

Asia Tech Hardware

Largan: deep dive of communication optics (CPO) market; Upgrading to Outperform; PT=NT\$5,150



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*Many optics companies are expanding into communication optics to capture rising demand from optical transceivers and CPO. This note reviews the technology and product landscape, and we see **Largan** as well positioned to capitalize on this opportunity.*

Optics in communication segments are seeing strong momentum, driven by both ASP expansion and volume growth. We estimate optics content at US\$25+ for 800G DR transceivers and US\$45+ for 1.6T CPO, or c.10%-15% of BOM, respectively. Higher content in CPO is driven by advanced components such as glass/silicon lenses and prisms in FAU, and isolators in ELS. Strong demand for 800G/1.6T transceivers and CPO switch ramp over the next two years expands the TAM.

Key optics products in transceivers/CPOs include lenses, prisms, isolators, and filters. CPO optics is emerging as a key battleground for consumer optics players over the next five years. Lenses focus and couple light, prisms enable compact light routing, isolators prevent back reflection, and filters support wavelength multiplexing in WDM modules. Around 10 suppliers are entering this market, including consumer optics players (Largan, Sunny Optical, etc.) and upstream companies (Cstech, Focuslight, et., both not covered). In optical transceivers, Suna (private) leads the lens market, while Focuslight and Lante (not covered) are catching up this year. CPO products are under qualification or sampling for most of the players; Largan's pilot line will be ready in September this year for customers' assessment.

We upgrade Largan to Outperform, as it can extend its consumer optics expertise into CPO. We had previously rated Largan Market-Perform due to its high reliance on smartphone revenue; however, communication optics introduces a meaningful new TAM in 2028 onward. Largan benefits from strong synergies between lens and prism design across consumer and communication applications. Its in-house automation and tooling capabilities also position it well to address the challenges of high-precision manufacturing, particularly for multi-layer fiber array (FA). Structurally, as the industry shifts from NPO to CPO from 2028 onward, Taiwanese suppliers like Largan should gain from closer collaboration with TSMC.

Sizing the revenue opportunities. We model Largan to capture 15% market share in CPO optics segment by 2028, and generate NT\$4B revenue (or 6% of 2026E total revenue). The revenue size could potentially increase fivefold by 2030 driven by spec upgrade and broader adoption (*revenue model is available upon request*).

We forecast Largan to see 9%/15% revenue/EPS CAGR in 2025–28E. Our EPS estimates are 3%/25% above consensus 2027 and 2028 respectively. As Largan is breaking into a new growth segment, and we see strong upside to consensus 2028 EPS, we increased the P/E to 23x (vs. old 14x), and apply that to 2027-28 average EPS of NT\$224. Our price target increase to NT\$5,150 (old NT\$2,600). Outperform.

BERNSTEIN TICKER TABLE

Ticker	Rating	9 Jun 2026		Price Target	TTM Rel. Perf.	Reported EPS				Reported P/E (x)		
		Cur	Closing Price			Cur	2025A	2026E	2027E	2025A	2026E	2027E
2382.HK (Sunny Optical)	O	HKD	76.75	76.00	(18.2)%	CNY	4.25	3.39	4.46	15.6	19.6	14.9
3008.TT (Largan)	O	TWD	3,885.00	5,150.00	30.5%	TWD	158.08	187.55	208.38	24.6	20.7	18.6
OLD	M			2,600.00				178.50	193.17			
ASIA			1,907.25									

RATING CHANGE / PRICE TARGET CHANGE / ESTIMATE CHANGE IN BOLD

O - Outperform, M - Market-Perform, U - Underperform, NR - Not Rated, CS - Coverage Suspended

Source: Bloomberg, Bernstein estimates and analysis.

INVESTMENT IMPLICATIONS

We rate Largan Outperform, PT = NT\$5,150.00.

We rate Sunny Optical Outperform, PT = HK\$76.00.

DETAILS

Many optics companies are expanding into communication optics to capture rising demand from optical transceivers and CPO. This note reviews the technology and product landscape, and we see Largan as well positioned to capitalize on this opportunity. **Note that in the sector sections of this report, we use “CPO” as a generalized product term that includes both NPO (optical engine on PCB) and CPO (optical engine on substrate).** For more discussion about CPO technology, please find details in [Artificial Intelligence: Inside the War for AI Data Center Connectivity](#)

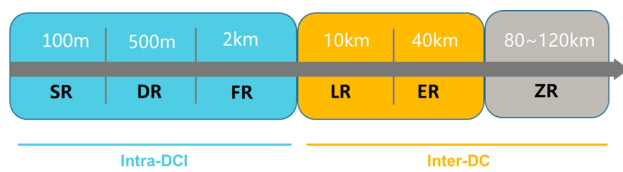
SIZING THE DOLLAR CONTENT OF OPTICS COMPONENTS IN 800G OPTICAL TRANSCEIVER AND CPO

Key optics components in optical transceivers and CPOs are lens, prism, optical isolator and filters. Based on transmission distance, optical transceivers within a datacenter can be classified into SR (<100m), DR (100–500m), FR (500m–2km), among which DR and FR products are the focus in AIDC and each accounts for c.60%+ and 20%+ of total shipment, respectively. Optical components are critical to optical systems, and we estimate that they comprise c.11% of BOM in 800G DR transceivers, rising to c.16% in 800G FR transceivers with the adoption of optical filters.

- **Lens:** Lenses in optical transceivers act like precision “traffic controllers” for light, ensuring that optical signals are efficiently directed from the laser into the fiber (in TOSA (transmit optical sub-assembly)), or from fiber into photodiode (in ROSA (receive optical sub-assembly)). With discrete lenses, each optical channel requires one lens. For example, an 8×100G transceiver has 16 channels and therefore requires 16 lenses. By contrast, microlens array (MLA) reduces this to just two units - one for transmission and one for reception. We model lens cost in an 800G module is US\$6-7.
- **Optical Isolator:** Each optical chip requires one isolator. For example, a conventional 800G EML-based DR optical module using 8 EML chips requires 8 isolators; an 800G silicon photonics DR module using 4 photonic chips requires 4 isolators; in contrast, an 800G FR module only requires one isolator. In terms of ASP, isolators are priced at US\$2–3, of which the Faraday rotator accounts for 1/3 of the cost.
- **Optical Filter:** Optical filters are typically used in FR transceivers but not in DR transceivers (see more details in Technology section). An FR8 800G optical module requires 16 filters across both transmit and receive paths. We assume US\$1 per unit, and a total filter cost of ~US\$16 per module.

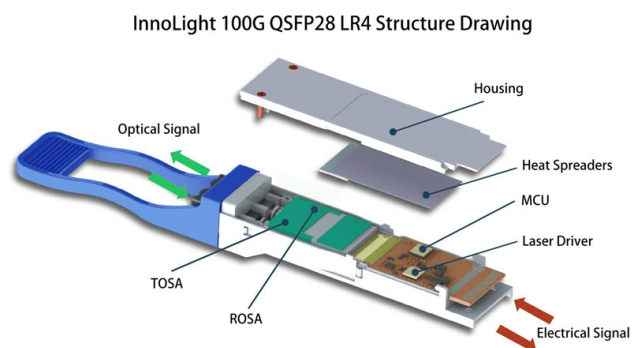
In Co-packaged optics (CPO), the adoption of silicon lenses drives higher ASPs, lifting per-channel lens cost to US\$1-2. Compared to glass lens, silicon lenses are more suitable for CPO given the stringent requirements for ultra-compact size and superior thermal reliability. The ELS (external laser source) also needs glass lens and optical isolator for multi-channel CW laser feeding optical engine. Overall, we expect a total of US\$45+ optics content/optical engine in 1.6T CPO solutions.

EXHIBIT 1: **Classification of optical transceiver modules by transmission distance**



