

MetaOptics (METAO SP)

From Lab To Market: A Metalens Player With Scalable Growth

Highlights

- MetaOptics delivered strong early commercial traction, with 2025 revenue rising 891% yoy to S\$0.8m, driven by its first DLW sale.
- The group is differentiated by its focus on colour metalenses, positioning it to benefit from a high-growth market (five-year CAGR of 75% in 2024-29F).
- MetaOptics remains loss-making and trades at 55x 2026F P/Sales vs peers at 2.4x, where valuation is driven by its scalability and technology validation rather than near-term earnings.

Analysis

- Early commercial traction driven by equipment sales.** MetaOptics delivered strong 2025 revenue growth of 891% yoy to S\$787,388, driven by the first commercial delivery of its direct laser writer (DLW) to a semiconductor partner in Taiwan. This marks an important transition from R&D to early-stage commercialisation.
- Vertically-integrated platform supports adoption.** The group operates across the metalens value chain, spanning equipment, fabrication and end-products. This model allows customers to develop, validate and scale within a single ecosystem, supporting recurring demand and customer stickiness.
- Positioned in colour imaging niche with scalable manufacturing.** MetaOptics focuses on visible light (colour) metalenses using glass substrates, differentiating itself from peers focused on infrared applications. Its use of 12-inch deep ultraviolet immersion photolithography supports scalable, high-volume production for mass-market applications.
- Large addressable market with low penetration.** The global optical metalens market is projected to grow at a five-year CAGR of 75% to US\$493m by 2029, supported by demand across consumer electronics, AR/VR and automotive sensing. Penetration remains low, indicating a significant runway.
- Strategic positioning within global innovation ecosystems.** The group has established a presence in Silicon Valley, joining Stanford Engineering's SystemX Alliance and participating in Qualcomm's innovation ecosystem. These initiatives support technology validation and collaboration with leading industry players, potentially accelerating adoption.
- Valuation reflects early-stage growth profile.** MetaOptics is currently loss-making and trades at 55x 2026F P/Sales, reflecting its early-stage profile. Established optical peers trade at an average of 17.6x 2026F PE and 2.4x P/Sales, although comparability is limited given differences in scale and profitability. We view the group as a deep-tech growth company, driven by technology validation and scalability potential rather than near-term earnings.

Key Financials

Year to 31 Dec (\$m)	2022	2023	2024	2025
Net turnover	0.1	0.0	0.1	0.8
EBITDA	(0.5)	(0.7)	(1.2)	(4.5)
Operating profit	(1.1)	(1.2)	(1.9)	(5.3)
Net profit (rep./act.)	(1.1)	(1.2)	(2.0)	(5.4)
Net profit (adj.)	(1.1)	(1.2)	(2.0)	(5.4)
EPS	(0.5)	(0.5)	(0.8)	(2.5)
PE (x)	n.a.	n.a.	n.a.	n.a.
P/B (x)	46.6	39.4	34.2	10.9
EV/EBITDA (x)	n.a.	n.a.	n.a.	n.a.
Dividend yield (%)	0.0	0.0	0.0	0.0
Net margin (%)	n.a.	n.a.	n.a.	n.a.
Net debt/(cash) to equity (%)	(20.4)	(26.8)	(30.1)	(87.5)
Interest cover (x)	n.a.	n.a.	n.a.	n.a.
ROE (%)	(48.1)	(49.5)	(67.3)	(82.8)

Source: MetaOptics, Bloomberg, UOB Kay Hian

NOT RATED

Share Price	S\$0.45
Target Price	n.a.
Upside	n.a.

