

MARKET OVERVIEW AND M&A ACTIVITY

Machine vision

May 2023

M&A advisory experts for smart technologies

Internet of Things | Industrial Automation | Sensors | Artificial intelligence

Oaklins is your trusted M&A advisor for transactions in the field of machine vision

- We have been active as an experienced M&A advisor for selling and acquiring companies in the sector of machine vision for several years
- We advised on various business models in the field of machine vision – e.g. system integrators, software developers, manufacturer of optics and other hardware
- We provide personal advice when it comes to successions, divestments, acquisitions and growth financing
- Based on numerous transactions we have excellent relationships with major market players
- Thanks to our industry experts around the globe, we deliver high-quality M&A advisory across borders



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Dedication and passion for high performance

CIM.AS
has been acquired by
XANO
M&A SELL-SIDE
Private Equity/TMT

GRAZPER
has been acquired by
YOKOGAWA
M&A SELL-SIDE
TMT

magellium
has sold a majority stake to
artal
M&A SELL-SIDE
Aerospace, Defense & Security/Industrial Machinery & Components/TMT

unica
samen maken we de toekomst
has acquired
GA R&C
M&A BUY-SIDE
Business Support Services/Construction & Engineering Services/Private Equity/TMT

gA
has been acquired by
Globant
M&A SELL-SIDE
TMT

Sensera
has acquired
nanotron
M&A BUY-SIDE
TMT

RAP International
has been acquired by
YOKOGAWA
M&A SELL-SIDE
TMT

MDSL
has been sold to
SEP SUMERU EQUITY PARTNERS
M&A SELL-SIDE
Private Equity/TMT

S3K
has sold a 50% stake to
HLD
M&A SELL-SIDE
Private Equity/TMT

Executive summary

M&A activity and valuation



1

Machine vision is a key element to accelerate industrial automation and therefore important for both major global players to enrich their portfolios and for niche players to stay at the technological forefront



2

M&A activity has a high cross-border percentage and with attractive transaction multiples of 2.1x EV/Sales and 13.5x EV/EBITDA



3

Niche markets offer a sustained competitive advantage with high margin possibilities and hence attractive add-on acquisitions



4

The complementary expertise for optoelectronics and AI-algorithms divide suppliers into holistic and pure hard- or software solution provider



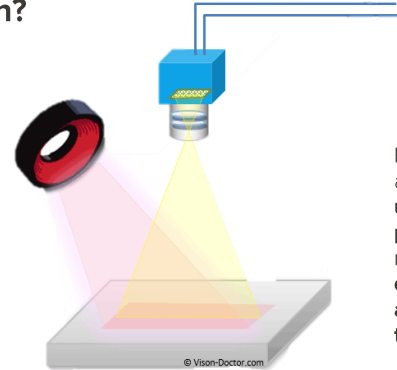
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Buyers seek mainly machine vision software expertise to advance into new markets and leverage their existing products

What is machine vision?



Machine vision **combines hardware** (electronical, mechanical, optical) and **software** to **improve quality** and **operational efficiency** in major industries like semiconductors, pharma, automotive, electronics et al



Being a key element for smart automation, machine vision is **used to automate production processes** by replacing manual inspections with **digital cameras** and **advanced image processing technologies**



Together with the underlying technologies **IoT, AI** and **machine learning** it forms a **digital manufacturing ecosystem** with significant **gains of speed, flexibility and quality**

Trends

- Rising pressure to **optimize resources** and **reduce costs** leads to higher adoption rates of smart automation solutions
- The **connection of OT and IT layers** within companies along the value chain is necessary to deal with the rising complexity

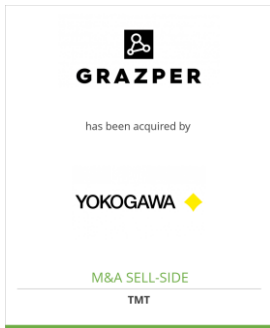
Benefits

- The interplay of hardware products and software solutions enable process automations and **additional business models**
- Machine vision is able to significantly **reduce maintenance** and **personnel costs** and **increase output**

Challenges

- Market participants show a **lack of awareness** and benefits of machine vision systems
- **Regulations** regarding data storage in a cloud, cyber security and product quality control

A crisp AI vision driving expansion - Grazper sold to Yokogawa



Grazper Technologies was founded in 2015 and has advanced into an artificial intelligence (AI) software development power-house based in Copenhagen, Denmark, with highly motivated engineers, software developers and computer scientists. Grazper has developed a platform to build full stack proprietary real-time 3D vision solutions using embedded AI.

The platform can support networks of installed cameras and embed intellectual property into edge devices for intelligent machine vision. The solution, in its current form, facilitates automatic monitoring of cars, cyclists or pedestrians, with the purpose of smoothing traffic flow or creating automated behavioral customer analysis in super-

markets – using cameras that stream video directly to an external location for manual or automatic analysis.