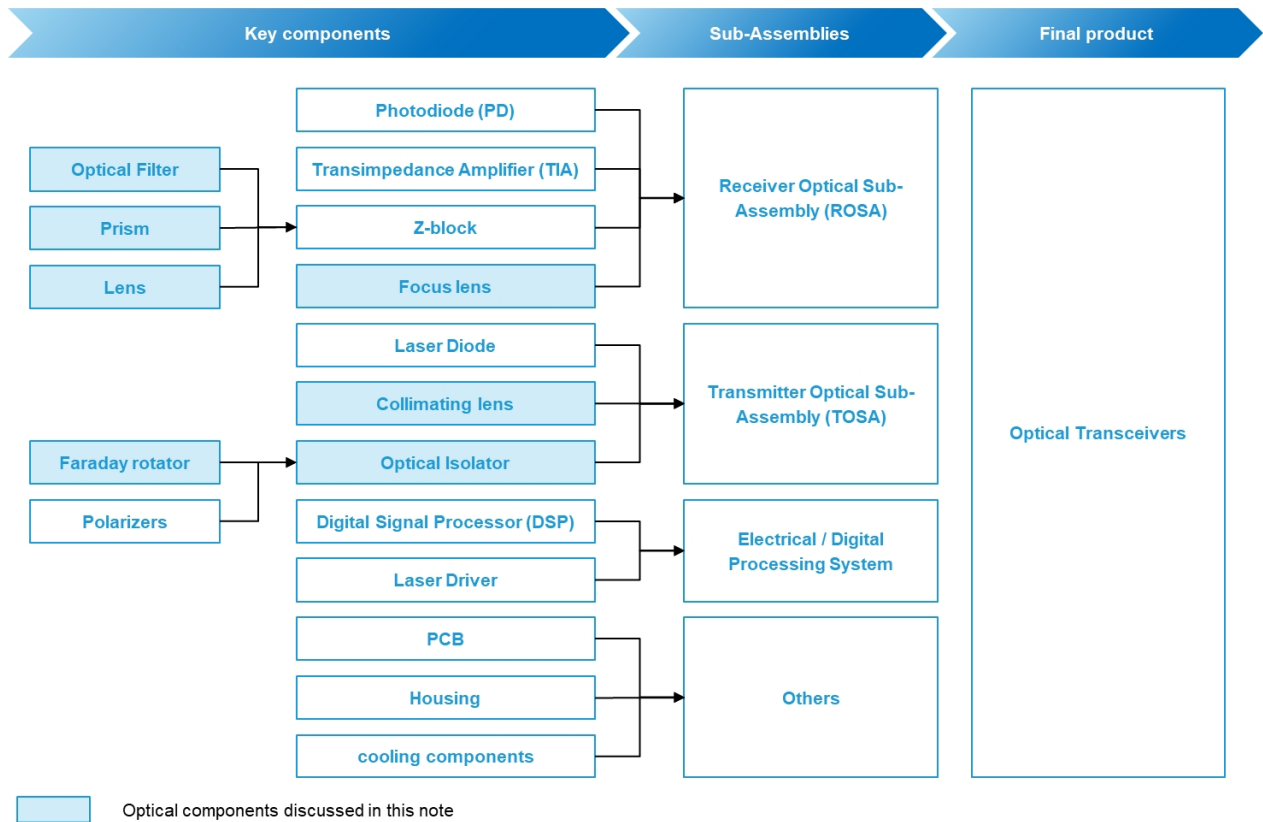
Source: FiberMall

EXHIBIT 2: **Sub-assemblies and key components of optical transceivers**



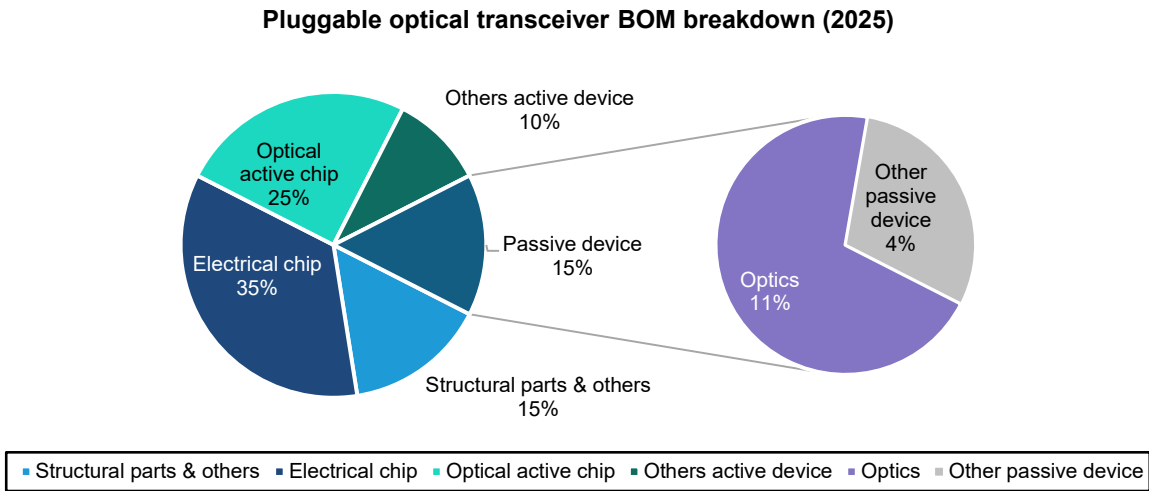
Source: QSFPTEK

EXHIBIT 3: **Structural breakdown of FR optical transceivers and position of optical components**



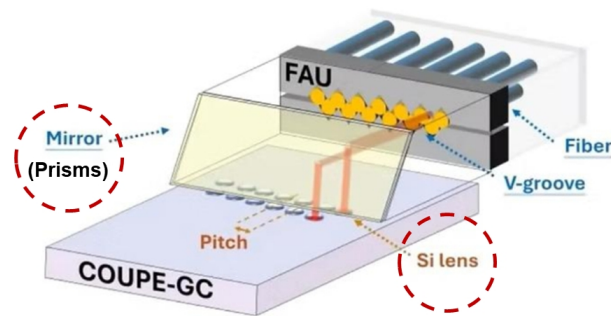
Z-blocks are typically used in FR optical transceivers, whereas DR transceivers do not need them.
Source: Bernstein analysis

EXHIBIT 4: **We estimate optical components comprise c.11% of BOM in 800G DR transceivers**



Source: Bernstein analysis and estimates

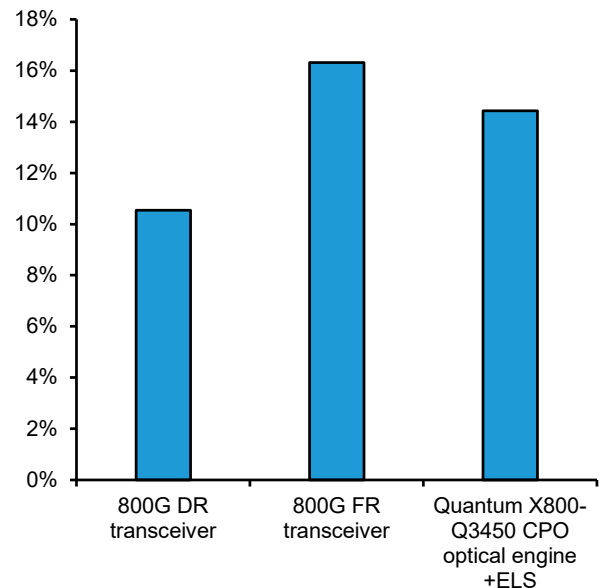
EXHIBIT 5: Optics components in CPO FAU



Source: TSMC, simple_tech_trend, Bernstein analysis

EXHIBIT 6: We estimate that optic components comprise c.10-15% of BOM in 800G DR transceivers / 800G FR transceivers / CPO optical engine

Optics cost as % of total optical transceiver / engine BOM



Source: Bernstein estimates

TECHNOLOGIES OF OPTICAL COMPONENTS

Lens

In optical communications, lenses are primarily used for: **(1) Optical beam focusing:** Microlenses precisely focus the divergent beam emitted by a laser source into the extremely small core of an optical fiber (micrometer level), significantly improving optical power utilization and reducing losses caused by beam divergence. **(2) Beam collimation and shaping:** Microlenses collimate laser light, converting divergent beams into parallel beams to facilitate transmission or subsequent wavelength selection and switching.

Lenses can be categorized in multiple ways: by geometry (spherical vs. spherical), by material (glass, plastic, or silicon), and by integration and packaging form (e.g., discrete lens vs. microlens arrays) (Exhibit 7 - Exhibit 9). In 800G and 1.6T optical transceivers, both glass and silicon lens are being used, but silicon will become the mainstream in CPO.

Prisms

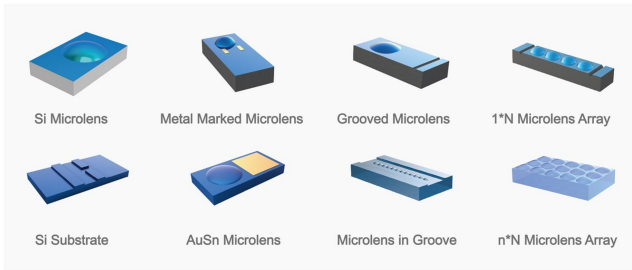
Prisms are optical components formed by multiple intersecting planar surfaces. In optical communications, prisms are used to **redirect optical paths**, enabling light emitted from a laser source to be efficiently folded and guided into an optical fiber. They allow “folding” the light path so the same optical distance fits in a much smaller physical space, cutting module footprint by as much as half (same to the function of periscope camera design in iPhone). In addition, prisms can shape and collimate laser beams, optimizing the divergence angle, reducing insertion loss and enhancing communication performance. Prism, or mirror in **CPO FAU** (fiber array unit) redirect light beams from the fibers to PIC in optical engines (Exhibit 10-Exhibit 11).

EXHIBIT 7: Lenses can be categorized in multiple ways

Classification	Products	Features	Application scenario
Geometry	Spherical lenses	Spherical surfaces Easy to manufacture and low in cost, but poor focusing performance	Low-data-rate optical modules
	Aspherical lenses	Parabolic or free-form surfaces Eliminate aberrations that are inherent to spherical lenses High-quality focusing and coupling performance More difficult and costly to manufacture	High-speed products, such as 800G and 1.6T optical modules
Material	Plastic lenses	Cost advantages but have limited stability	Low-speed (i.e. ≤ 400G) and short-reach optical modules
	Glass lenses	Excellent thermal stability and optical performance	High-speed pluggable optical modules
	Silicon lenses	Highly compatible with silicon photonics (SiPh) platforms High refractive index that enables strong light-confinement and focusing capability	Silicon photonics-based transceiver modules and co-packaged optics (CPO)
Packaging	Single lens	A single high-precision glass aspherical lens offers superior signal-quality preservation compared with mass-produced microlens arrays	Long distance links such as FR (Fiber Reach) optical modules and ZR (Z-Reach) optical modules
	Microlens array (MLA)	Consist of multiple microlenses fabricated simultaneously on a single substrate	High-speed DR (Data Center Reach) optical modules (typically <2km)