Analyst(s)

Singapore Research Team

research@uobkayhian.com

+65 6535 6868

Stock Data

GICS sector	Technology
Bloomberg ticker:	METAO SP
Shares issued (m):	242.6
Market cap (\$m):	109.2
Market cap (US\$m):	84.7
3-mth avg daily t'over (US\$m):	0.3

Price Performance (%)

52-week high/low				S\$1.49/S\$0.21
1mth	3mth	6mth	1yr	YTD
(58.3)	(62.2)	(17.4)	n.a.	(61.9)

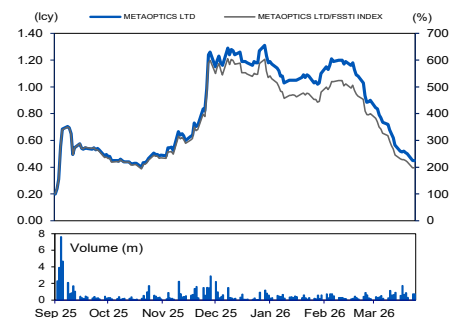
Major Shareholders

	%
Angelling Capital	23.4
MST SingCo	12.9
MMI Hldgs	10.4

Balance Sheet Metrics

	%
FY26 NAV/Share (\$\$)	0.04
FY26 Net Cash/Share (\$\$)	0.036

Price Chart



Company Description

MetaOptics operates as a holding company. The company, through its subsidiaries, designs and manufactures optics lenses, camera modules, and IoT devices. MetaOptics serves customers worldwide.

Contents

Company Background 3

Business Model..... 4

Key Management..... 4

Financial Performance 5

Financial Statements 6

Appendix I: Industry Overview 7

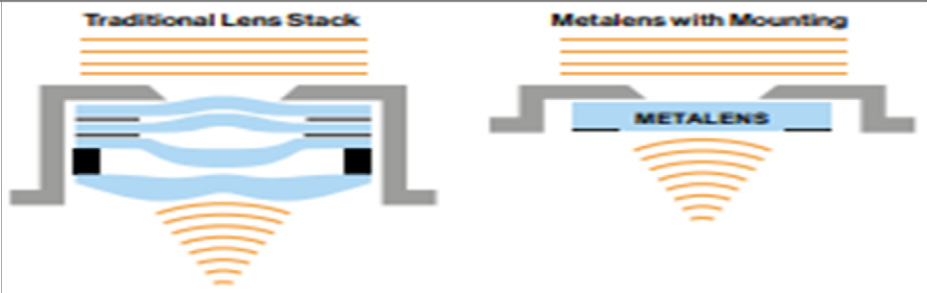
Appendix II: Key Risks 9

This report uses the closing prices of 30 Mar 26

Company Background

Semiconductor optics developer founded in Singapore. MetaOptics was established in Singapore in Jun 21 to design and manufacture nanostructured flat lenses known as metalenses. The company focuses on replacing traditional curved optical lenses with ultra-thin metasurface structures that manipulate light through nanoscale features. Its holding company was incorporated in the Cayman Islands in 2025, before listing on the SGX Catalist board at an IPO price of S\$0.20 in Sep 25. The group subsequently completed a S\$4.85m placement in Dec 25 at S\$0.7255/share.

Figure 1: Metalenses Enable Simplification



Source: Moxtek

Global customer base across semiconductor and photonics markets. MetaOptics’ customers for metalens manufacturing equipment, optical components and IoT products are located across key markets including Singapore, Japan, South Korea, China, Taiwan, the US and parts of Europe. These customers typically operate in industries such as semiconductor manufacturing, optical components, photonics and advanced sensing systems.

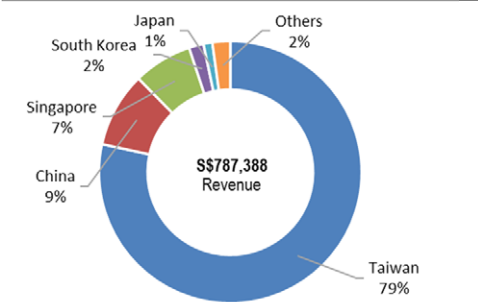
- Key business segments.** MetaOptics operates four main business segments:
- a) **Equipment (Production & testing).** Manufactures metalens production equipment including the four-inch deep ultraviolet (DUV) and Automatic Metalens Tester.
 - b) **Fabrication (Metalens production).** Produces customised metalenses using DLW prototyping and 12-inch DUV immersion photolithography, enabling nanostructures as small as 60nm.
 - c) **Products (Metalens IoT devices).** Designs metalens-based IoT products such as infrared and colour metalens cameras, pico projectors and 3D biometric sensors.
 - d) **AI (Imaging & IoT algorithms).** Develops imaging and IoT algorithms to optimise metalens implementation and performance.

