securing supplies of critical components and maximizing margins

New integration drivers

- Defense: all the components with import restrictions
- Civil: strategic components (pump diodes, fiber elements / Bragg networks and fiber combiners)

Example

Bragg filters developed and produced in-house

- The Bragg filters are produced using a very complex photo-inscription process developed in-house
- A dedicated manufacturing unit was set up in-house in 2015, with stronger ramp-up to meet growing demand



Moving towards a platform rationale

Production approach inspired by the auto industry

- Core framework for developing several models
- Possibilities for differentiated product configurations

Response to upcoming productivity challenges

- Increase volumes
- Reduce costs
- Maintain product diversity

Example

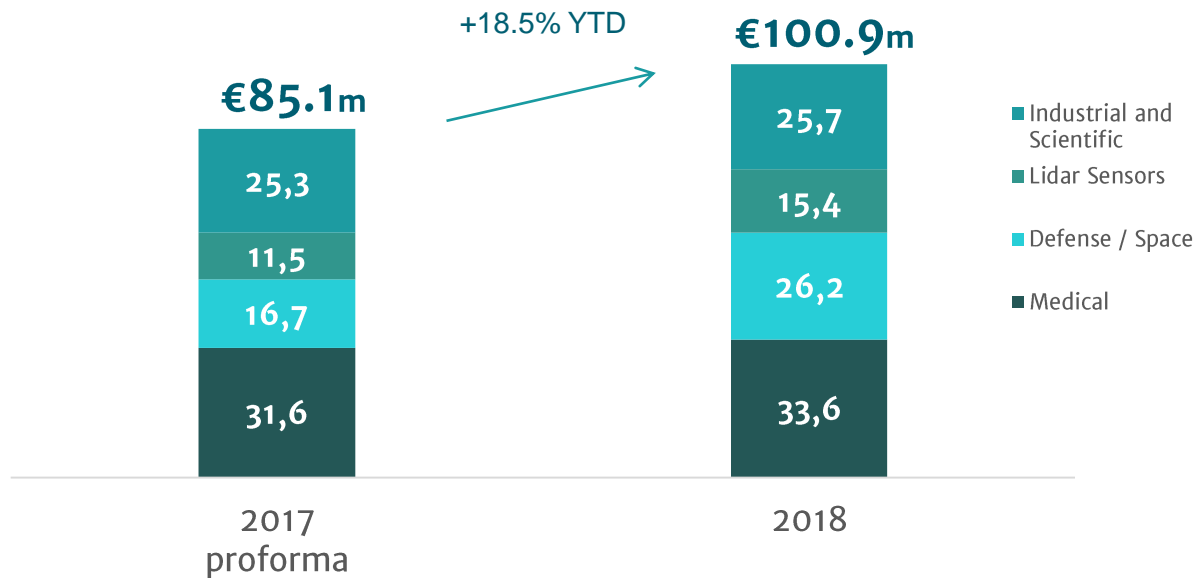
New Merion solid-state laser range

- Modular diode-pumped solid-state lasers:
 - Power: 100mJ to 1J
 - Wavelength: 100 Hz to 500 Hz
 - Frequency
 - Packaging
- Launch at Photonics West 2019
- Joint development between the Bozeman (USA) and Les Ulis sites



FINANCIAL RESULTS: GROWTH AND PROFITABILITY

Revenue history (€m)



Earnings at June 30, 2018

€m	H1 2018 consolidated	H1 2017 Proforma(1)	Change Proforma	2017 Proforma(1)
Revenues	42.3	40.5	+4%	85.1
Purchases consumed	-15.4	-16.7	-8%	-35.1
Gross margin	26.9	23.8	+13%	50
%	64%	59%		59%
Staff costs	-12.8	-12.3	+4%	-24.6
External expenses	-7.9	-7.1	+11%	-13.7
Taxes	-1	-0.9	+11%	-1.7
Other income and expenses	1	0.8	+25%	1.4
Operating income before depreciation and provisions	6.2	4.3	44%	11.4
%	15%	11%		13%
Depreciation and provisions	-2.7	-1.8	+50%	-4.5
Operating income	3.5	2.5	+37%	6.9
%	8%	6%		8%
Net finance costs	-0.2	-0.4	+43%	-0.8
Pre-tax income	3.3	2.1	+57%	6.1
Corporate income tax	-0.7	-0.3	-	-1.4
Net income	2.6	1.9	+30%	4.7
%	6%	5%		6%