Founded in 1915, **Yokogawa** is a leading provider of industrial automation and test and measurement solutions. Combining superior technology with engineering services, project management, and maintenance, Yokogawa delivers field proven operational efficiency, safety, quality, and reliability. The industrial automation business provides vital products, services and solutions to a diverse range of industries, including oil, chemicals, natural gas, power, iron and steel, and pulp and paper. With its innovation business, the company also aims to radically improve productivity across the pharmaceutical and food industry value chains.

“Before presented by Oaklins, we didn’t know Yokogawa with their impressive track-record and strategic ambition to enter the AI field. Becoming a center of excellence for their global operations from our Copenhagen base is very appealing to us, and if it hadn’t been for Oaklins’ global access and seamless execution, we wouldn’t have been in this extremely exciting situation.”

THOMAS JAKOBSEN – CEO & CO-FOUNDER, GRAZPER

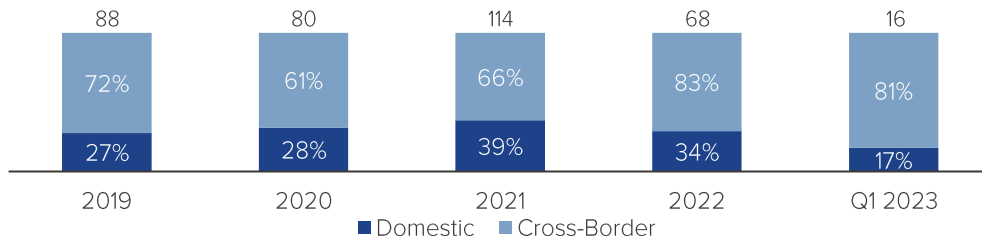


Strategic buyers dominate the M&A landscape

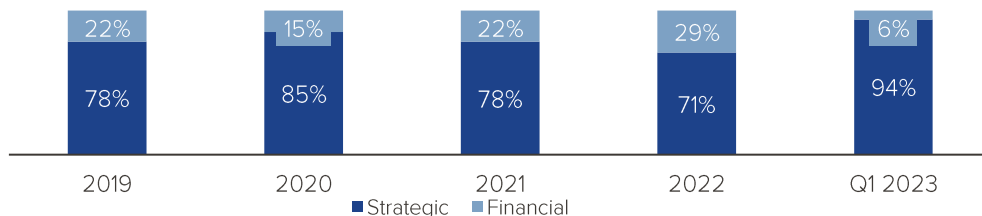
- Most targets are based in Germany, followed by the US, France, the UK and the Netherlands
- Most of the acquirors are headquartered in the US, followed by Germany, the UK and Sweden
- Next to Germany and the US, the Netherlands and Scandinavia are major innovation hubs for industrial automation and machine vision
- M&A activity is dominated by strategic players, that execute inorganic growth strategies, implement external know-how, create product synergies and increase their market share nationally and internationally
- The median of the EV/Sales multiple is 2.1x and includes 37 transactions since 2019, while the median of the EV/EBITDA multiple is 13.5x, including 22 transactions
- The multiple range reflects the 25th and 75th quartile of past transactions

M&A activity between 2018 and Q1 2023

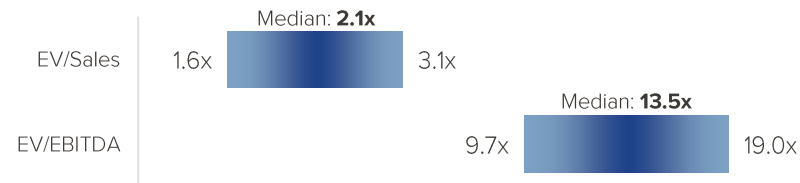
Domestic vs. cross-border transactions



Strategic vs. financial buyers



Transaction multiples (2019 – Q1 2023)



How TKH and Antares Vision play the consolidation game

- 90% of the machine vision companies have annual sales smaller than €10m and face despite their innovation capabilities similar size-related issues
- TKH Vision has a strong market position in the manufacturing of machine vision equipment and industrial applications
- Antares Vision is a leader in machine vision solutions in the pharma industry and serves most large food & beverage enterprises
- By creating a group of highly complementary companies via add-on acquisitions TKH and Antares Vision strive for global leadership in the field of machine vision
- Both companies show similar patterns in their acquisition strategy:
 - Acquired companies generally continue to operate autonomous under their previous brands
 - Targets are being acquired both regionally and globally
 - Transactions create synergies and enable the groups to offer integrated end-to-end solutions

Note: *Acquired by Lakesight when they were owned by the Italian private equity investor Ambianta
Sources: Mergermarket, Oaklins research