Figure 2: Key Corporate Milestones

Year	Events
2021	• Incorporated as MetaOptics Technologies.
	• Began DLW development.
	• Secured active alignment and laser module patents in Taiwan and China.
2022	• Expanded IP portfolio to include metalens structures and optical modules in Taiwan and China.
2023	• Developed first 12-inch glass wafer colour metalens.
	• Completed DLW prototype and secured first purchase order.
2024	• Launched first Gen-1 IoT products (pico projector and 3D biometric sensor) at CES.
	• Secured first purchase order for metalens-enabled IoT products.
	• Demonstrated metalens integration with Qualcomm platform.
	• Completed public listing on SGX Catalist.
2025	• Commenced product scaling and customer sampling.
	• Developed rectangular metalenses.
	• Selected for Qualcomm AI Program for Innovators.
2026	• Unveiled Gen-2 products (including AI smart glasses and 5G smartphone camera modules) at CES.
	• Shipped first Automatic Metalens Tester to a customer in Taiwan.

Source: MetaOptics, UOB Kay Hian

Figure 3: Revenue By Geography (2025)



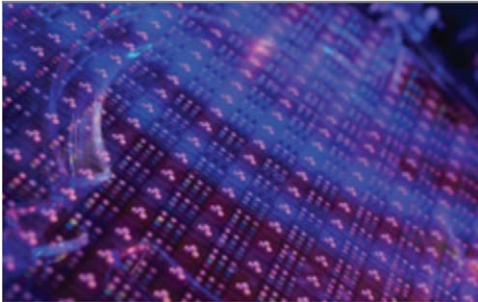
Source: MetaOptics

Figure 4: Metalens Equipment



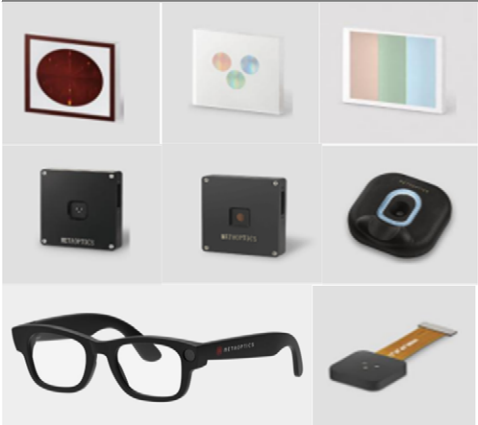
Source: MetaOptics

Figure 5: Metalens Fabrication – Proprietary 12-inch DUV Immersion Photolithography



Source: MetaOptics

Figure 6: Metalens Products



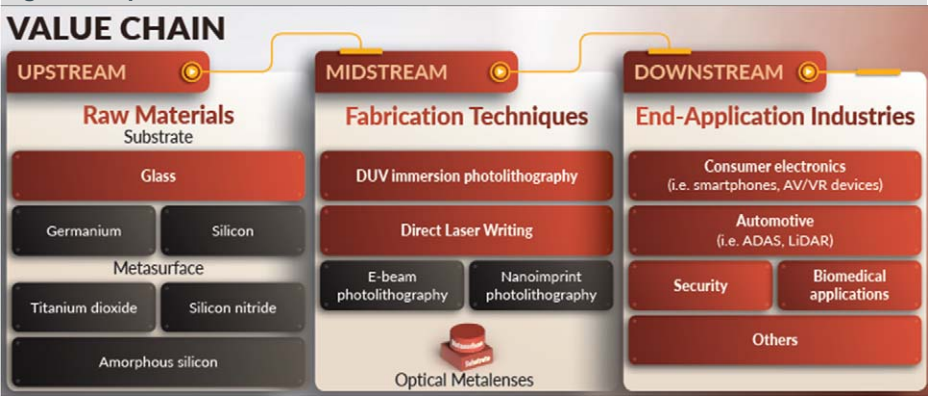
Source: MetaOptics

Business Model

Vertically-integrated platform across the metalens value chain. MetaOptics operates a vertically-integrated model spanning design, prototyping, fabrication and product development. The group participates across multiple stages of the value chain, enabling control over product development and manufacturing processes.

