

VIGO System

Photonic innovation

VIGO System is a producer of photonic mid-infrared detectors. The global market for infrared sources is undergoing dynamic development, with a CAGR of 17.1% in 2018-22E, as reported by Yole Développement (Research company). According to VIGO's board, the firm holds a share of roughly 30% of the global market for photonic mid-infrared detectors. Also, VIGO is currently undergoing a major transformation through extending its production capacity and reducing its production cost per unit. These investments should translate into a revenues CAGR of 24% in 2018-21E and net income CAGR of 23% in 2018-21E. On our estimates, VIGO System trades at a P/E ratio of 17.6x for 2019 and 14.1x for 2020, implying a discount of 33% and 37% to foreign peers. We therefore initiate our coverage of VIGO with a BUY recommendation and set our FV at PLN 380.0 per share, which implies 15.2% upside.

Main growth drivers are increased production capacity and new clients

VIGO's revenues grew at a CAGR of 14% in 2015-18 to reach PLN 37m in 2018. We expect the CAGR of revenues to accelerate to 24% in the period 2018-21E due to: 1) higher production capacity (once production starts at the new facility); 2) the acquisition of new clients; 3) and the development of new products, namely photonics materials. The main drivers of the firm's revenues growth in our opinion are likely to be the military segment, the industrial segment (i.e. new clients involved in the production of semiconductors or varnish thickness measurements, as well as German producer of industrial devices), and the transport segment (new and current clients).

We estimate net income at a CAGR of 23% in 2018-21E.

VIGO's net income grew by 11% per year on average in 2015-18, with an average net profit margin of 36% in the period. The firm's dynamic growth generated operating costs of PLN 26.8m (up 46% y/y) in 2018. These costs were the result of expansion of the production team and growth in material costs due to higher production volumes. We expect the firm's net margin to decrease further to 30% in 2019-2020E, due to growth in D&A after the completion of the new investment. We believe a gradual increase in net margin is possible from 2021 onwards. Even so, we expect VIGO's net income to post a CAGR of 23% in 2018-21E, due to a significant expansion in revenues.

New products create the potential for a pleasant surprise

In June 2018, VIGO actualized its strategy and announced two new areas of activity: quantum cascade lasers (QCL) and semiconductor materials for photonics. The firm has initiated the production of materials for photonics and expects this to potentially generate PLN 40m revenues from 2023 onwards. This segment is currently in its early stages, hence we conservatively estimate revenues of only PLN 8m in 2023E. Our forecasts could seem overly cautious if the project turns out to be a success.

Figure 1: Summary of Financial Data

	2016	2017	2018	2019E	2020E	2021E
Revenues (PLN m)	25.6	27.2	37.4	45.0	57.6	70.8
EBITDA (PLN m)	12.0	12.6	16.2	19.4	27.4	35.5
EBIT (PLN m)	9.9	9.8	12.8	14.4	18.0	25.0
Net profit (PLN m)	10.0	9.5	13.0	13.7	17.0	24.1
EV/EBITDA (x)	19.1	18.2	15.1	14.1	9.7	7.2
P/E (x)	24.0	25.2	18.5	17.6	14.1	10.0
DY (%)	2.0%	2.5%	0.0%	0.0%	0.0%	5.0%

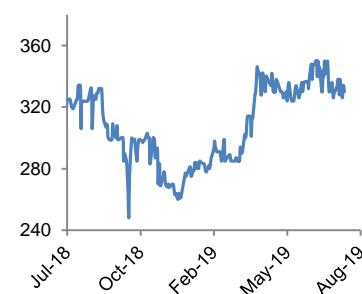
Source: Company data, IPOPEMA Research

VIGO System BUY

Coverage initiation

FV PLN 380.0, 15.2% upside

Price as of 1 Aug 2019: PLN 334.0



Key ratios	2019E	2020E
EBITDA Margin	43%	48%
EBIT Margin	32%	31%
Net Margin	30%	30%
ND/EBITDA	1.7	1.0

Share data	
Number of shares (m)	0.7
Market Cap (€ m)	55.9
12M Avg daily volume (k)	0.3
12M Avg daily turnover (€ k)	19.7
52W High / Low	358.0 / 248.0
WIG Weight (%)	0.1
Reuters	VGOP.WA
Bloomberg	VGO.PW

Total performance	
1M	0.0%
3M	-2.4%
12M	1.5%

Shareholders	
Plotrowski Józef	11.9%
Xarus Holding Limited	9.9%
Investors TFI S.A.	9.8%
Janusz Kubrak	6.6%
Miroslaw Grudzień	5.1%
Jadwiga Nowak	4.9%
Pozostali	51.8%

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Valuation

We base our valuation of VIGO System on the discounted cash flow (DCF) method, to which we apply a 100% weight. We also present a peers comparison on P/E and EV/EBITDA, although we apply a 0% weight to this latter valuation method due to the lack of truly comparable peers (VIGO's direct competitors are foreign firms with a market capitalization that is several times higher; they also have more diversified business models).