The global track record of two M&A power houses in the field machine vision



Acquisitions	Rationale	Acquisitions	Rationale
nerian VISION (F&E) SYSTEMS	Smart Vision systems for 3D capabilities of the Group	pygsaGROUP	Inspection and control system for bottling and packing companies
eye 3D-VISION	High-end cameras and components for machine vision applications	wavisio	Automated inspection solutions for the pharmaceutical industry
Allied Vision	Digital cameras for industrial automation, medical applications and traffic	acsis A.O. OF CAM	Enterprise data collection software for supply chain management
LMI TECHNOLOGIES	3D sensors for accurate measuring and scanning in industrial quality control	PEN-TEC	Inspection systems for the food and beverage industry
net VISION	Compact and smart camera solutions for industrial and medical applications	RFXCCEL ANTARES VISION GROUP	Tracking software for the pharma industry and other supply chains
LAKESIGHT	Machine vision platform with industrial and traffic solutions	APPLIED VISION ANTARES VISION GROUP	Inspection systems for the food and beverage industry
chromasens [®] IMAGING FOR PROFESSIONALS	Line scan and image capturing in 2D and 3D as well as and LED light sources	ADENTS	Tracking software for the pharma industry
MIKROTRON [®] High-Speed Vision Solutions	High speed camera systems for industrial inspections	CONVEL ANTARES VISION GROUP	Inspection systems for the pharma industry
Tattile [®] ANTARES VISION GROUP	Vision systems for industrial quality control, traffic and public transport	TRADETCITY ANTARES VISION GROUP	Tracking software for the pharma industry
		OROBIX THE FINAL VISION	a.o. AI-based visual inspection software
		FT SYSTEM ANTARES VISION GROUP	Inspection and control devices for bottling and packaging
		T2 Software	Supply chain data management for the pharma industry
		IMAGO TECHNOLOGIES	Vision technology manufacturer for machine vision systems

Motives of strategic acquirors

- 1  Insourcing of expertise for established technology and automation companies
- 2  Enrichment of the product portfolio through complementary technologies
- 3  Access to new end markets with different applications
- 4  Use of cross-border deals to enhance regional market shares

Selected transactions with strategic investors (1/2)

Date	Target	HQ	Deal description	Buyer	HQ
Dec 2022			Duravant LLC has acquired Multiscan Technologies, a manufacturer of machine vision solutions for the food processing industry.		
Nov 2022			Photonis France SAS has acquired Xenics nv, a provider of infrared imagers and cameras. Xenics complements the groups capabilities with infrared solutions and creates a European integrated leader in advanced imaging solutions .		
Oct 2022			Panacea Technologies Inc. has acquired 50% of VistaLink NV, a provider of industrial image processing services .		
July 2022			TKH Group NV has acquired Nerian Vision GmbH, a disruptive stereo machine vision company. Nerian designs and manufactures high-speed stereo vision cameras and complements TKH's solution portfolio with 3D capabilities .		
Apr 2022			Optimal Industrial Automation and Technologies, a provider of industrial automation system solutions including machine vision systems, has been acquired by the listed company Bruker Corporation to strengthen software and biopharma manufacturing automation capabilities .		
Jan 2022			ei3 Corporation, a provider for industrial automation and IoT has acquired the developer of advanced AI-driven software solutions for industrial manufacturing .		
Jan 2022			MOBOTIX AG, a manufacturer of video surveillance using innovative camera technology, acquired Vaxtor Recognition Technologies Ltd., a specialist for automatic license plate and optical character recognition for different road traffic application scenarios.		
Jan 2022			The conglomerate Johnson Controls International plc, which provides technology for buildings and manufacturing, has acquired the AI software developer FogHorn Systems.		
Oct 2021			IAR Group Holding AG, an industrial automation and robotics specialist was founded with the acquisition of three companies including Automation Specialist Services LLC. Automation Specialist Services offers among others testing machines that use machine vision for 3D measuring.		

Motives of strategic acquirors

“The Datalogic Group continues to focus on the Manufacturing sector which is characterized by high margins and excellent growth prospects in the high value-added segments of the so-called Industry 4.0.”

Dr. Valentina Volta, CEO of Datalogic

“Customers and users will benefit from the further integration of the software and hardware solutions from ZEISS and arivis.”

Dr. Michael Albiez, Head of ZEISS Research Microscopy Solutions

“These solutions will provide a simple, out-of-box experience [...] that enables maximum visibility and the rapid transformation of image capture into actionable business information.”