Full-stack integration strengthens execution and differentiation vs peers focused on single segments

Figure 7: Optical Metalens Value Chain



Source: MetaOptics

Revenue streams across equipment and product segments. The group generates revenue from: a) equipment and testing solutions, including DLW systems and metalens testers used for prototyping and validation; and b) metalens components and products, including optical modules and IoT devices supplied to manufacturers and end-users.

Dual revenue model supports early monetisation while building longer-term recurring demand

Dual-platform manufacturing supporting scale. MetaOptics combines DLW-based prototyping for customised development with 12-inch DUV immersion photolithography for scalable production. This enables flexibility across low- and high-volume requirements, while maintaining an asset-light approach through outsourced fabrication.

MetaOptics' combination of DLW prototyping and 12-inch fabrication provides a clear pathway from development to scalable mass production

Hybrid B2B and B2C commercial approach. MetaOptics serves manufacturers and distributors through its B2B segment, while selected IoT products are sold directly via online channels, supporting broader adoption of metalens-enabled devices.

Key Management

Figure 8: Selected Directors/Personnel

Name	Position	Experience
Mr <u>Thng</u> Chong Kim (Mark) (62)	Executive Chairman	Mr Thng serves as Executive Chairman, having transitioned from his dual role as Chairman and CEO in Mar 26 as part of the group's succession planning. He brings over 30 years of senior leadership experience in the semiconductor and manufacturing sectors. He previously served as Vice President of Operations at Heptagon, where he oversaw precision manufacturing at scale and supported its role as a key optical sensor supplier to global smartphone customers. In his current role, he oversees strategy, management performance and business development, including the group's expansion into the US.
Mr Aloysius <u>Chua</u> Hao Peng (30)	Executive Director and Chief Executive Officer	Mr Chua was appointed Executive Director and Chief Executive Officer in Mar 26. As a co-founder who joined the group in Jun 21, he previously served as Projects Director and Deputy CEO. He plays a key role in driving innovation and business growth, with responsibilities spanning equipment development, metalens fabrication and supply chain development. He holds a Bachelor of Engineering from the National University of Singapore.
Mr <u>Chu</u> Wee Liat (38)	Chief Financial Officer	Mr Chu is responsible for the group's financial management, including accounting, reporting and corporate strategy. He joined the group in Jan 25 and brings over a decade of experience in audit and transaction advisory, including roles at PricewaterhouseCoopers in both Silicon Valley and Singapore. Prior to joining MetaOptics, he was Deputy Director at Advanced MedTech Holdings, where he oversaw investments and corporate development.

Source: MetaOptics, UOB Kay Hian

Financial Performance

Strong revenue growth driven by initial commercialisation. MetaOptics reported 2025 revenue of S\$0.8m (+891% yoy), driven primarily by the first commercial delivery of its DLW to a semiconductor partner in Taiwan, which accounted for around 69% of total revenue. IoT product revenue also grew 158% yoy to S\$0.2m, supported by shipments of biometric sensors and pico projectors. Taiwan was the largest contributor, reflecting early traction in semiconductor-related applications.

Revenue inflection point with first commercial deployment

Margins impacted by product mix; losses widened on investment. Gross profit rose 502% yoy to S\$0.16m, although gross margin declined to 20.3% (2024: 33.4%) due to a higher contribution from lower-margin equipment sales. The group recorded a wider net loss of S\$5.4m (2024: S\$2.0m loss), mainly due to S\$2.4m in one-off listing and dual-listing expenses, alongside increased R&D spending of S\$1.8m for next-generation products and other non-cash costs. Excluding one-offs, core net loss was around S\$3.0m.

Losses driven by investment, not core demand weakness

Strengthened balance sheet after IPO and placement. MetaOptics ended 2025 with S\$8.8m in cash, supported by its Sep 25 IPO and subsequent Dec 25 placement. This led to a significant improvement in working capital to S\$8.6m. The group also carries a non-current liability of S\$2.1m due to a strategic shareholder, repayable from 2027.