Based on our forecasts we arrive at a Fair Value of PLN 380.0 per share, or 15.2% above the current market price, which implies a BUY recommendation.

Figure 26: VIGO System valuation summary

I Method: DCF	
Fair Value	380.0
Weight	100%
II Method: Peers comparison	
Fair Value	467.1
Weight	0%
Fair Value (PLN)	380.0

Source: Company, IPOPEMA Research

DCF valuation

We apply a DCF model to value VIGO, based on our free cash flow forecasts for 2019-23E:

- We assume a 5.0% risk premium and a risk-free rate of 2.5%.
- We assume an unlevered beta of 1.3x.
- We expect a higher effective tax rate (of around 9%) for the long-term (i.e. 2023 and beyond).

Figure 27: VIGO System DCF 2019-23E valuation

DCF (PLN m)	2019E	2020E	2021E	2022E	2023E	2023E+
Revenue Growth Rate	20%	28%	23%	16%	14%	0%
Revenues Total	45.0	57.6	70.8	82.0	93.5	93.5
norm. EBIT margin	29%	23%	27%	27%	28%	28%
norm. EBITDA margin	43%	48%	50%	49%	48%	48%
norm. EBITDA	19.4	27.4	35.5	39.9	44.8	44.8
norm. EBIT	13.0	13.5	19.4	22.3	26.0	26.0
Effective Tax Rate	1%	1%	1%	1%	1%	9%
NOPAT	12.9	13.3	19.2	22.1	25.7	23.6
D&A	5.0	9.4	10.6	11.3	11.9	11.9
CAPEX (net, after subventions)	-38.3	-13.2	-3.9	-4.0	-4.3	-11.9
Change in Working Capital	-5.7	-1.9	-1.9	-1.1	-1.6	-1.4
FCF	-26.1	7.6	24.0	28.3	31.6	22.2
Terminal Value						348.4
discount factor	96%	88%	81%	74%	68%	
Present Value of FCFF	-25.2	7	19	21	22	
Net present value of FCFF (2019-23E)	43.6					
Terminal Growth rate	2.5%					
NPV of terminal value	237.6					
Enterprise value (EV) =	281.2					
Net debt	4					
minorities	0					
dividends	0					
Value of Equity =	277.2					
Number of shares (m units)	0.73					
Fair Value (PLN)	380.0					
DCF Sensitivity (PLN)						
		WACC in Terminal Year				
	Terminal Growth	8.0%	8.5%	9.0%	9.5%	10.0%
	1.5%	377	354	334	316	301
	2.0%	405	378	355	335	318
	2.5%	439	407	380	357	337
	3.0%	479	441	409	382	358
	3.5%	529	481	443	410	383
		EUR/PLN				
	Effective Tax Rate (2023+)	3.75	4.00	4.25	4.50	4.75
	0.0%	389	403	415	426	436
	4.5%	373	386	398	408	416
	9.0%	357	369	380	389	397
	13.5%	341	352	362	370	378
	18.0%	326	336	344	352	358

Source: Company, IPOPEMA Research

Peers comparison

In our valuation we apply a 0% weight to the peers comparison due to the lack of direct peers for the company. Hamamatsu Photonics and Teledyne Technologies, VIGO's direct competitors, are technological conglomerates with a diversified structure of production and significantly higher business scales compared to VIGO.

In the table below we present the data for VIGO's peers. Based on our forecasts VIGO trades at a P/E of 33% (2019E) and 37% (2020E) discounts to foreign peers, which we view as unjustified, taking into consideration VIGO's higher 2019-21E net income CAGR (even taking into account the lower dividend yield).