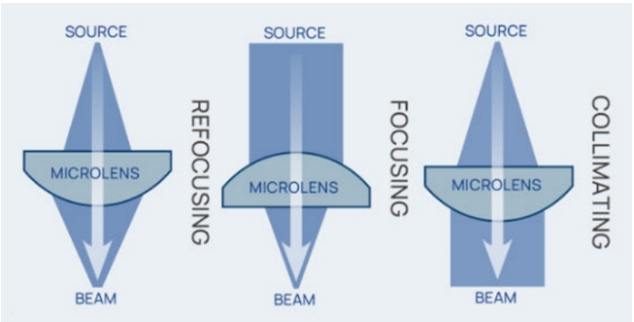
Source: Bernstein analysis

EXHIBIT 8: Microlenses can be categorized into a variety of types

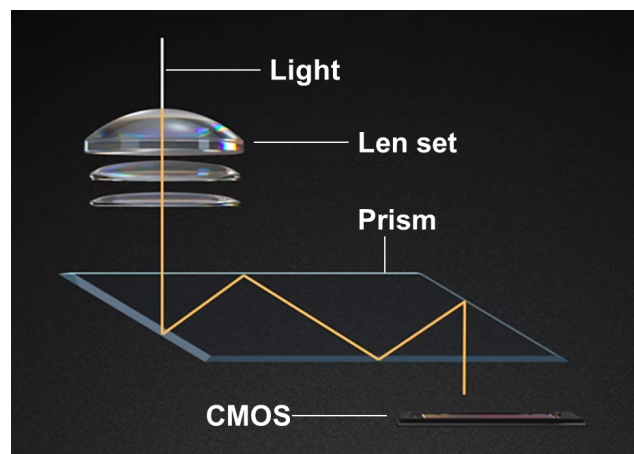


Source: Suna Optoelectronics

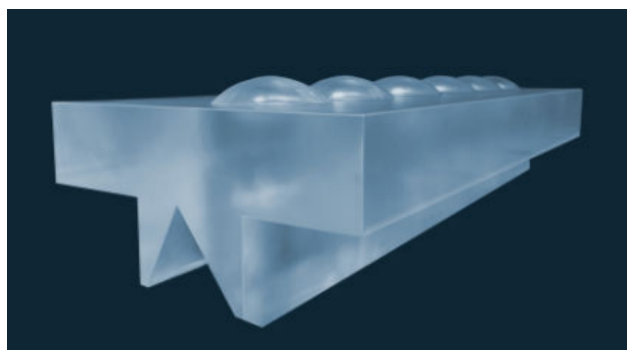
EXHIBIT 9: Lenses are used for optical beam focusing, collimation and shaping



Source: Focuslight

EXHIBIT 10: Prism in smartphone: decipher Periscope Camera in iPhone


Source: ZEALER and Bernstein analysis

EXHIBIT 11: Microprism Lens Arrays combine lenses and prism structures into a single micro-optics component to reduce system complexity


Source: Focuslight

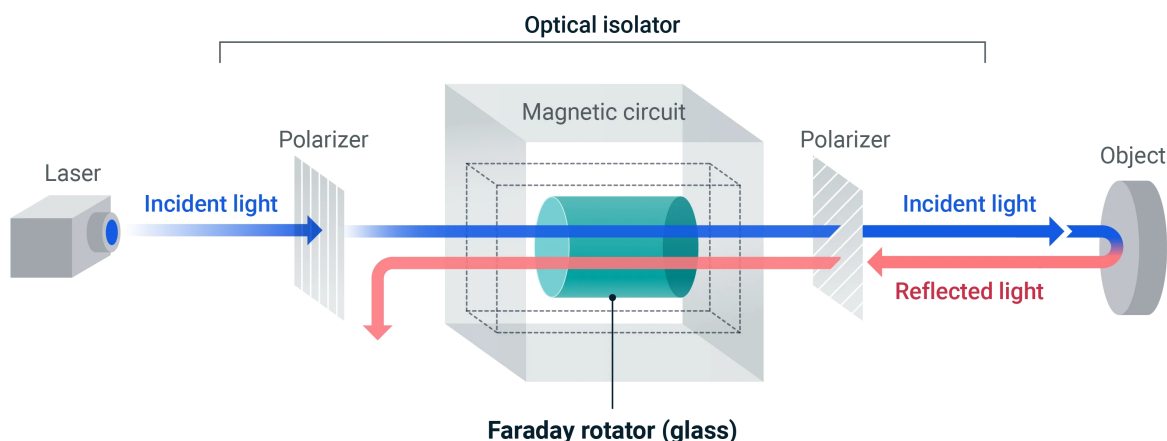
Optical Isolator

An optical isolator is a passive component that allows light to pass in only one direction, preventing back-reflected light from re-entering the laser. In optical transceivers, reflections from connectors, fiber interfaces, or downstream optics can destabilize the laser (e.g., mode hopping, intensity noise) and degrade bit error rates (BER). Optical isolators mitigate reflection issues by exploiting Malus's law and the Faraday magneto-optic effect to suppress reflected light. It typically consists of an input polarizer, a Faraday rotator (magneto-optic crystal), and an output polarizer (analyzer) (Exhibit 12)

Optical Filter

Optical filters provide wavelength selectivity in transceivers. At the transmitter, they help shape and stabilize the emission spectrum to meet channel specifications. At the receiver, they pass the desired wavelength while rejecting out-of-band noise and adjacent channels, improving sensitivity and BER.

These capabilities enable beam splitting and combining, allowing multiple wavelengths to be multiplexed onto a single fiber and demultiplexed at the receiver with precise channel alignment. As such, optical filters are core components in FR transceivers that rely on wavelength-division multiplexing (WDM). In contrast, DR transceivers (single-wavelength links) typically do not require such filters beyond basic spectral control.

EXHIBIT 12: An optical Isolator consists of polarizers and a Faraday rotator, which includes a magnet and Faraday rotation medium


Source: Nippon Electric Glass

COMPANY SECTION

EXHIBIT 13: Summary of Optics players in AI datacenter

Ticker	Company		Mkt Cap (US\$B)	1-year stock price	Forward P/E	Revenue (US\$M)		GPM %		EPS (US\$)	
	EN	CN				2025	25-27E CAGR	2025	2027E	2025	25-27E CAGR
Optics supplier											
3008 TT Equity	Largan	大立光	14.6		20x	1,967	6%	50%	52%	5.13	12%
2382 HK Equity	Sunny Optical	舜宇光学	10.6		16x	6,017	12%	20%	20%	0.59	4%
002273 CH Equity	Crystal-Optech	水晶光电	7.0		31x	964	24%	31%	22%	0.12	26%
3406 TT Equity	Genius	玉晶光	2.3		19x	804	4%	33%	34%	1.06	9%
688195 CH Equity	Optowide	腾景科技	5.7		240x	82	40%	37%	41%	0.05	66%
688167 CH Equity	Focus Light	炬光科技	5.5		245x	122	44%	36%	44%	-0.06	N.A.
688127 CH Equity	Lante Optics	蓝特光学	4.8		43x	214	43%	43%	44%	0.13	54%
301183 CH Equity	DOTI Micro	东田微	2.3		68x	122	51%	24%	28%	0.18	90%
Optics material supplier											
002222 CH Equity	CASTECH	福晶科技	6.0		85x	161	38%	51%	56%	0.08	N.A.

Bernstein covers Largan and Sunny Optical, but not the rest; pricing date June 9, 2026

Source: Bloomberg, Bernstein analysis

EXHIBIT 14: Summary of major optical component suppliers

	Communication optics			Other sectors			Note
	Transceivers	CPO	OCS	Consumer electronics	Autos	Others	
Largan		○		★			Global leader in handset lenses; developing prisms and collimators for CPO applications
Sunny Optical		○		★	★		Leading provider of handset and automotive camera lenses and modules; early stage of developing communication optics products
Lante Optics	▲	○		★			Leading supplier of lenses, prisms, and optical wafers; Previously focused on consumer electronics, now expanding into networking
Crystal-Optech	○	○		★	▲	▲	Leading prism supplier in Apple supply chain; Target to mass-produce filters in transceivers in 2H2026, and CPO products in 2028
Genius		○		★		▲	Leading supplier of handset lens and modules; Aiming to generate initial revenue in 2026 and commence volume shipments in 2027
Focus Light	▲	▲	▲	▲	★	★	Focus on Industrial, semi and autos sectors; Supplying lenses and MLAs for optical communication
Optowide	★	▲	▲	▲		▲	Product portfolio includes yttrium vanadate crystals (for OCS), filters, prisms, lenses, fiber optic components, and optical testing equipment
DOTI Micro	★			★			Optical isolators in volume shipment; filters in sampling stage; Z-block and prism products under development
CASTECH	▲			▲	▲	★	Leader in nonlinear optical crystals (component of Faraday rotators); also offers lenses and prisms, serving sectors like industrial, autos, etc.

○ R&D or Sampling ▲ <10% of revenue ; ★ Major business

Bernstein covers Largan and Sunny Optical, but not the rest

Source: Company reports, Bernstein analysis

Optical component players can be broadly categorized into two groups: 1) downstream, consumer electronics–focused companies seeking new growth drivers, and 2) upstream optical component and material suppliers with multi-sector exposure

and a longstanding presence in optical communications, now benefiting from surging AI demand.

- **Downstream, consumer electronics-focused players**, including **Largan, Sunny Optical, Genius, Crystal-Optech and Lante Optics**, typically have larger revenue scale and stronger financial resources than upstream suppliers. Among them, **Sunny optical** has a wide industry exposure, and offers vertically integrated solutions with c.65% of revenue coming from module assembly. While it's expanding the Apple business, Android still represents c.80% of its smartphone business. In comparison, **Largan, Genius Electronics, Crystal-Optech**, and **Lante Optics** focus on optic components including lens and prism, maintaining >60% of their total revenue to Apple.
- **Upstream optical component and material suppliers**, such as **Castech, Focuslight, DOTI Micro and Optowide**, generally exhibit smaller revenue bases and broader industry exposure. Most have established positions in optical communications, led by Optowide and DOTI Micro with over 80% and 30% revenue exposure in 2025, respectively. Product-wise, these players typically offer a broad portfolio, with Castech leading in Faraday rotators, Focuslight in microlens arrays (MLA), DOTI Micro in optical isolators, and Optowide known for yttrium vanadate crystals.

Largan (OP, TP TWD 5,150.00)

- Largan is a leading manufacturer of plastic lenses. The company generates about 90% of its revenue from consumer electronics, with Apple contributing ~60% in 2025, based on our estimates. The company is sampling its CPO optics with customers, and we believe the product offerings include prism and lens in FAU, as well as fiber array (FA). Management is prioritizing this business among all non-smartphone business, and think it will take another year for mass production.