IPO-funded balance sheet supports next growth phase

Valuation driven by scalability potential, not earnings. While MetaOptics remains loss-making, its 2025 revenue growth reflects the early commercialisation of its technology. Further growth is expected as additional DLW orders are fulfilled and customer engagements progress, with a potential path toward breakeven as scale improves. At this stage, valuation is driven more by growth potential than earnings. Comparable companies like Canon, Nikon, Hoya and Sunny Optical are significantly larger, more profitable and operate across the optical and imaging segments. Peers trade at an average of 17.6x 2026F PE and 2.4x 2026F P/Sales, while MetaOptics trades at 55x P/Sales due to its small revenue base and ongoing investment phase. We view MetaOptics as a deep-tech company with valuation driven more by technology validation and scalability rather than near-term profitability.

Growth story priced on scalability, not earnings

Figure 9: Peer Comparison

		Price @	Market	PE		P/Sales		ROE	Revenue	GPM
Company	Ticker	30 Mar 26	Cap	2026	2027F	2026	2027F	2026	2026	2026
		(1cy)	(US\$m)	(x)	(x)	(x)	(x)	(%)	(US\$m)	(%)
Company										
Metaoptics Ltd	METAO SP	0.45	85	n.a.	n.a.	55.3	27.6	(29.5)	1.5	35.0
Peers										
Aac Technologies	2018 HK	33.78	5,025	12.3	10.3	1.0	0.9	10.8	5,197	23.0
Genius Electronic Optical	3406 TT	440.5	1,551	12.5	11.6	1.9	1.8	14.7	797	33.4
Largan Precision	3008 TT	2180	9,089	12.2	11.6	4.6	4.3	11.9	1,990	51.2
Sekonix	053450 KS	5110	50	7.6	14.5	0.2	0.2	6.7	310	n.a.
Sunny Optical	2382 HK	53	7,298	12.8	11.1	1.1	1.0	13.3	6,690	20.1
Canon	7751 JP	4354	36,381	11.3	10.3	1.2	1.2	9.7	29,657	47.0
Fujifilm	4901 JP	2927.5	22,813	12.5	10.8	1.0	1.0	7.7	21,737	39.8
Nikon	7731 JP	1900	3,971	33.6	22.1	0.9	0.9	3.6	4,478	42.4
Essilorluxottica	EL FP	197.35	105,062	26.5	23.1	2.9	2.6	8.0	36,294	59.3
Hoya	7741 JP	27025	57,296	34.4	30.5	9.0	8.4	25.9	6,346	91.2
Average				17.6	15.6	2.4	2.2	11.2		45.3

Source: Bloomberg, UOB Kay Hian

Profit & Loss

Year to 31 Dec (\$m)	2022	2023	2024	2025
Net turnover	0.1	0.0	0.1	0.8
EBITDA	(0.5)	(0.7)	(1.2)	(4.5)
Deprec. & amort.	0.6	0.6	0.8	0.8
EBIT	(1.1)	(1.2)	(1.9)	(5.3)
Total other non-operating income	0.0	0.0	0.0	0.0
Associate contributions	0.0	0.0	0.0	0.0
Net interest income/(expense)	0.0	0.0	(0.0)	(0.2)
Pre-tax profit	(1.1)	(1.2)	(2.0)	(5.4)
Tax	0.0	0.0	0.0	0.0
Minorities	0.0	0.0	0.0	0.0
Net profit	(1.1)	(1.2)	(2.0)	(5.4)
Net profit (adj.)	(1.1)	(1.2)	(2.0)	(5.4)

Balance Sheet

Year to 31 Dec (\$m)	2022	2023	2024	2025
Fixed assets	0.2	0.5	0.5	0.5
Other LT assets	4.1	4.5	3.8	3.1
Cash/ST investment	0.5	0.7	1.0	8.8
Other current assets	0.3	0.1	0.4	1.2
Total assets	5.2	5.9	5.7	13.6
ST debt	0.0	0.0	0.0	0.0
Other current liabilities	2.9	3.2	0.6	1.5
LT debt	0.0	0.0	0.0	0.0
Other LT liabilities	0.0	0.0	1.9	2.1
Shareholders' equity	2.3	2.7	3.1	10.0
Minority interest	0.0	0.0	0.0	0.0
Total liabilities & equity	5.2	5.9	5.7	13.6