(1) Proforma: revenues including business for the Keopsys and Quantel Groups over the full year
The LUMIBIRD Group's actual consolidated accounts for 2017 reflect the recognition of the Quantel Group's acquisition by the Keopsys Group for FY 2017 from October 6, 2017, the date when the contribution took place



Balance sheet at June 30, 2018



ASSETS €m	Jun 30, 2018	Dec 31, 2017	LIABILITIES €m	Jun 30, 2018	Dec 31, 2017
Non-current assets	70.4	67.4	Shareholders' equity	78.7	75.8
<i>Goodwill</i>	32.6	32.6			
<i>Intangible assets</i>	17.5	16.6	Non-current liabilities	14.8	14.9
<i>Property, plant and equipment</i>	8.2	6.1	<i>Other non-current financial liabilities</i>	9.3	9.9
<i>Other non-current assets</i>	12.1	12.1	<i>Non-current financial liabilities</i>	5.6	5.0
Current assets	52.0	51.8			
<i>Inventories</i>	24.3	19.6	Current liabilities	28.9	28.5
<i>Trade receivables</i>	17.7	15.8	<i>Current financial liabilities</i>	9.6	10.8
<i>Other</i>	5.5	5.7	<i>Trade payables</i>	8.7	7.6
<i>Cash</i>	4.5	10.7	<i>Other, sundry liabilities</i>	10.6	10.1
TOTAL ASSETS	122.4	119.2	TOTAL LIABILITIES	122.4	119.2

Balance sheet at June 30, 2018



ASSETS €m	Jun 30, 2018	Dec 31, 2017	LIABILITIES €m	Jun 30, 2018	Dec 31, 2017
Current assets	52.0	51.8	Current liabilities	28.9	28.5
Cash	4.5	10.7	Current financial liabilities	9.6	10.8
Trade receivables	17.7	15.8	Trade payables	8.7	7.6
Inventories	24.3	19.6	Other, sundry liabilities	10.6	10.1
Other	5.5	5.7			
Non-current assets	70.4	67.4	Non-current liabilities	14.8	14.9
Goodwill	32.6	32.6	Other non-current financial liabilities	9.3	9.9
Intangible assets	17.5	16.6	Non-current financial liabilities	5.6	5.0
Property, plant and equipment	8.2	6.1			
Other non-current assets	12.1	12.1	Shareholders' equity	78.7	75.8
TOTAL ASSETS	122.4	119.2	TOTAL LIABILITIES	122.4	119.2

Cash-flow statement

€m	Change June 2018
Cash-flow from operations (before financial expenses and tax)	6.4
Change in working capital	-5.0
Taxes paid	0.0
Operating cash-flow	1.5
Net cash-flow from industrial capex	-5.6
Financial investments (incl. external growth)	-0.1
Capex-related cash-flow	-5.7
Balance before financing	-4.2
Dividends / treasury shares	0.0
Bank interest paid	-0.4
Impact of capital from borrowings (receipts / payments)	-1.3
Financing cash-flow	-1.7
TOTAL CASH-FLOW	-5.9
Cash at period-start (net of bank borrowings)	4.2
Cash at period-end (net of bank borrowings)	-1.7

Inventories	Dec 31, 2107	Jun 30, 2018	Change
Raw materials	10	11.6	1.6
Goods	4.9	5	0.1
Work in progress	1.5	3.2	1.7
Finished products	3.2	4.5	1.3
Total inventories	19.6	24.3	4.7

Industrial capex	
QUANTEL MEDICAL building	1.9
Technical facilities	0.6
R&D	2.5
Other	0.6
Total industrial capex	5.6



Healthy financial position

€m	Jun 30, 2018
Debt from credit institutions	11.7
Finance leases and financing	1.1
CIR(1) and CICE(2) financing	2.7
Bank borrowings	3.4
MIKADO bond debt	-
Total financial liabilities and borrowings	18.9
Cash assets	(4,4)
Total net debt	14.5
Shareholders' equity	78.7
<i>Gearing</i>	<i>18.6%</i>
<i>Net leverage ratio</i>	<i>1.06</i>