Donato Montanari, VP at Zebra Technologies

Selected transactions with strategic investors (2/2)

Date	Target	HQ	Deal description	Buyer	HQ
Aug 2021	 PINJA (Pinja Industry, Pinja China)		AF Poyry AB, an engineering, design and technical advisory company, acquired Pinja Industry Oy and Pinja China. The companies have a strong expertise in automation and machine vision solutions for testing and quality assurance.	 AFRY AF POYRY	
Aug 2021	 TPL VISION Active LED solutions		wenglor sensoric GmbH, a developer of sensor and image processing systems, acquired the producer of LED lighting for industrial automation applications TPL Vision UK to strengthen its machine vision division.	 wenglor The Innovative Family	
June 2021	 pco.		Excelitas Technologies Corp., a provider of optoelectronics and photonic solutions acquired PCO AG a manufacturer of image-intensified and high-speed cameras for applications in physics, life sciences and machine vision systems in the industry.	 EXCELITAS TECHNOLOGIES	
May 2021	 PEN-TEC		FT System S.r.l., a manufacturer of machine vision inspection devices for bottling and packaging, acquired the competitor Pen-Tec Srl. The company is also a provider of inspection solutions, focused on quality control systems for the food & beverage industry.	 FT SYSTEM ANTARES VISION GROUP	
Feb 2021	 MD Micro Detectors Italian Sensors Technology		Datalogic SRL, a company focused on data acquisition and industrial automation, acquired the sensor producer M. D. Micro Detectors Spa. The company manufactures photoelectronic, inductive and ultrasonic sensors for applications in machine vision , electronics, pharmaceuticals and logistics.	 DATALOGIC ANTARES VISION GROUP	
Jan 2021	 iSAM GRUPO		Hamburger Hafen und Logistik AG, a logistics company known for a strong technical background, acquired iSAM AG. iSAM is a provider of industrial automation concepts including sensor technology and image processing for unit tracking, high-speed monitoring and precision geometric measuring.	 HHLA	
Jan 2021	 kobi		Robert Bosch GmbH, the technology conglomerate, acquired the AI and robotics developer The Kobi Company. Their lawn mowing robot Kobi uses vision technology for navigation, adapting to changes in the environment and the interaction with humans and animals.	 BOSCH	
Dec 2020	 APPLIED VISION ANTARES VISION GROUP		Antares Vision SpA, a pharma focused provider of inspection systems acquired Applied Vision Corporation. The company is an experienced provider of machine vision solutions and a word leader in metal container inspection in the food & beverage industry.	 ANTARES VISION ANTARES VISION GROUP	
Dec 2020	 arivis		Carl Zeiss AG, a tech corporation focused on precision mechanics and optics, acquired imaging software developer arivis AG. The company provides image science solutions like 3D image processing, visualization and analysis to researchers and enterprises in life sciences.	 ZEISS	

Motives of financial investors



1

Sustainable market growth with reliable cash flows



2

Growth potential underpinned by high fragmentation and common separation of hard- and software expertise



3

Accelerate a company's revenue growth and develop the company for the next growth phase



4

Initiate global brand expansion with PE's expertise and know-how

Selected transactions with financial investors (1/2)

Date	Target	HQ	Deal description	Buyer	HQ
Jan 2023			Avedon Capital Partners has acquired Kind Technologies, a group of companies that develops, builds and sells machine vision solutions , for an undisclosed price.		
Nov 2022			Triton has acquired Hans Turck GmbH & Co. KG for an EV of €134m. Turck is a manufacturer of industrial automation products including machine vision systems.		
Oct 2022			Water Street Healthcare Partners LLC has acquired Crest Solutions, a provider of industrial image processing solutions . The investment is used to further expand the new platform's global footprint in the life sciences industry.		
Sep 2022			Prosperity7 Ventures has acquired Prophesee SA, a developer of vision sensors and computer vision solutions for the automotive segment for €50m.		
Aug 2022			DPE Deutsche Private Equity GmbH has acquired Sill Optics GmbH & Co. KG via a secondary buy-out from PINOVA Capital. Sill Optics is a manufacturer of laser optics, imaging optics and custom optics .		
Jan 2022			Arsenal Capital Partner, L.P. backed a management buyout of Headwall Photonics, Inc., a provider of readymade hyperspectral imaging systems for applications in the industry, in defense and in medical technology.		
Jul 2021			Groupe HLD has acquired the optics specialist PHOTONIS France SAS. The company is a producer of electro-optical components and high-precision sensors, which are also used for machine vision systems .		
Jul 2021			VR Equitypartner GmbH has invested a minority stake of DILAX Intelcom GmbH. The company is engaged in the development of automated people counting systems for public transportation and other urban monitoring applications.		
Jul 2021			The Carlyle Group and Raiffeisen KMU Beteiligungs AG acquired AGILOX Systems GmbH, a provider of AI-based, self-driving logistics robots for intralogistics and material handling.	 	 