Cash Flow

Year to 31 Dec (\$m)	2022	2023	2024	2025
Operating	(0.2)	(0.3)	(1.2)	(4.5)
Pre-tax profit	(1.1)	(1.2)	(2.0)	(5.4)
Tax	0.0	0.0	0.0	0.0
Deprec. & amort.	0.6	0.6	0.8	0.8
Associates	0.0	0.0	0.0	0.0
Working capital changes	(0.1)	0.3	(0.0)	(0.0)
Non-cash items	0.0	0.0	0.0	0.0
Other operating cashflows	0.4	0.1	(0.0)	0.2
Investing	(0.2)	(0.1)	(0.0)	0.0
Capex (growth)	(0.2)	(0.3)	0.0	0.0
Investment	0.0	0.0	0.0	0.0
Others	0.0	0.3	(0.0)	0.0
Financing	0.8	0.6	1.5	12.4
Dividend payments	0.0	0.0	0.0	0.0
Proceeds from borrowings	0.0	0.0	0.0	0.0
Loan repayment	(0.0)	0.0	0.0	0.0
Others/interest paid	0.9	0.6	1.5	12.4
Net cash inflow (outflow)	0.4	0.3	0.2	7.8
Beginning cash & cash equivalent	0.0	0.5	0.7	1.0
Changes due to forex impact	0.0	0.0	0.0	(0.0)
Ending cash & cash equivalent	0.5	0.7	1.0	8.8

Key Metrics

Year to 31 Dec (%)	2022	2023	2024	2025
Profitability				
EBITDA margin	(804.1)	n.a.	(1,485.2)	(571.5)
Pre-tax margin	(1,664.4)	n.a.	(2,457.0)	(691.6)
Net margin	(1,664.4)	n.a.	(2,457.0)	(691.6)
ROA	(21.2)	(22.2)	(33.6)	(56.4)
ROE	(48.1)	(49.5)	(67.3)	(82.8)
Growth				
Turnover	n.a.	(100.0)	n.a.	891.7
EBITDA	n.a.	n.a.	n.a.	n.a.
Pre-tax profit	n.a.	n.a.	n.a.	n.a.
Net profit	n.a.	n.a.	n.a.	n.a.
Net profit (adj.)	n.a.	n.a.	n.a.	n.a.
EPS	n.a.	n.a.	n.a.	n.a.
Leverage				
Debt to total capital	0.0	0.0	0.4	0.0
Debt to equity	0.0	0.0	0.8	0.0
Net debt/(cash) to equity	(20.4)	(26.8)	(30.1)	(87.5)
Interest cover (x)	n.a.	n.a.	n.a.	n.a.

Appendix I: Industry Overview

METALENSES: REVOLUTIONISING OPTICAL DESIGN

From conventional optics to metalenses. Optical metalenses represent a shift from traditional bulky optics to flat, ultrathin lenses enabled by metasurface engineering. Instead of using curved glass elements, metalenses manipulate light using nanoscale structures arranged on a flat surface. This enables thinner, lighter and simpler optical systems while maintaining high imaging performance.

Rapid progress from research to early commercialisation. The conceptual foundations of metalenses were first established by Harvard researchers in 2011, with practical demonstrations emerging by 2016. Early designs relied on plasmonic metasurfaces, which were later replaced by high-efficiency dielectric materials that significantly improved optical performance and reduced energy losses. Advances in nanofabrication processes and computational design tools have since accelerated the transition from laboratory prototypes toward commercially viable devices.

HIGH-GROWTH INDUSTRY WITH LOW PENETRATION

Rapid expansion from a low base. The global optical metalens market grew significantly from US\$0.5m in 2019 to US\$30.2m in 2024 (five-year CAGR of 126.1% in 2019-24), driven primarily by early adoption in consumer electronics and increased awareness of the potential advantages of optical metalenses.