(1) CIR: research tax credit / (2) CICE: tax credit for employment and competitiveness



OUTLOOK:
GROWTH ON
OUR KEY MARKETS
AND IMPROVED MARGINS

Organization sized for growth and developing synergies

Revenue synergies

- Pooling clients and sales networks
- Rolling out a vertical integration strategy
- Achieving critical mass to access larger markets

Operational synergies

- Improving industrial processes
- Merging the sales teams
- Pooling support services

Financial synergies

- Improving the financial structure
- Optimizing R&D and industrial investment programs



Defense / Space



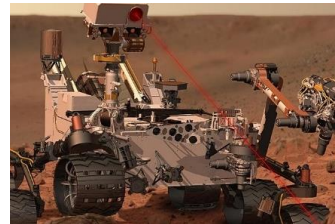
Market: €1,000m*

Growth driven by major contracts

- Megajoule: 4th tranche over 3 to 4 years, before the start of the long-term maintenance phase
- Military contracts underway

Market share gains in Europe

- Enabling European manufacturers to free themselves up from dependence outside the EU for certain key components (e.g. high-energy guiding lasers)



Become a leader for defense optronics in Europe



LiDAR: strategic positions on hyper-growth markets

Markets: €1,000m*



Buoyant positioning in the wind energy and mapping sectors

- 30% of LiDAR revenues in 2018
- 80% market share for wind energy sensors
- Order visibility over 24 months

Recognized technological lead in the autonomous vehicles sector

- 70% of LiDAR revenues in 2018
- Advanced qualification phase with major global operators (OEMs, GAFA, startups)
- Order visibility over 12 months

Superiority of Lumibird's fiber LiDARs for the auto industry

- Range 10 times larger than diode LiDARs
- Better eye safety
- Beam quality



Medical: dynamic innovation and opening up new markets



Market: €1,000m*

5 new products launched in 2018

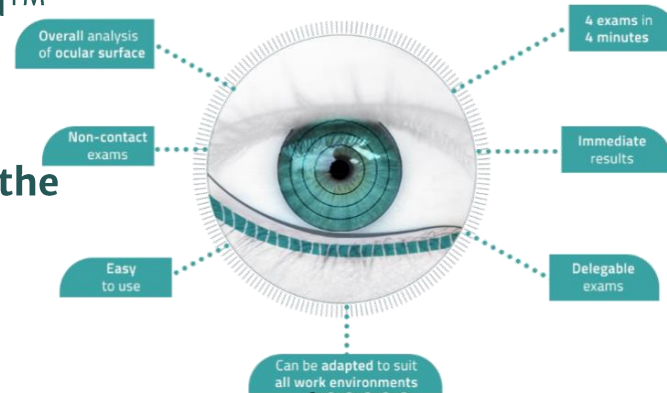
- Laser: VITRA 810™, SubCyclo®
- Ultrasound scans: Compact Touch 2™, ABSolu™
- Dry eye diagnosis: new market entered with Lacrydiag™

Diversification outside of ophthalmology with the acquisition of ECM

- Sport, hospital and general medicine

Geographic expansion

- New approvals obtained in the US and Japan
- Development of the sales teams



Drivers for improving margins

- 1 Vertical integration**
Internalize the margin on strategic components through the integration of new technological components
- 2 Industrialization**
Have less than 10 generic platforms to cover over 500 finished products
- 3 Increased percentage of direct sales**
Exceed 80% of direct sales, compared with 60% today, by further strengthening the commercial structure
- 4 Scale effect**
Optimize procurement and pool fixed costs



3-year strategic objectives

Maintain strong growth

- Capitalizing on the key positions held on the LiDAR and Medical markets
- Gaining Defense market shares for increased technological independence from the Europe of Defense
- Making targeted acquisitions to strengthen critical mass and address new markets

Increase profitability

- Capitalizing on the 4 drivers for improving margins

€150m

2021 target

> 20%

EBITDA margin
in 2021



5 reasons to invest in Lumibird



1

Longstanding operator with a product leadership positioning

2

Diverse target markets of over €1bn each

3

Tech firm backed by a convincing industrial strategy

4

Outstanding prospects for growth and major drivers for improving margins

5

Opportunities for consolidation and a track record of successful external growth operations