Motives of financial investors

“Helmee’s industrial implementation of a novel imaging technique, coupled with their [...] market potential in multiple verticals secured our conviction of the team.”

Myron Seto, Partner at Innovestor

“Through significant investment in R&D, we have positioned our company as a technology leader and we have acquired major customer references in a number of markets.”

Thierry Campos, CEO of HGH Systems

“Machine vision is at the core of our Smart Industries-focus. It plays a crucial role in industry 4.0 to improve efficiency, automate and increase quality.”

Nick Medaer, Partner at Gimv

Selected transactions with financial investors (2/2)

Date	Target	HQ	Deal description	Buyer	HQ
May 2021			CIM Industrial Systems A/S , an advanced automation software solutions provider, has been acquired by the XANO Industri AB. The acquisition offers product synergies by complementing the existing automation operations and by adding technical software expertise .		
Feb 2021			Three financial investors agreed to invest a minority stake of Berkshire Grey, Inc. The company is a provider of AI-enabled robotic solutions using vision technology to recognize, locate and grab objects in retail, E-commerce and logistics applications.		
Nov 2020			The investment firm Athanase Industrial Partners II AB acquired a majority stake in the machine vision systems provider IVISYS AB. The company offers automated inspection solutions for industrial applications, combining expertise in the fields of image processing as well as light and sensors.		
Sep 2020			VR Equitypartner GmbH announced the acquisition of a significant minority stake in aku.automation GmbH. The company is specialized on the development and integration of image processing systems for industrial quality assurance and process control.		
Aug 2020			PINOVA Capital GmbH, a technology focused PE firm acquired a majority of AT – Automation Technology GmbH, a company developing and producing camera sensors for industrial automation solutions.		
April 2020			EDBI Pte Ltd, the PE arm of the Singapore Economic Development Board has invested in Screening Eagle Technologies AG. The company offers a solution for the inspection of buildings and infrastructure using AI-based vision software and portable sensors .		
Sep 2019			PINOVA Capital GmbH has acquired Sill Optics GmbH & Co. KG, a manufacturer of optical lenses for applications in machine vision , laser processing, optical measurement and medical technology.		
Jul 2019			The PE firm Axel Management A/S has acquired the majority of imaging specialist Phase One A/S. The company consists of a division for image processing software and a division supplying camera systems for industrial applications and photographers.		
Jan 2019			Storskogen Group AB acquired the industrial automation specialist Elektroautomatik i Sverige AB. Among others the company offers vision system solutions for quality assurance, unit tracking and robotic applications in the industrial environment.		

Valuation of listed peers active in the machine vision market

Machine vision systems

- The deeper integration along the value creation chain makes providers of turn-key machine vision systems more resilient
- Leading players trade for larger premiums

Machine vision software

- Software developers show high growth expectations
- The vast majority of companies in this subsector is not profitable yet

Optics & hardware

- Optics and hardware producers represent the subsector with the lowest growth forecasts
- Fluctuations in raw material prices lead to a comparatively high volatility in profits

Tech conglomerates

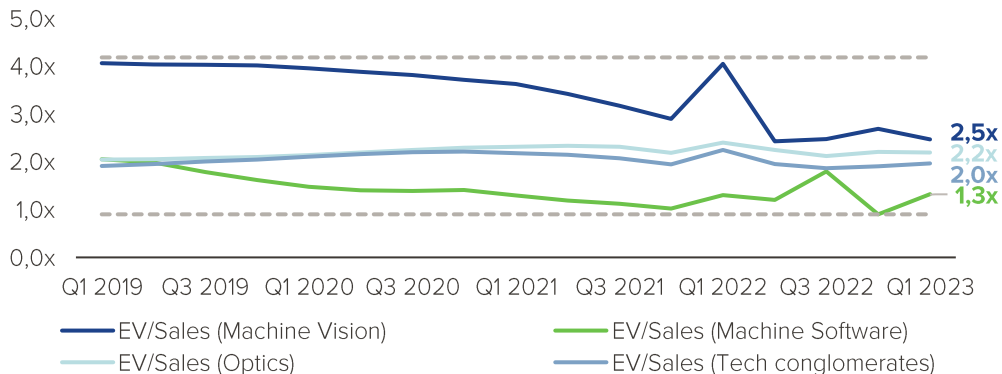
- In large technology companies, machine vision solutions make up for only a fraction of the product portfolio
- Due a broader diversification and leadership positions in different markets they show strong EBITDA margins and revenue growth

Note: MV software is excluded from the EBITDA multiple analysis due to largely negative EBITDAs in the peer group