Sunny Optical (OP, TP HK\$76.00)

- Sunny is the largest smartphone camera and module company globally. Smartphone and auto each represents c. 65% and 15%+ of company's revenue, with the rest attributed to AR/VR and others. In optical connectivity, the company has built a dedicated team and recently appointed Dr. Gu Bo as CTO, an academician of the Canadian Academy of Engineering and Deputy Secretary-General of the Chinese Optical Society. We believe the company is in the early stages of product development and customer engagement, and we expect to hear more updates on their progress in communication optics at their Investor Day (late-June) or 1H26 earnings (late-Aug).
- Unlike other sampled companies that focus on components or upstream materials, over half of Sunny's revenue comes from camera module assembly, which resulted in high ASP but low gross margin compared to components companies. **We therefore exclude Sunny in following financial comparison across optics companies.**

Genius Electronic Optical (3406 TT, not covered)

- Genius is a major handset and VR lens supplier, competing with Largan and Sunny Optical. The company has announced plans to enter the CPO segment, developing components such as V-grooves and prisms. Management indicates that sampling and customer validation of CPO products are underway, with volume shipments expected to begin in 2027–28.

Lante Optics (688127 CH Equity, not covered)

- The company primarily supplies prisms and lenses, which contributed c.60% and c.25%, in 2025, respectively. Being a major supplier for iPhone prism, consumer electronics represents >60% of corporate revenue, and the rest of revenues are generated from auto, communication, AR and others. Lante's key products in communication optics are glass lens, serving an emerging optical transceiver company. They are also exploring Si lens, as well as other optical component in FAU for CPO next year. Compared with established leader [Suna Optoelectronics \(private\)](#), Lante remains at an early stage for Si lens.

Crystal-Optech (002273 CH Equity, not covered)

- The company supplies camera components such as lenses, prisms, and optical filters. Consumer electronics dominates its revenue mix (85% in 2025), followed by automotive (8%). The company started supplying prism to iPhone 15 series back in 2023, competing with Lante. Apple represents c.60% of revenue.

- The company hosted an investor day in May 2026, laying out its business opportunities in non-consumer segment. It targets to mass produce CWD filters in 2H26 and is currently sampling lens products to optical transceivers. The company is engaging with overseas material companies and customers to prepare for CPO-related products in 2028–2030. In addition to optical communication, Crystal Optech also prepared to enter into glass substrate market for HAMR-based HDD. Overall the company expects revenue mix from consumer will decrease to 50% over the long term.

FocusLight (688167 CH Equity, not covered)

- The company specializes in optical components, offering a broad portfolio of lasers, lenses, and related modules and systems. Its products are widely used in semiconductor, automotive, and medical applications. In 2025, optical communications accounted for ~8% of revenue (RMB 66 million), up over 130% YoY. The company is accelerating expansion in optical connectivity, supplying lenses for pluggable optical modules and OCS switches, contributing 70%-80% and 20%-30% of segment revenue in 1Q26, respectively. In the CPO area, it is developing precision [molded lenses, micro-prism arrays, and V-grooves](#), currently under sample validation.
- In 2024, the company's GPM and OPM declined significantly due to the acquisitions of two Swiss optical companies (SUSS MicroOptics SA and Heptagon), which led to higher production costs, as well as increased integration and financial expenses.

DOTI Micro (301183 CH Equity, not covered)

- DOTI's key end markets are consumer electronics and optical connectivity, which accounted for 66% and 31% of revenue in 2025, respectively. Products in optical transceivers include filter and optical isolators, which doubles segment revenue last year. However, gross margin in this segment declined 2ppts YoY to 19.7%, and was lower than consumer segment. This is likely driven by overhead of ramping up new production line, and unfavorable product mix in communication segment. The company is expanding its product portfolio to Z-blocks and prism.
- The company's GPM and OPM were particularly weak in 2023, primarily due to soft demand and pricing pressure in the consumer electronics market. The subsequent recovery in the sector supported a rebound in financial performance in 2024 and 2025.

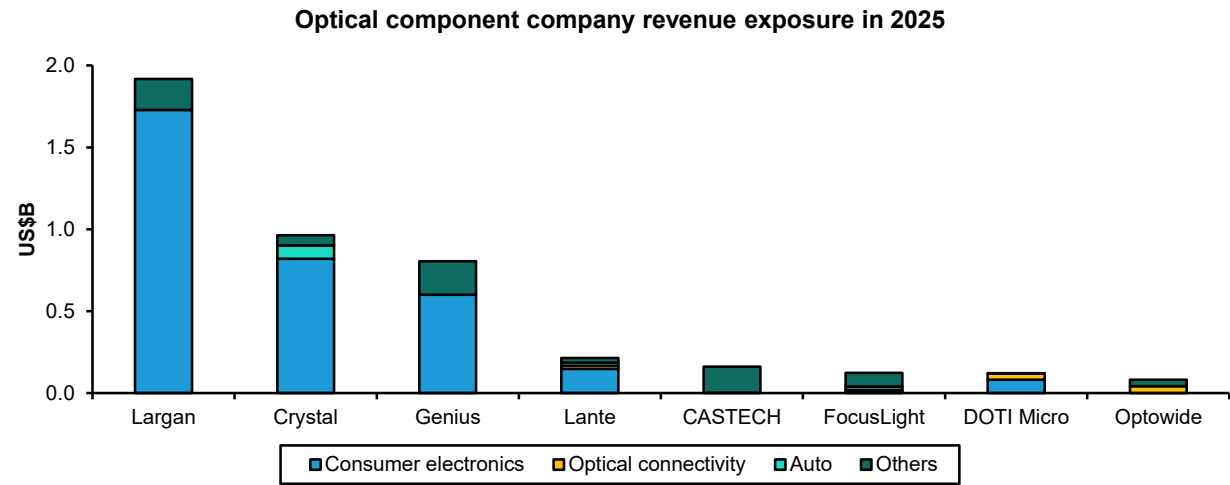
Optowide (688195 CH Equity, not covered)

- Optowide offers precision components such as YVO_4 crystals, filters, and beam splitters, as well as fiber-optic devices and testing instruments. In 2025, optical communications, fiber lasers, and other segments accounted for 79%, 16%, and 5% of revenue, respectively.
- The company has established a presence across multiple optical interconnect segments, including supplying filters for optical modules, and developing CPO connectors. Its ability to produce large-size yttrium vanadate crystals positions it to benefit from OCS opportunities and raises its visibility as a Google supply chain play. The company has established long-term collaborations with key industry leaders such as Innolight, Accelink, and Coherent (all not covered).

CASTECH (002222 CH Equity, not covered)

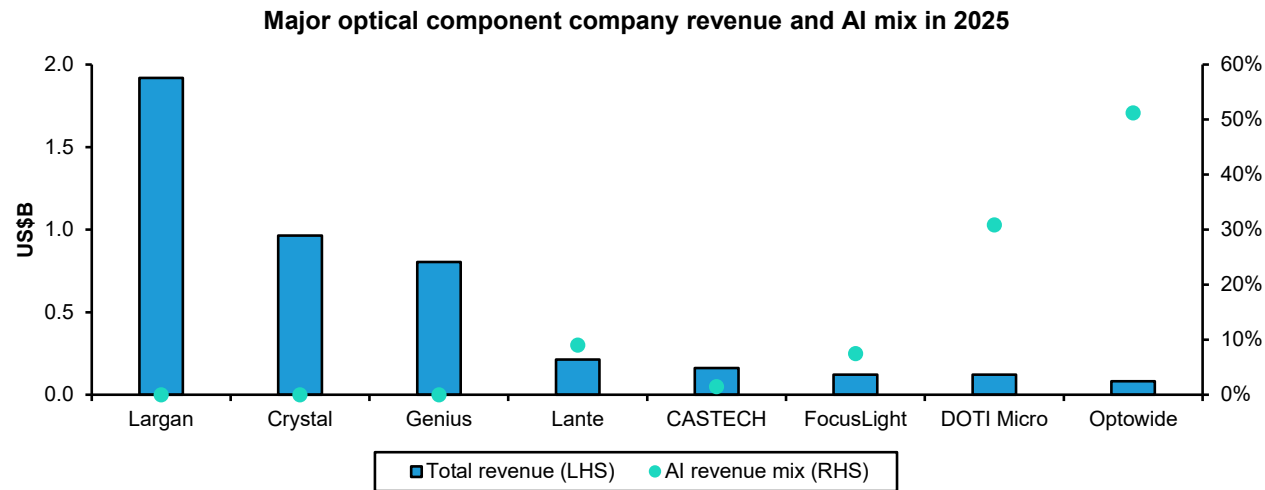
- The company provides crystal components (e.g., nonlinear optical crystals), precision optical components (including windows, mirrors, lenses, and prisms), and laser devices such as Faraday rotators, with applications spanning optical communications, automotive, aerospace, and medical sectors. It has in-house capability to produce scarce SGGG crystals, a key material for Faraday rotators used in optical isolators.