Figure 28: VIGO System peers comparison

COMPANY	Market Cap	P/E (x)			EV/EBITDA (x)			DY	Revenues CAGR	NI CAGR	ROE
	USD m	2019E	2020E	2021E	2019E	2020E	2021E	2019E	2018-21E	2018-21E	2019E
HAMAMATSU	6,162	30.4	27.2	24.7	15.6	13.8	12.7	1.0%	4.6%	5.9%	10.5%
TELEDYNE	10,681	30.1	27.8	25.8	19.1	17.0	15.4	n.a.	5.0%	8.5%	13.3%
NIPPON CERAMIC	734	25.9	22.3	19.3	n.a.	n.a.	n.a.	1.7%	8.3%	11.5%	5.9%
II-VI INC	2,557	15.8	13.7	11.0	10.0	8.5	5.9	n.a.	18.4%	45.7%	13.5%
OPTEX GROUP	484	19.3	14.4	12.6	n.a.	n.a.	n.a.	2.3%	4.1%	2.4%	7.7%
VISUAL PHOTONICS	602	37.1	27.4	22.5	22.1	16.4	13.6	2.4%	19.1%	28.0%	19.4%
IPG PHOTONICS	6,908	26.3	21.3	15.8	13.8	10.9	7.9	0.0%	5.7%	2.7%	11.3%
MEDIAN		26.3	22.3	19.3	15.6	13.8	12.7	1.7%	5.7%	8.5%	11.3%
VIGO System	62	17.6	14.1	10.0	14.1	9.7	7.2	0.0%	23.7%	22.8%	22.4%
premium/discount to all peers (median)		-33%	-37%	-48%	-10%	-30%	-43%				
Waga		25%	25%		25%	25%					
Implied Price (PLN)		467.1									