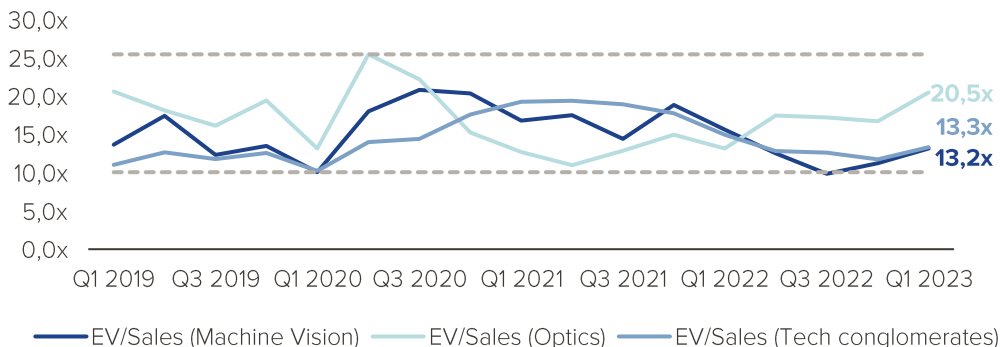
Sources: Capital IQ as of Q1 2023

Mid-term valuation trends for several peer groups

Valuation of comparable companies as of Q1 2023* (TEV/Sales LTM)










Valuation of comparable companies as of Q1 2023* (TEV/EBITDA LTM)









*Valuation has been adjusted for outliers and subsegment machine software has been removed as multiples are NM







Machine vision systems – valuation and operating metrics

					Trading metrics						Operating metrics								
					EV/Revenue			EV/EBITDA			Revenue growth			Gross margin			EBITDA margin		
Company name	HQ	Market cap (in €m)	Total debt (in €m)	EV (in €m)	CY20A	CY21A	CY22A	CY20A	CY21A	CY22A	CY20A	CY21A	CY22A	CY20A	CY21	CY22A	CY20A	CY21A	CY22A
Antares Vision S.p.A.		424.9	151.5	488.5	5.1x	3.5x	3.3x	27.8x	20.3x	28.7x	-0.6%	47.5%	25.7%	81.0%	80.9%	81.0%	20.6%	15.2%	20.7%
Basler Aktiengesellschaft		699.6	68.2	739.1	6.3x	4.9x	3.7x	31.1x	23.9x	27.6x	5.2%	NA	25.2%	52.0%	NA	50.4%	14.4%	15.5%	18.9%
Cognex Corporation		7,618.9	37.2	7,290.1	15.5x	12.1x	7.5x	52.3x	36.7x	24.8x	11.8%	27.9%	-2.5%	74.5%	73.3%	71.8%	28.7%	32.3%	29.0%
Machvision Inc.		254.0	7.9	209.3	3.4x	3.0x	1.9x	9.1x	7.5x	5.5x	-5.7%	14.7%	NA	63.4%	61.6%	56.5%	37.2%	39.8%	31.7%
Nsys Co., Ltd.		102.3	8.0	97.0	5.6x	5.2x	2.7x	26.3x	38.8x	14.0x	14.1%	17.3%	25.8%	32.6%	29.8%	29.8%	21.3%	18.9%	17.2%
Stemmer Imaging AG		273.0	3.5	234.9	1.7x	1.5x	1.2x	22.8x	11.4x	7.6x	-14.4%	26.1%	18.4%	37.5%	38.7%	37.9%	6.0%	12.6%	16.9%
Viscom AG		83.5	35.4	115.2	2.0x	1.5x	1.2x	NM	18.0x	14.3x	-30.5%	29.6%	22.3%	58.8%	63.2%	NA	-8.8%	4.7%	5.9%
Mean		1,350.9	44.5	1,310.6	5.7x	4.5x	3.1x	28.2x	22.4x	17.5x	-2.9%	27.2%	19.2%	57.1%	57.9%	54.6%	17.1%	19.9%	20.0%
Median		273.0	35.4	234.9	5.1x	3.5x	2.7x	27.1x	20.3x	14.3x	-0.6%	27.0%	23.8%	58.8%	62.4%	53.5%	20.6%	15.5%	18.9%