EXHIBIT 15: **Downstream, consumer electronics-focused players, including Largan, Crysta-Optech and Lante Optics, typically have larger revenue scales ...**



Source: Bloomberg, company reports, and Bernstein analysis

EXHIBIT 16: **...while upstream optical component and material suppliers typically hold established positions in the AI optical communication sector**

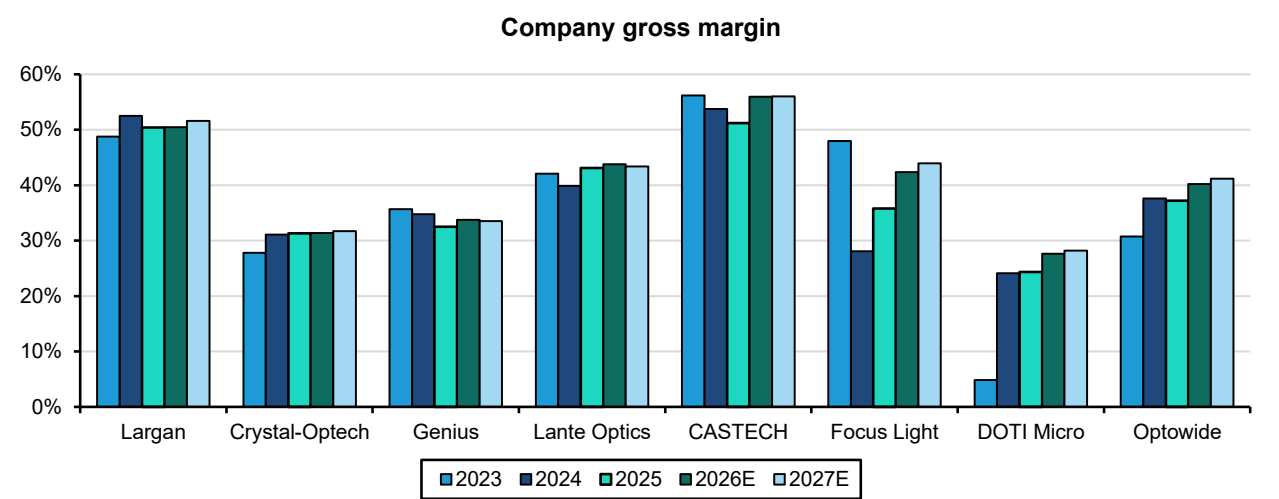


CASTECH hasn't disclosed its AI revenue mix

Source: Company reports, Bloomberg, Bernstein analysis and estimates

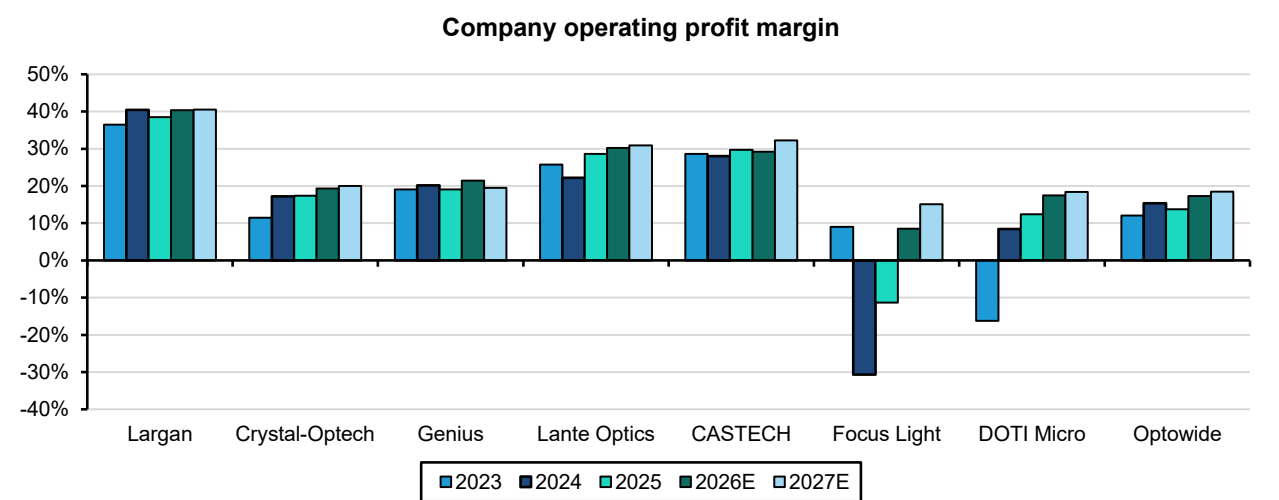
EXHIBIT 17: **Largan leads in revenue scale, while upstream players remain relatively small**

EXHIBIT 19: **Companies with higher AI exposure (Focus, DOTI, and Optowide) are well positioned for margin expansion over 2026–27E...**

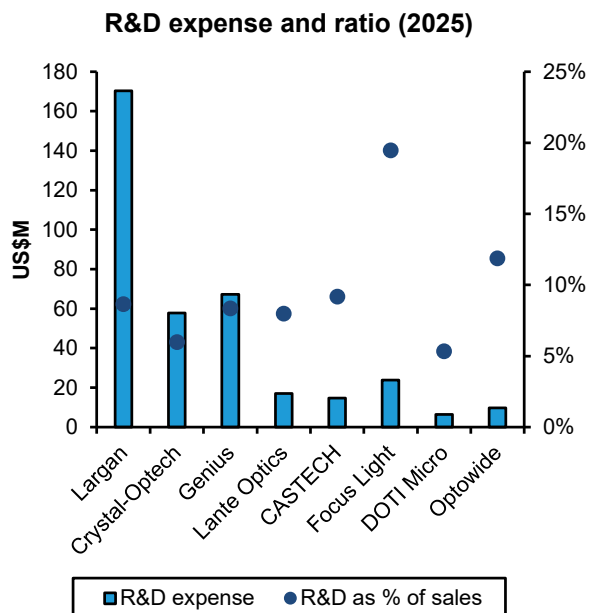


Forecasts from Bloomberg consensus
Source: Bloomberg and Bernstein analysis

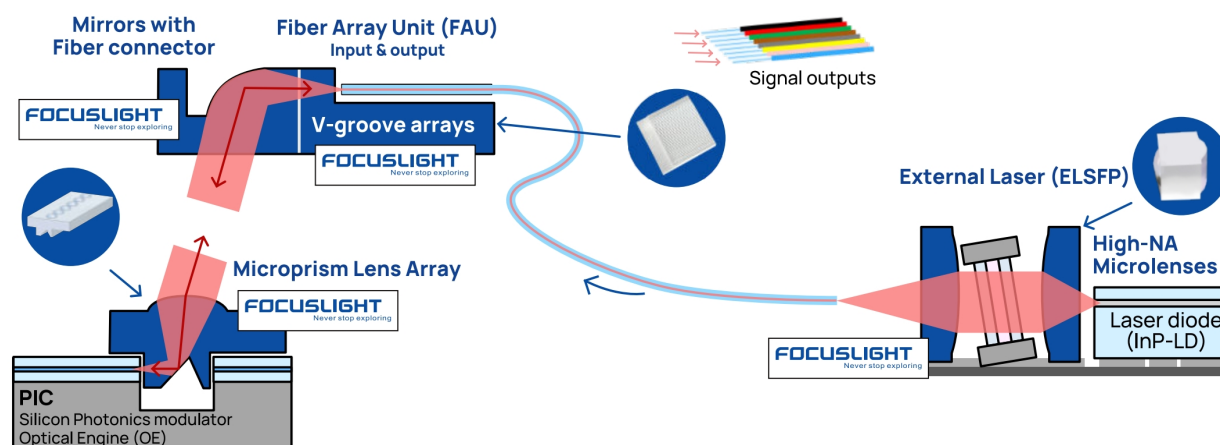
EXHIBIT 20: **Operating profit margin estimates by optics companies**



Forecasts from Bloomberg consensus
Source: Bloomberg and Bernstein analysis

EXHIBIT 21: Largan has highest R&D budget among peers


Source: Company reports, Bernstein analysis

EXHIBIT 22: Focuslight's photonics solutions for optical communications include microprism lens array, high-NA microlenses, and V-groove arrays


Source: Focuslight

UPGRADING LARGAN TO OUTPERFORM, PT=NT\$5150

We upgrade Largan to Outperform as we see the company replicating its success in consumer electronics lens to CPO components, which are critical for future AI datacenter connectivity. The stock had been rated Market-Perform since our sector initiation ([link](#)), reflecting its concentrated smartphone exposure and a thesis anchored on handset demand and camera spec upgrades. Communication optics now opens a new and structurally growing TAM, with recurring spec migrations in CPO driving attractive, sustainable profitability.

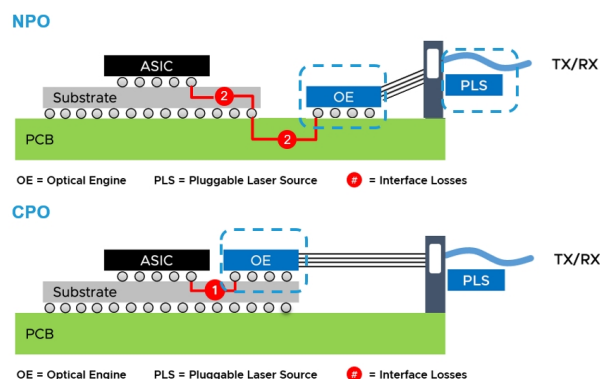
On technologies, we see clear synergies between Largan's lens/prism know-how in consumer devices and requirements in communication optics. The company has a strong moat in precision glass molding, optical design, and process IP, and its in-house automation/tooling capability underpins execution in high-precision manufacturing. After more than two years of R&D in

communication optics, Largan has achieved product alignment of below 0.3 μm , versus 0.5–0.8 μm for peers. The company is also investing in multi-layer fiber-stacking technology, which we view as essential for next-generation CPO architectures as the industry evolves from scale-out to scale-up designs. Structurally, as the market transitions from NPO (optical engine on PCB) to CPO (optical engine on substrate), we expect Taiwanese suppliers to benefit from tighter collaboration with leading foundries such as TSMC. (For more discussion about CPO technology, please find details here [Artificial Intelligence: Inside the War for AI Data Center Connectivity](#)).

We model Largan to generate NT\$4B of revenue from CPO by 2028, and potentially reach NT\$20B+ by 2030, or c.30% of Largan's total revenue this year. On 9th June, management shared updates in [shareholder's meeting](#) that a pilot line for communication optics will be ready by September this year for customers' assessments. Volume production will take another half year to one year. We model Largan to capture 15% market share in CPO optics segment by 2028, and generate NT\$4B revenue (or 6% of 2026E total revenue). The revenue size could potentially grow fivefold by 2030 as number of optical engine scale and content value of optics increases driven by spec upgrade. Largan's revenue contribution from non-smartphone could therefore increase from 9% this year to c. 15% by 2028 (*CPO revenue model is available upon request*).