Source: Company, Bloomberg, IPOPEMA Research, prices as of 1 August 2019, 19:00

Financials

Figure 29: VIGO System 2016-23E financials

P&L (PLN m)	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Total Revenues	25.6	27.2	37.4	45.0	57.6	70.8	82.0	93.5
- y/y change	0%	6%	38%	20%	28%	23%	16%	14%
Industry	15.1	15.6	20.3	27.1	33.9	40.6	47.5	55.1
Military	3.6	4.8	8.1	8.7	11.3	14.1	14.8	15.5
Transport	4.0	3.5	5.8	6.0	7.3	8.7	10.0	11.0
Other	2.7	3.2	3.2	3.3	5.2	7.4	9.7	11.9
Operating costs	-16.0	-18.4	-26.8	-32.3	-43.3	-50.6	-58.8	-66.7
Remuneration and employee benefits	-7.8	-8.8	-14.1	-16.1	-18.3	-21.0	-24.3	-27.2
Materials and energy	-3.9	-4.4	-6.4	-8.1	-11.7	-15.0	-19.0	-23.2
Depreciation/amortisation	-2.2	-2.8	-3.5	-5.0	-9.4	-10.6	-11.3	-11.9
Other	-2.1	-2.4	-2.8	-3.1	-3.9	-4.1	-4.2	-4.4
Other operating cost net	0.3	1.0	2.1	1.6	3.7	4.8	5.5	6.1
Reported EBITDA	12.0	12.6	16.2	19.4	27.4	35.5	39.9	44.8
- y/y change	7%	4%	29%	20%	41%	30%	12%	12%
EBIT	9.9	9.8	12.8	14.4	18.0	25.0	28.6	32.9
- y/y change	3%	-1%	31%	13%	25%	39%	15%	15%
Finance Costs net	0.2	-0.1	0.3	-0.7	-0.8	-0.6	-0.4	-0.2
Pretax Profit	10.1	9.6	13.0	13.8	17.2	24.3	28.2	32.7
Income Tax	0.0	-0.1	-0.2	-0.2	-0.3	-0.3	0.0	0.0
Net Income	10.0	9.5	13.0	13.7	17.0	24.1	28.0	32.3
- y/y change	6.1%	-4.6%	36.5%	5.0%	24.5%	41.6%	16.0%	15.6%
EPS (PLN)	13.7	13.1	17.9	18.7	23.3	33.1	38.3	44.3
Profitability Ratios								
EBITDA Margin	47%	46%	43%	43%	48%	50%	49%	48%
EBIT Margin	39%	36%	34%	32%	31%	35%	35%	35%
Net Margin	39%	35%	35%	30%	30%	34%	34%	35%
ROE	29%	24%	27%	22%	22%	26%	27%	27%
Balance Sheet (PLN m)	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Total Non-current Assets	28.9	38.0	67.4	107.0	125.0	124.2	123.1	122.5
Tangible assets	19.3	19.9	45.0	75.9	90.6	86.2	81.7	77.2
Intangible assets	6.2	6.3	6.8	13.5	15.2	17.1	18.5	20.4
Expenditures on development projects	3.4	11.1	14.4	15.8	17.4	19.1	21.0	23.1
Other Non-current Assets	0.0	0.8	1.3	1.8	1.8	1.8	1.8	1.8
Total Current Assets	21.4	18.4	22.8	24.4	21.8	28.3	37.0	48.0
Inventories	2.8	3.4	4.1	5.0	5.8	7.2	8.3	9.5
Trade and Other Receivables	3.8	2.4	5.6	8.0	7.8	9.5	11.1	12.6
Cash and equivalents	10.8	11.4	9.3	8.4	5.2	8.6	14.6	22.9
Other Current Assets	4.0	1.2	3.7	3.0	3.0	3.0	3.0	3.0
Total Assets	50.4	56.4	90.2	131.3	146.8	152.5	160.0	170.5
Shareholders Equity	37.7	41.2	54.2	67.9	84.9	97.0	110.9	127.1
Non-current Liabilities	7.8	6.6	17.9	47.5	49.1	43.4	37.3	32.4
Debt	0.0	0.0	5.5	32.2	24.2	18.2	12.2	7.2
Other Non-current Liabilities	7.8	6.6	12.4	15.3	24.9	25.2	25.1	25.2
Current Liabilities	4.9	8.7	18.1	16.0	12.8	12.1	11.8	11.0
Debt	0.4	0.0	7.8	9.3	7.3	5.3	3.3	1.3
Trade and Other Payables	0.6	0.9	7.0	4.7	3.4	4.7	6.2	7.3
Other Current Liabilities	3.9	7.8	3.3	1.9	2.0	2.1	2.3	2.4
Total Equity & Liabilities	50.4	56.4	90.2	131.3	146.8	152.5	160.0	170.5
Net Debt	-10.3	-11.4	4.0	33.1	26.3	14.9	0.9	-14.4
Net Debt / EBITDA	-0.9	-0.9	0.2	1.7	1.0	0.4	0.0	-0.3
BVPS (PLN)	51.7	56.5	74.4	93.1	116.5	133.0	152.2	174.3
Balance Sheet Ratios								
Debt/Assets	0.0	0.0	0.1	0.3	0.2	0.2	0.1	0.0
Debt/Equity	0.0	0.0	0.2	0.6	0.4	0.2	0.1	0.1
Cash Flow (PLN m)	2016	2017	2018	2019E	2020E	2021E	2022E	2023E
Pretax profit	10.1	9.6	13.0	13.8	17.2	24.3	28.2	32.7
D&A	2.2	2.8	3.5	5.0	9.4	10.6	11.3	11.9
Other (incl. WC change)	-3.2	-0.1	-7.4	-8.9	-5.7	-6.9	-7.1	-8.5
Operating Cash Flows	9.1	12.3	9.1	9.9	20.9	28.0	32.4	36.0
Subventions	5.1	4.0	1.9	6.3	14.2	5.8	6.1	7.0
Capital expenditures	-9.9	-9.1	-26.5	-44.5	-27.4	-9.8	-10.2	-11.4
Cash Flows from Investing Activities	-4.8	-5.1	-24.6	-38.3	-13.2	-3.9	-4.0	-4.3
Change in Debt	-0.8	-0.4	13.3	28.2	-10.0	-8.0	-8.0	-7.0
Dividends	-4.7	-6.0	0.0	0.0	0.0	-12.0	-14.0	-16.2
Other	0.0	0.0	-0.1	-0.7	-0.8	-0.6	-0.4	-0.2
Cash Flows from Financing Activities	-5.5	-6.4	13.3	27.5	-10.8	-20.7	-22.4	-23.4
Change in cash and equivalents	-1.2	1.2	-2.5	-1.0	-3.2	3.4	6.0	8.3
Cash as of bop	12.0	10.8	11.6	9.3	8.4	5.2	8.6	14.6
Cash as of eop	10.8	11.4	9.3	8.4	5.2	8.6	14.6	22.9
DPS (PLN)	6.5	8.2	0.0	0.0	0.0	16.5	19.2	22.2
DY (%)	2.0%	2.5%	0.0%	0.0%	0.0%	5.0%	5.8%	6.7%
FCF Yield (%)	-0.7%	2.6%	-6.6%	-9.6%	2.8%	9.4%	11.7%	14.0%

Source: Company, IPOPEMA Research

Investment risks

Between critical in our opinion risks for operations and results of VIGO system we include:

The risk of decrease of demand for company's products. The market of MID-Infrared detectors on which VIGO operates is currently dynamically developing part of photonics. Nevertheless, there is a risk, that due to different factors (including macroeconomic, political or technological) the demand for detectors will drop significantly and the market would not growth with actual, high dynamic.