Machine vision software – valuation and operating metrics

					Trading metrics						Operating metrics								
					EV/Revenue			EV/EBITDA			Revenue growth			Gross margin			EBITDA margin		
Company name	HQ	Market cap (in €m)	Total debt (in €m)	EV (in €m)	CY20A	CY21A	CY22A	CY20A	CY21A	CY22A	CY20A	CY21A	CY22A	CY20A	CY21	CY22A	CY20A	CY21A	CY22A
Ambarella, Inc.		2,567.2	8.0	2,386.3	12.9x	23.2x	6.8x	NM	NM	NM	0.4%	-2.5%	13.4%	58.0%	60.8%	62.9%	-19.2%	-25.0%	-14.4%
Anoto Group AB		8.0	6.5	12.5	2.2x	2.3x	1.8x	NM	NM	NM	-37.0%	1.7%	15.3%	54.1%	56.4%	62.3%	-112.7%	-58.7%	-62.3%
Himax Technologies, Inc.		1,254.9	389.1	1,425.7	2.2x	1.3x	0.8x	24.1x	3.4x	2.4x	32.1%	74.4%	-24.6%	24.9%	48.4%	41.3%	8.8%	36.3%	23.8%
Morpho, Inc.		38.4	-	18.1	0.8x	0.9x	0.9x	NM	NM	NM	-20.5%	-16.5%	15.3%	69.3%	50.1%	47.7%	-0.3%	-43.5%	-23.0%
OMNIQ Corp.		31.4	15.2	45.1	1.1x	0.8x	0.6x	NM	NM	NM	-3.5%	41.7%	33.9%	19.8%	28.2%	23.2%	-12.1%	-9.0%	-6.0%
Smart Eye AB		151.1	5.6	151.1	24.8x	23.2x	6.0x	NM	NM	NM	-19.3%	68.5%	100.6%	88.4%	88.7%	86.0%	-114.7%	-85.6%	-84.8%
Mean		675.2	70.7	673.1	7.3x	8.6x	2.8x	24.1x	3.4x	2.4x	-8.0%	25.1%	25.7%	52.4%	55.4%	53.9%	-41.7%	-30.9%	-27.8%
Median		94.8	7.2	98.1	2.2x	1.8x	1.4x	24.1x	3.4x	2.4x	-11.4%	1.7%	15.3%	56.1%	53.2%	55.0%	-15.7%	-34.2%	-18.7%

Optics & hardware – valuation and operating metrics

					Trading metrics						Operating metrics								
					EV/Revenue			EV/EBITDA			Revenue growth			Gross margin			EBITDA margin		
Company name	HQ	Market cap (in €m)	Total debt (in €m)	EV (in €m)	CY20A	CY21A	CY22A	CY20A	CY21A	CY22A	CY20A	CY21A	CY22A	CY20A	CY21	CY22A	CY20A	CY21A	CY22A
Fujian Forecam Optics Co., Ltd.		520.5	84.3	543.5	6.1x	5.3x	4.8x	82.9x	43.8x	41.8x	1.3%	14.8%	2.5%	25.5%	24.6%	23.2%	12.1%	12.6%	10.2%
Jenoptik AG		1,712.6	536.8	2,202.9	2.6x	2.3x	2.1x	15.6x	15.0x	12.2x	-28.0%	22.0%	27.2%	36.5%	34.2%	35.1%	18.2%	16.2%	18.1%
LightPath Technologies, Inc.		46.5	12.9	55.6	1.8x	1.6x	1.2x	10.6x	26.6x	39.0x	3.6%	10.0%	-11.1%	39.6%	35.0%	32.1%	15.6%	4.4%	0.2%
NextEye Co., Ltd.		26.2	12.9	10.4	1.9x	2.3x	0.7x	1.4x	NM	NM	-38.0%	-17.5%	40.9%	17.3%	12.5%	20.0%	-33.1%	-55.4%	-45.7%
Novanta Inc.		4,976.9	457.9	5,332.1	9.4x	7.9x	6.5x	51.8x	39.8x	32.2x	-5.7%	19.7%	21.4%	41.4%	43.2%	45.2%	16.6%	18.4%	22.9%
Young Optics Inc.		299.6	38.2	296.0	2.5x	2.1x	1.9x	96.0x	26.8x	22.9x	-19.0%	16.8%	17.7%	18.2%	17.2%	18.0%	1.4%	7.0%	7.3%
Mean		1,263.7	190.5	1,406.7	4.1x	3.6x	2.9x	43.1x	30.4x	29.6x	-14.3%	11.0%	16.4%	29.8%	27.8%	28.9%	5.1%	0.5%	2.2%
Median		410.0	61.3	419.7	2.6x	2.3x	2.0x	33.7x	26.8x	32.2x	-12.3%	15.8%	19.6%	31.0%	29.4%	27.7%	13.9%	9.8%	8.8%