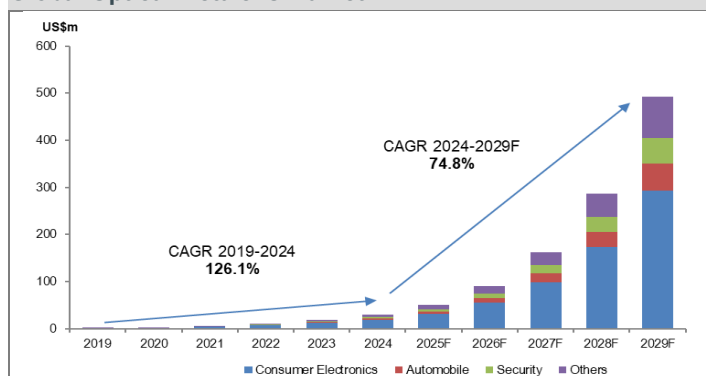
Large addressable market with significant headroom. The market is projected to hit US\$493m by 2029 (five-year CAGR of 74.8% in 2024-29F), but penetration levels remain low. Adoption in consumer electronics was estimated at 0.7% in 2024 and is expected to rise to 4.1% by 2029. The total addressable market for optical metalens applications is estimated to reach US\$27.2b by 2029 as the technology matures and expands into additional industries.

SINGAPORE MARKET: EARLY-STAGE BUT RAPIDLY GROWING

Nascent market supported by strong ecosystem. Singapore's metalens market remains small but is growing rapidly due to the strong semiconductor ecosystem and research capabilities. The domestic market is estimated at US\$86,777 in 2024, rising from US\$1,245 in 2019 (five-year CAGR of 133.7%).

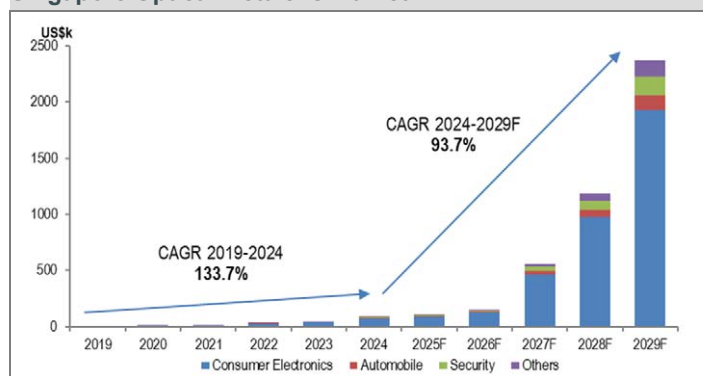
Strong growth expected over the medium term. The Singapore metalens market is projected to reach US\$2.4m by 2029 (five-year CAGR of 93.7% in 2024-29F), driven by increasing R&D activity and the expansion in the downstream photonics and electronics industries.

Global Optical Metalens Market



Source: China Insights Consultancy

Singapore Optical Metalens Market



Source: China Insights Consultancy

EXPANDING APPLICATIONS ACROSS INDUSTRIES

Metalenses are seeing increasing adoption across multiple end-markets, led by consumer electronics where they enable thinner smartphone cameras and more compact designs in AR/VR devices, IoT sensors and projector systems. In autonomous driving and advanced driver-assistance systems (ADAS), metalenses simplify optical systems and provide better thermal stability than polymer optics, supporting a reliable performance in high-temperature environments. They are also gaining traction in security and biometric applications, where integration with computational imaging supports compact 3D sensing for facial recognition, gesture control and identity verification.

KEY ADOPTION DRIVERS

Adoption of optical metalenses is supported by several trends. The ongoing demand for slimmer and more integrated devices continues to drive the need for compact optical solutions. At the same time, advancements in computational imaging, materials and metasurface design have improved performance and addressed key technical limitations. Growth in downstream industries such as smartphones, AR/VR, and automotive and biometric systems is further adding use cases. Also, Singapore’s strong semiconductor ecosystem, supported by R&D capabilities and government incentives (upcoming S\$500m national semiconductor fabrication facility operational by 2027), provides a favourable environment for continued development and commercialisation.

COMPETITIVE LANDSCAPE: INFRARED FOCUS VS COLOUR IMAGING NICHE

Industry remains concentrated. The global metalens industry is still developing, with the top five players accounting for approximately 64.4% of market share in 2024. MetaOptics is ranked third globally among companies with mass production capabilities and commercial shipments. Key competitors, including Metalenz, NIL Technology and several China-based players, are largely focused on infrared sensing and 3D imaging, with a limited presence in colour imaging applications.