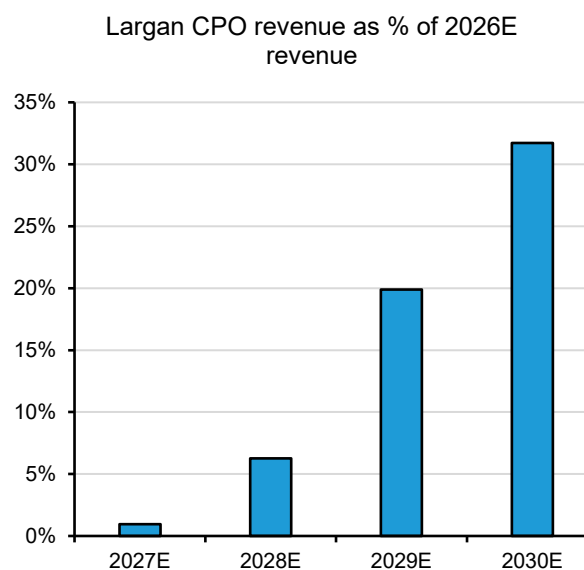
We forecast Largan to see 9%/15% revenue/EPS CAGR in 2025–28E. We model revenue to grow high-single-digit this year driven by strong iPhone 17 series in 1H26, and adoption of variable aperture lens in iPhone 18 Pro and Pro Max. A recovery of Android market is likely to support Largan's topline growth in 2027, and CPO optics should become a new growth driver in 2028. We model the company growth margin to gradually recover 53% by 2028, as CPO products are margin accretive. **Our EPS estimates are 3% above consensus in 2027, and 25% above in 2028.** As Largan is breaking into a new segment, and we see strong upside to consensus 2028 EPS, we increased the P/E to 23x (vs. old 14x), and apply that to 2027-28 average EPS of NT \$224. Our price target increase to NT\$5,150.00 (old NT\$2,600). Outperform.

EXHIBIT 23: NPO keeps OE adjacent to the switch ASIC on PCB, while CPO integrates OE with the ASIC on substrate directly



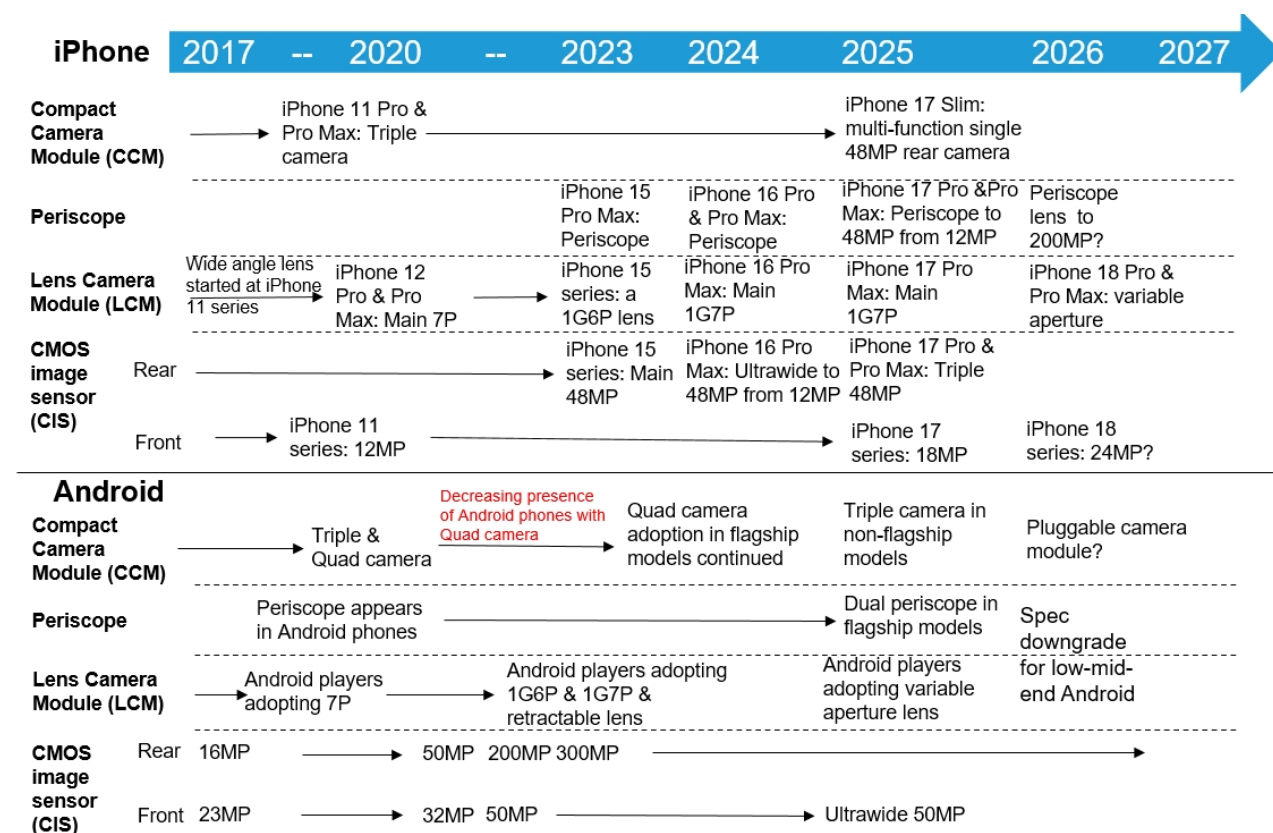
Source: Broadcom

EXHIBIT 24: We model Largan to generate NT\$4B of revenue from CPO by 2028, and potentially reach NT\$20B+ by 2030, or c.30% of Largan's total revenue this year

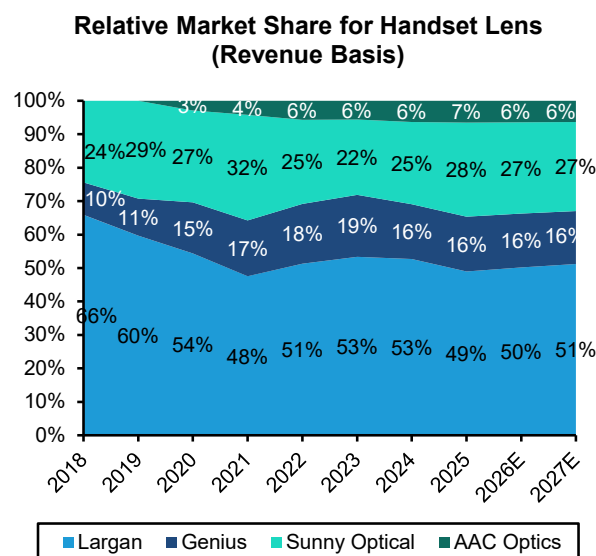


Source: Company reports, Bernstein estimates and analysis

EXHIBIT 25: Tech upgrades for iPhone and Android Handsets



Source: TSR, Counterpoint, Gulf-insider, TechRadar, Nanoreview, Company reports, Bernstein estimates and analysis

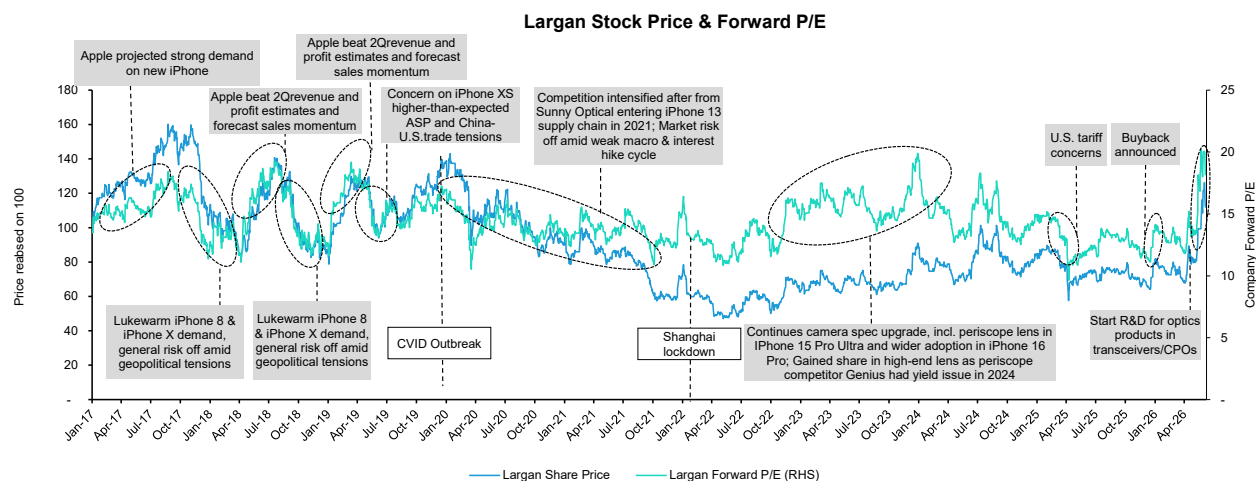
EXHIBIT 26: We expect Largan's revenue share in consumer electronics to be stable around 50%