Technology conglomerates – valuation and operating metrics

					Trading metrics						Operating metrics								
					EV/Revenue			EV/EBITDA			Revenue growth			Gross margin			EBITDA margin		
Company name	HQ	Market cap (in €m)	Total debt (in €m)	EV (in €m)	CY20A	CY21A	CY22A	CY20A	CY21A	CY22A	CY20A	CY21A	CY22A	CY20A	CY21	CY22A	CY20A	CY21A	CY22A
ABB Ltd		57,997.0	8,329.6	62,190.2	2.6x	2.4x	2.0x	22.9x	14.2x	12.9x	-6.6%	10.8%	0.9%	30.7%	33.0%	33.0%	10.2%	15.9%	14.5%
OMRON Corporation		10,409.7	268.6	10,083.9	2.6x	1.9x	1.6x	16.4x	15.0x	12.3x	-7.5%	-3.3%	10.0%	44.8%	45.5%	44.8%	11.7%	12.5%	13.8%
Siemens Aktiengesellschaft		116,948.1	49,243.0	161,567.1	2.2x	2.3x	2.0x	15.4x	15.8x	16.5x	-5.5%	12.7%	15.6%	36.0%	36.5%	35.9%	11.9%	13.8%	13.8%
TKH Group N.V.		1,943.4	573.4	2,332.5	1.8x	1.6x	1.1x	15.4x	11.3x	7.8x	-13.4%	18.2%	15.8%	49.2%	48.3%	48.2%	11.0%	12.7%	14.8%
Mean		46,824.5	14,603.7	59,043.4	2.3x	2.1x	1.7x	17.5x	14.1x	12.4x	-8.3%	9.6%	10.6%	40.2%	40.8%	40.5%	11.2%	13.7%	14.2%
Median		34,203.3	4,451.5	36,137.1	2.4x	2.1x	1.8x	15.9x	14.6x	12.6x	-7.0%	11.7%	12.8%	40.4%	41.0%	40.4%	11.3%	13.2%	14.2%



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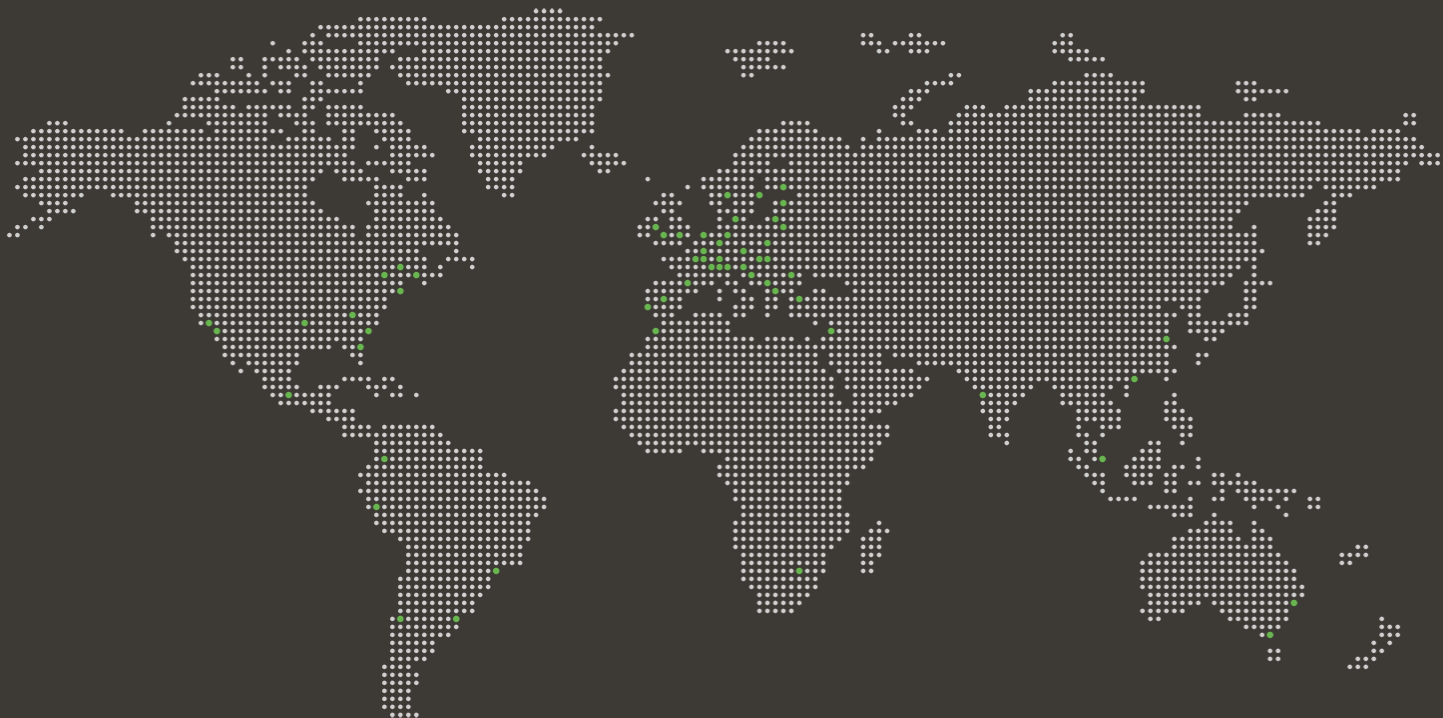
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