Differentiation in substrate and manufacturing approach. MetaOptics focuses on visible-light (colour) imaging using glass substrates, in contrast to silicon-based infrared solutions used by most peers. Its use of 12-inch DUV immersion photolithography enables higher scalability and manufacturing consistency compared with alternative techniques.

Positioned in a niche with potential to scale. While currently small in scale, MetaOptics’ positioning in colour imaging and scalable manufacturing may provide a differentiated growth pathway as the industry evolves toward mass-market applications.

Ranking And Market Share In The Global Optical Metalens Industry							
Ranking	Optical metalens company	Year established	Headquarters	2024 Global revenue (US\$m)	As % of 2024 Global revenue (%)	Core product type	Achieved mass production possibilities and shipments by end-24? (Y/N)
1	Metalenz	2016	The U.S.	10.0	33.1	Infrared metalens	Y
2	NIL Technology	2006	Denmark	7.5	24.8	Infrared metalens	Y
3	Metalenx	2020	China	1.2	4.0	Infrared metalens	N
4	Najing	2020	China	0.7	2.3	Infrared metalens	N
5	MetaOptics	2021	Singapore	0.1	0.2	Colour metalens	Y
Others				10.8	35.6		
Total				30.2	100.0		

Source: China Insights Consultancy

Appendix II: Key Risks

Early-stage and uncertain path to profitability. MetaOptics has incurred losses since its incorporation and remains in the investment phase. While its balance sheet strengthened following its IPO and placement, steady revenue streams have yet to be established. The group may therefore remain loss-making in the near term.

Commercial ramp-up depends on customer adoption cycles. Although the group has demonstrated metalens production capabilities, large-scale commercialisation has not commenced. Revenue growth depends on securing major customer orders, with adoption subject to qualification cycles that can take over 12 months.

Reliance on licensed IP for core technology. The group depends on licensing agreements with Accelerate Technologies (A*STAR) for key technologies. Any disruption to or expiry of these arrangements could impact its ability to commercialise products, while internally-developed IP may not fully offset this dependency.

Balance sheet exposure to debt obligations. MetaOptics carries debt obligations to a strategic investor, with repayments expected from 2027. Any early repayment request or refinancing requirement could place pressure on liquidity.

Concentrated supply chain and complex manufacturing process. The group relies on a limited number of suppliers and external fabrication partners. Disruptions, quality issues or production inefficiencies could affect delivery timelines and product yields.

Over-reliance on key men. MetaOptics relies on a lean management team with specialised industry expertise, particularly its senior leadership. The loss of key individuals may impact operational execution, strategic direction and customer relationships.

IMPORTANT NOTICE - DISCLOSURES AND DISCLAIMERS

This report is provided subject to various disclosures and disclaimers (the "Disclosures / Disclaimers") which form an integral part of this report and are available at the following link:
<https://research-api.uobkayhian.com/assets/disclaimer/df64a6ea-7980-447c-ae9e-fd19b93257dc> or by scanning the QR code below:



The Disclosures / Disclaimers contain important information, including without limitation, (a) exclusions of liability, (b) confidentiality obligations, (c) restrictions on publication, circulation, reproduction, distribution and use of the report, (d) potential conflicts of interest, and (e) disclosures and requirements specific to recipients in the United States and other applicable jurisdictions.

Specifically, this report is intended for general circulation and informational purposes only and does not take into account the specific investment objectives, financial situation, or particular needs of any individual person. It is not intended to constitute personal investment advice or a recommendation to buy or sell any investment product or security. You should independently evaluate the information and, where necessary, seek advice from a qualified financial adviser regarding the suitability of any investment, taking into account your specific objectives, financial situation and needs, before making any investment decision. Analyst certifications required under applicable regulations, including SEC Regulation AC (where relevant), are included in this report.

Recipients of this report must carefully read, review and understand the full Disclosures / Disclaimers before using or relying on any information in this report. By accessing, receiving or using this report, you acknowledge and confirm that you have read, understood, accepted and agreed to be bound by the Disclosures / Disclaimers (as may be amended or updated from time to time) in full."