Source: Company reports, Bloomberg, Bernstein estimates and analysis

EXHIBIT 27: We are more positive than consensus for 2028 estimates

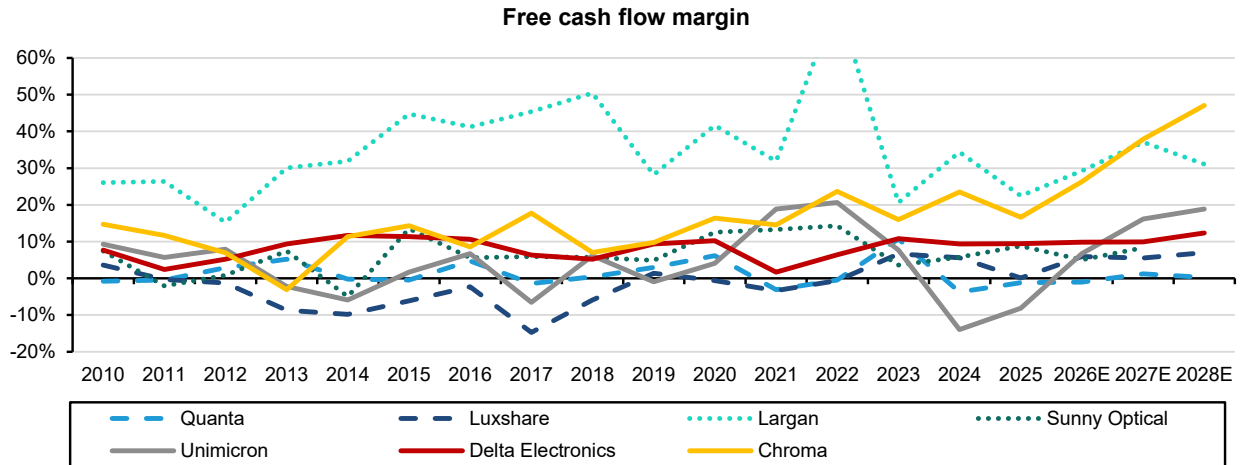
Largan Comparison Table	2026E	2027E	2028E
Revenue (NT\$ B)			
Bernstein Old	66	70	
YoY	8%	6%	
Bernstein	67	71	80
YoY	9%	7%	12%
Consensus	66	69	70
YoY	7%	5%	2%
New vs. old	1%	2%	
BERN vs. consensus	1%	3%	14%
GM			
Bernstein Old	52.3%	52.8%	
Bernstein	50.1%	52.0%	53.4%
Consensus	50.5%	51.6%	52.2%
New vs. old	-2.2%	-0.8%	
BERN vs. consensus	-0.3%	0.4%	1.3%
OPM			
Bernstein Old	40.1%	41.1%	
Bernstein	38.4%	40.8%	42.4%
Consensus	39.0%	40.3%	40.3%
New vs. old	-1.8%	-0.3%	
BERN vs. consensus	-0.6%	0.5%	2.2%
Diluted EPS (NT\$)			
Bernstein Old	179	193	
YoY	16%	8%	
Bernstein	188	208	240
YoY	19%	11%	15%
Consensus	189	203	192
YoY	20%	8%	-5%
New vs. old	5%	8%	
BERN vs. consensus	-1%	3%	25%

Source: Company reports, Bloomberg, Bernstein estimates and analysis

EXHIBIT 28: Largan experienced a re-rating since it started R&D for optical products in CP0


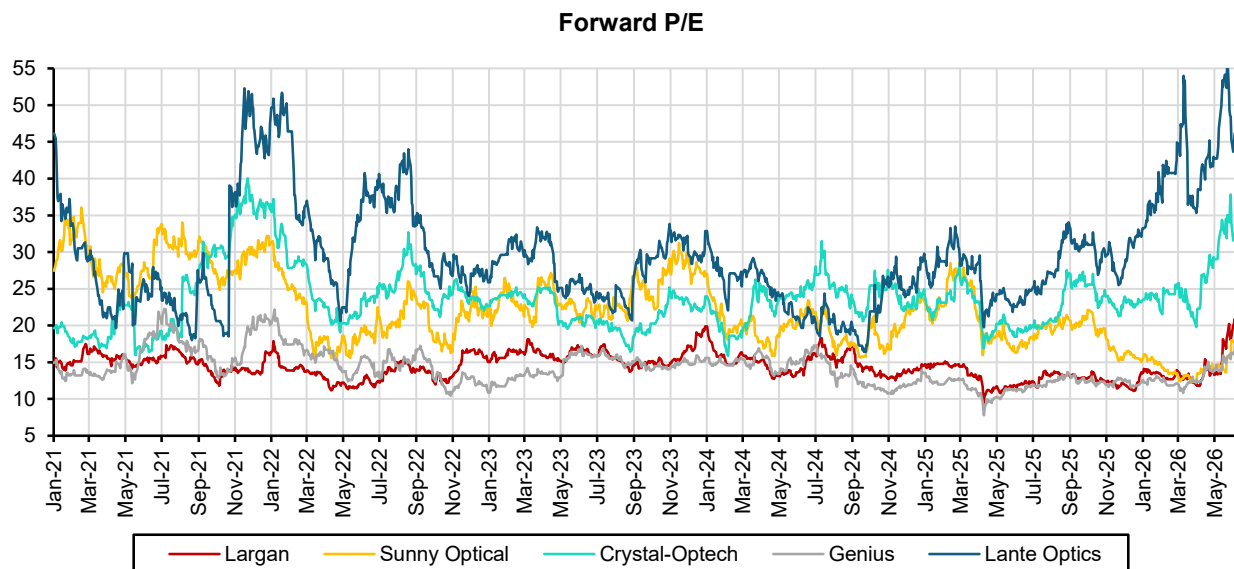
Source: Bloomberg, Bernstein analysis

EXHIBIT 29: **Largan's FCF margin is one of the highest among our covered tech hardware companies**



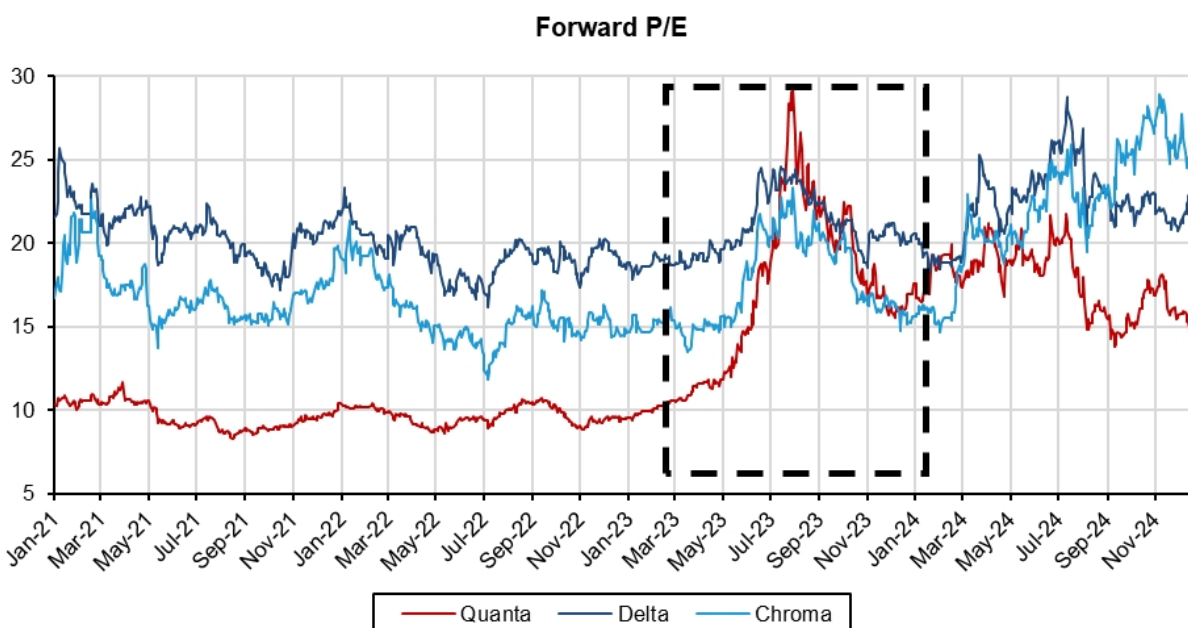
Source: Bloomberg, Bernstein analysis and estimates

EXHIBIT 30: **Forward P/E for optics companies**



Source: Bloomberg, Bernstein analysis

EXHIBIT 31: Largan's progress in AI is similar to year 2023 for other AI companies in our coverage. Valuation is likely to be volatile in investment phases. Longer-term we think it deserves a re-rate.



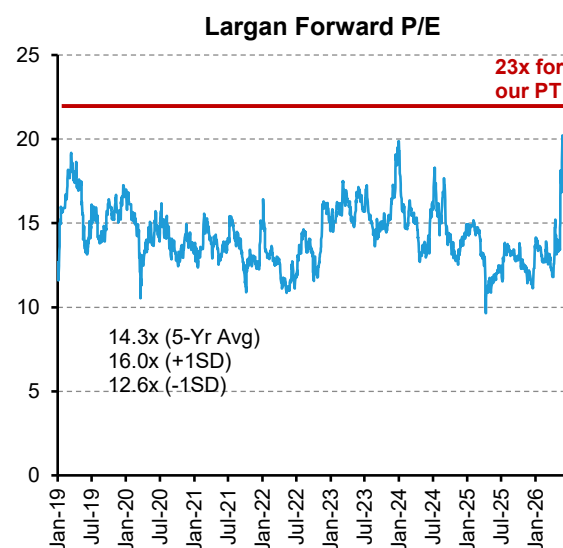
Source: Bloomberg and Bernstein analysis

EXHIBIT 32: We apply 14.5x P/E on smartphone and 50x P/E for CPO business in 2030. And that implies a 23x target P/E

2030 EPS (NT\$)		Notes
Smartphone	243	Historical average P/E for Largan CPO revenue to grow 60% in 2030
CPO	68	
P/E for 2030 EPS		
Smartphone	14.5x	
CPO	50x	
Stock price for 2030 (NT\$)	6,937	
Smartphone	3,520	
CPO	3,417	
Annual discount rate	13%	
PT for June-2027	5,111	
Average of 2027-28 EPS	224	
P/E	22.8x	