The risk of key client loss. In 2018 49% of revenues were generated from the contracts with 3 clients (40% revenues) and one distributor (9% revenues). The end of collaboration with each of these, or the decrease of contracts value could significantly affect the dynamic of VIGO revenues growth. However we note that the competition on the IR detectors market is low (high entry barriers) and high cost of technology replacement (which is also the barrier for VIGO and means that acquisition of new partners is harder).

The risk of competition. Due to high concentration on the market (only few producers) and high entry barriers (complicated technology) we assume that competition risk is quite low. Nonetheless with further dynamic growth of the market and popularization of applications of MID-infrared detectors there is a risk that leading technological companies will decide to enter the market. Another risk is the fast development of technology and short life cycle of the product (there is a risk of obtaining technological advantage by one of the competitors).

The risk of losing key employees. Production of infrared detectors is a process which require highly specialized workers, which supply on the market is very limited. At the same time high qualifications of the staff is perceived by the board as one of the advantages of VIGO.

The risk of alternative technology. There is a risk that other alternative technology could appear on the market and replace VIGO products with better parameters and/or lower price.

The risk of equipment breakdown. The equipment used by VIGO is highly advanced and is not vastly available on the market. In the case of breakdown, the company could have a problem with the production delays. The costs of replacement/repair of machines could be also significant.

Risk of lower subventions/grants in the future. To keep high level of subventions to expenditures on R&D the company needs to meet many criterions. The loss of subvention, or lower level of subvention in the future would result in the necessity of higher company's own spending on R&D or higher debt level.

The Currency risk. The most of the VIGO revenues is generated in EUR, while the cost (based on salaries and other employees' benefits) are mainly in PLN, which result in exposure for currency risk. VIGO is not using currency hedging instruments.

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It is intended that each of the analytical reports will be updated at least twice a year starting from the date of publication of the initiating report, and in the event of key operations and/or changes in the assumptions underlying the report. In the last 12 months IPOPEMA Securities S.A. has not prepared any report concerning the issuer.

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The date stated on the front page is the date of the publication of this Report. The price used throughout the recommendation to calculate adequate ratios is the "last" price stated on the front page of this report.

The definitions of terms used in the Report include:

- NII – Net interest income – interest income minus interest expense.
- Net F&C – Net fee and commission income – fee and commission income minus fee and commission expense.
- LLP – loan loss provisions – an expense set aside as an allowance for bad loans.
- NPL – non-performing loan – loans that are in default or close to be in default.
- Cost/Income – operating expenses divided by total banking revenue.
- ROE – return on equity – net income (or adjusted net income) divided by the average shareholders' equity.
- ROA – return on assets – net income (or adjusted net income) divided by the average assets.
- EBIT – earnings before interests and tax.
- EBITDA – earnings before interests, tax, depreciation and amortization.
- EPS – earnings per share – the net income (or adjusted net income) divided by the number of shares outstanding.
- P/E – price to earnings ratio – price divided by earnings per share.
- PEG – P/E ratio divided by the annual EPS growth, usually over a certain period of time.
- CAGR – compound annual growth rate.
- BVPS – book value per share, the book value of the Company's equity divided by the number of shares outstanding.
- P/BV – price to book value – price divided by the BVPS.
- DPS – dividend per share – dividend of a given year divided by the number of shares outstanding.
- DY – dividend yield – dividend of a given year divided by the current price.
- DDM – dividend discount model – a fundamental method of valuation based on the assumption that the value of stock equals the sum of all discounted future dividends.
- FV – Fair Value, calculated based on valuation methods outlined in the Report.

The author of this Report has no conflict of interest with the issuer that is the subject of this Report.

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When applying ratings for companies following criteria are used with regards to the difference between IPOPEMA's FV and company's price at the date of recommendation:

Rating	Difference between FV and price at recommendation
Buy	Above 10%
Hold	In between (and including) -10% and 10%
Sell	Below 0%

IPOPEMA Research - Distribution by rating category (Apr 1 – Jun 30, 2019)

	Number	%
Buy	6	40%
Hold	6	40%
Sell	3	20%
Total	15	100%

Rating History – VIGO System

Date	Recommendation	Fair Value	Price at recommendation	Author
02.08.2019	BUY	380.0	330.0	Michał Wojciechowski