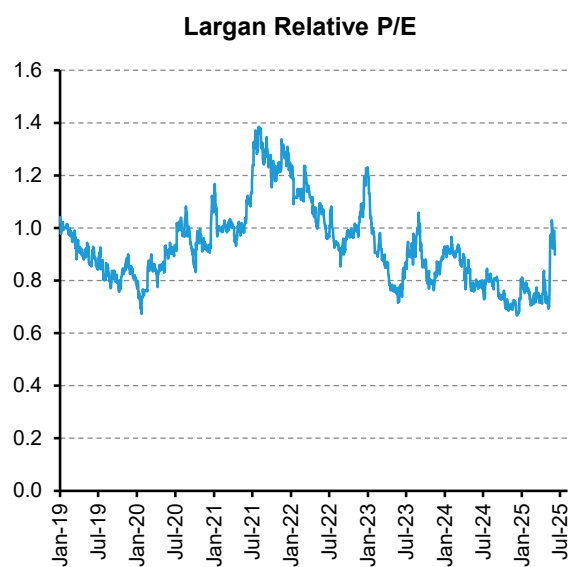
Source: Company reports, Bernstein analysis and estimates

EXHIBIT 33: We increased target P/E to 23x for Largan



Source: Bloomberg, Bernstein estimates and analysis

EXHIBIT 34: **Largan's relative valuation to TWSE index is 0.9x, close to the historical average**



Source: Bloomberg, Bernstein estimates and analysis

APPENDIX - FINANCIAL FORECASTS

EXHIBIT 35: Largan's Financial Statements

TWD in Millions	2022	2023	2024	2025	2026E	2027E	2028E
Income Statement							
Net Sales	47,675	48,842	59,458	61,148	66,560	71,256	80,022
Gross Profit	26,096	23,806	31,209	30,837	33,367	37,070	42,756
SG&A Expense	1,545	1,795	1,930	1,985	2,090	2,134	2,284
R&D Expense	4,154	4,191	5,247	5,293	5,723	5,864	6,499
EBIT	20,384	17,807	24,033	23,558	25,554	29,062	33,963
EBITDA	25,502	23,229	30,262	31,290	34,311	38,448	44,043
Pretax Income	27,827	22,102	32,174	25,900	29,977	33,341	38,622
Tax	5,202	4,200	5,963	4,340	4,859	5,457	6,566
Net Income	22,625	17,902	25,915	21,275	24,906	27,673	31,845
Earnings Per Share (TWD) (Diluted)	167.0	133.0	192.4	158.1	187.5	208.4	239.8
Margin Analysis							
Gross Profit	54.7%	48.7%	52.5%	50.4%	50.1%	52.0%	53.4%
EBIT	42.8%	36.5%	40.4%	38.5%	38.4%	40.8%	42.4%
EBITDA	53.5%	47.6%	50.9%	51.2%	51.5%	54.0%	55.0%
Net Income	47.5%	36.7%	43.6%	34.8%	37.4%	38.8%	39.8%
Sequential Growth							
Net Sales	1.5%	2.4%	21.7%	2.8%	8.9%	7.1%	12.3%
EBIT	-11.9%	-12.6%	35.0%	-2.0%	8.5%	13.7%	16.9%
Net Income	21.2%	-20.9%	44.8%	-17.9%	17.1%	11.1%	15.1%
Earnings Per Share	21.0%	-20.3%	44.6%	-17.8%	18.6%	11.1%	15.1%
Balance Sheet							
Cash and Cash Equivalents	110,172	107,490	113,658	115,942	126,158	137,547	148,407
Accounts Receivable	8,681	11,060	11,307	11,454	11,712	12,415	13,812
Inventory	5,191	4,591	5,733	6,713	6,614	6,574	7,219
Net Fixed Assets	37,831	41,135	46,936	51,472	52,809	54,102	56,014
Total Assets	184,970	195,138	216,527	220,787	234,169	249,643	268,102
Accounts Payable	1,690	1,732	1,855	1,728	1,754	1,797	2,037
Total Debt	19	0	203	0	0	0	0
Total Equity	155,109	165,510	183,519	188,867	192,710	207,931	225,939
Cash Flow							
Cash Flow From Operations	44,207	18,199	31,579	26,080	34,771	34,572	36,746
Cash Flow From Investments	(9,793)	(11,151)	(16,066)	(9,236)	(10,093)	(10,730)	(12,049)
Cash Flow From Financing	(14,673)	(9,750)	(10,764)	(13,458)	(15,506)	(12,453)	(13,837)
Depreciation & Amortization	5,118	5,422	6,230	7,732	8,756	9,386	10,081
Capex	(8,257)	(8,237)	(11,133)	(12,340)	(10,022)	(10,730)	(12,049)
FCF	29,899	6,484	13,813	11,791	21,044	20,263	20,830
As % of EBITDA	117%	28%	46%	38%	61%	53%	47%
Key Financial Metrics							
ROE	15.2%	11.2%	14.8%	11.4%	13.1%	13.8%	14.7%
ROA	12.6%	9.4%	12.7%	9.9%	11.0%	11.5%	12.4%
Debt / Equity	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Net Debt / Equity	-74.2%	-67.1%	-64.7%	-61.6%	-65.4%	-67.9%	-67.6%
Debt / Capital	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%
Dividend Per Share (TWD)	109.7	72.5	81.0	85.5	81.0	94.8	105.4
Dividend Payout Ratio	78.4%	42.8%	60.4%	44.0%	50.0%	50.0%	50.0%

Source: Company reports, Bernstein analysis and estimates

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VALUATION METHODOLOGY**Sunny Optical Technology Group Co Ltd**

We set a HK\$76 target price using a P/E multiple of 17x against our 2026-27 average EPS estimate of RMB3.9

Largan Precision Co Ltd

We set a NT\$5,150 target price using a P/E multiple of 23x against our 2027-28 average forward EPS estimate of NT\$224

RISKS**Sunny Optical Technology Group Co Ltd**

Downside risks to our target price for Sunny Optical include:

- Stronger-than-expected margin pressure due to memory price hike
- Weaker-than-expected Android phone market
- Slower-than-expected pace of ADAS penetration worldwide as well as other technological improvement for auto camera
- Slower-than-expected AR/VR adoption globally

Largan Precision Co Ltd

Downside risks to our target price for Largan include:

- Slower-than-expected CPO/NPO adoption by 2028 and potential failure of Largan's product qualification in CPO/NPO
- Weaker-than-expected replacement cycle for iPhone 18
- Stronger-than-expected competition and hence bigger-than-expected share loss on major customers

RATINGS DEFINITIONS, BENCHMARKS AND DISTRIBUTION**EQUITY RATINGS DEFINITIONS****Bernstein brand**

The Bernstein brand rates stocks based on forecasts of relative performance for the next 12 months versus the S&P 500 for stocks listed on the U.S. and Canadian exchanges, versus the Bloomberg Europe Developed Markets Large and Mid Cap Price Return Index EUR (EDME) for stocks listed on the European exchanges and emerging markets exchanges outside of the Asia Pacific region, versus the Bloomberg Japan Large and Mid Cap Price Return Index USD (JPL) for stocks listed on the Japanese exchanges, and versus the Bloomberg Asia ex-Japan Large and Mid Cap Price Return Index (ASIAAX) for stocks listed on the Asian

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Bernstein brand stock ratings are based on a 12-month time horizon.

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The Autonomous brand rates common stocks as indicated below. As our benchmarks we use the Bloomberg Europe 500 Banks And Financial Services Index (BEBANKS) and Bloomberg Europe Dev Mkt Financials Large and Mid Cap Price Ret Index EUR (EDMFI) index for developed European banks and Payments, the Bloomberg Europe 500 Insurance Index (BEINSUR) for European insurers, the S&P 500 and S&P Financials for US banks and Payments coverage, S5LIFE for US Insurance, the S&P Insurance Select Industry (SPSIINS) for US Non-Life Insurers coverage, and the Bloomberg Emerging Markets Financials Large, Mid and Small Cap Price Return Index (EMLSF) for emerging market banks and insurers and Payments. Ratings are stated relative to the sector (not the market).

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Those denoted as 'Feature' (e.g., Feature Outperform FOP, Feature Under Outperform FUP) are our core ideas.

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Autonomous credit ratings are based on a 6-month time horizon.

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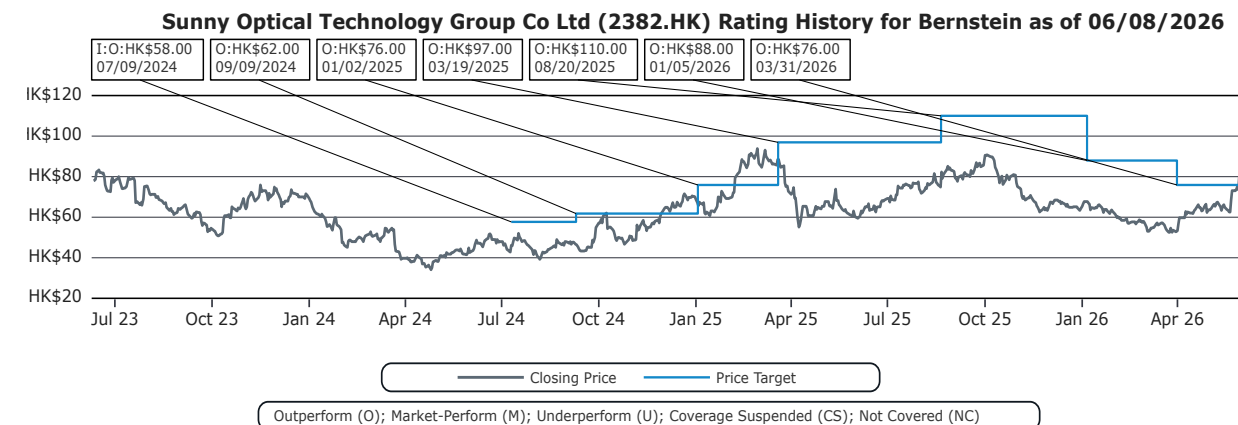
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Market-Perform (Bernstein Brand) Neutral (Autonomous Brand)	HOLD	36.3%	17.8%
Underperform	SELL	12.6%	14.9%

* These figures represent the percentage of companies within each equity rating category for which affiliates of Bernstein have provided investment banking services within the previous 12 months.

As of March 31, 2026. All figures are updated quarterly.

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