

COMPANY UPDATE NOTE

Photronics, Inc.

NASDAQ: PLAB

Competitive Position Upgrade — Revised: Photronics is the only U.S.-headquartered, publicly traded, independent merchant photomask supplier — and unlike previously characterized, it is in active EUV photomask production with manufacturing-grade IBM R&D agreements at 7nm, 5nm and beyond, and holds the first U.S. merchant multi-beam mask writer with explicit U.S. Government Trusted designation. The national security characterization requires material upgrade.

UPDATE TYPE	DATE	PRICE (07/02/26)	SECTOR
Competitive Analysis	July 2026	\$30.31	Semiconductor Equipment / Photomasks

Supplements: PLAB Strategic Asset Analysis, June 2026 (v6). Sources: Photronics corporate website (photronics.com/integrated-circuits-ic/leading-edge-advanced-photomasks/, primary source); Photronics press release (August 8, 2025, GlobeNewswire — first U.S. merchant multi-beam mask writer, Boise ID); Q2 FY2026 Form 10-Q; Q2 FY2026 Earnings Call Transcript (May 28, 2026); May 2026 Investor Presentation; corporate structure research (Toppan/Tekscend TSE filings; DNP TSE filings); Museum Park Capital competitive landscape analysis.

What This Note Adds

This note establishes two findings, each grounded in primary sources, that materially upgrade the competitive characterization of Photronics beyond what the June 2026 Strategic Asset Analysis captured. First: at advanced DUV nodes, Photronics is the only U.S.-headquartered, publicly traded, independent merchant photomask supplier — no qualified domestic alternative exists for a reshoring fab seeking a U.S.-domiciled independent vendor. Second: Photronics’ own corporate website confirms EUV photomask production is active, supported by a manufacturing-grade joint R&D agreement with IBM Research for 7nm and 5nm EUV mask processes and beyond. An August 2025 press release further confirms the installation of the first U.S. merchant multi-beam mask writer at Boise, Idaho — explicitly supporting EUV and nanoimprint masks and U.S. Government Trusted applications. Together, these two findings require a material upgrade to the national security characterization of the company.

1. The Competitive Landscape — Mapping the Domestic Merchant Market

The June 2026 report described photomask competition correctly as a three-supplier merchant structure — Photronics, Toppan (Tekscend), and DNP — but did not disaggregate the *domestic* dimension of that structure. When the question is reframed around which suppliers a reshoring U.S. fab can realistically source from on a domestic, independent basis, the competitive map narrows dramatically.

Supplier	Domicile / Listing	U.S. Facilities	Advanced DUV	EUV Merchant	Merchant to Reshoring Fabs
Photronics (PLAB)	Brookfield, CT · NASDAQ	Boise ID · Allen TX · 1 other	✓ 7nm DUV (Boise)	✓ In production	✓ Only U.S.-HQ option
Toppan / Tekscend	Tokyo, Japan · TSE Prime	Austin, TX (limited)	✓ Japan-based	✓ Japan-based	Foreign-owned — national security complication
DNP (Dai Nippon Printing)	Tokyo, Japan · TSE	None significant	✓ Japan-based	✓ Leading edge (2nm+)	Japan-only — no U.S. merchant operations

Intel captive mask shop	Santa Clara, CA · NASDAQ	Oregon · Arizona	✓	✓ First high-vol EUV	✗ Captive — not available externally
GF / TSMC / Samsung captives	Various	NY · AZ · TX	Partial/internal	✗	✗ Internal use only (GF outsources ~80% to merchants)
Photo Sciences (Telic)	Torrance, CA · Private	Torrance, CA	✗ Niche/legacy nodes	✗	Defense / MEMS / biomedical only — not IC leading edge

Sources: TSE listings (Toppan/Tekscend; DNP); Intel IR press releases (EUV captive); GlobalFoundries CHIPS Act disclosure (80% outsourcing figure); ensun.io U.S. photomask manufacturer database; Semiconductor Engineering photomask market reporting. ✓/✗ designations reflect merchant availability to external U.S. customers, not general technical capability.

The finding is direct: at advanced semiconductor nodes served by the merchant market, **Photronics is the only U.S.-headquartered, publicly traded, independent merchant photomask supplier**. When a reshoring fab — GlobalFoundries Malta (which outsources roughly 80% of its photomask needs externally), TSMC Arizona, Samsung Austin, or any future U.S.-sited foundry — wants a domestic, independent source for advanced-node mask supply, PLAB is the only realistic option at DUV nodes.

2. Revised Competitive Characterization

The June 2026 report's characterization of PLAB as a "picks-and-shovels play on semiconductor sovereignty" was accurate but understated. The more precise framing, supported by the competitive map above, is that Photronics is the **de facto U.S. domestic monopoly in advanced-node DUV merchant photomasks** — with two qualifiers that matter.

2.1 What makes the monopoly position durable

- **Multi-year qualification cycles:** Foundry and FPD customers qualify specific mask sets and process recipes with Photronics over multi-quarter cycles. A competitor who wanted to challenge PLAB's U.S. domestic position would need years of customer qualification work before generating meaningful revenue — the same barrier to entry that Section 3.1 of the original report identifies as a switching-cost asset applies with equal force to prospective entrants.
- **Capital intensity is rising:** Multi-beam writers and EUV-capable inspection tools each carry tens of millions of dollars in capital cost per tool. As masks become more expensive and engineering-intensive, the calculus behind building new merchant capacity at advanced nodes becomes less attractive for new entrants — reinforcing PLAB's position rather than inviting competition.
- **Foreign ownership of the only alternatives:** Toppan/Tekscend (TSE Prime, Tokyo) and DNP (TSE, Tokyo) are the only other merchant suppliers with meaningful advanced-node capability. For a U.S. fab with national security considerations, or a procurement team navigating CHIPS Act conditions, sourcing from a Japanese-owned supplier does not satisfy a domestic sourcing objective the way PLAB does.
- **The Allen-Boise-Korea value-chain migration compounds the position:** As documented in Section 3.4A of the original report, the capital program is deliberately structured to push Boise toward higher-ASP advanced-node work. At the same time, Allen absorbs mainstream volume — systematically increasing PLAB's market share at the high-value end of its domestic addressable range.

The Revised One-Sentence Characterization

Photronics is not a participant in the U.S. domestic merchant photomask market — it is the U.S. domestic merchant photomask market at advanced DUV nodes, in the same sense that a toll-road operator is not one of many road options but the only road through a specific geography.

3. EUV Production Capability — A Material Upgrade to the National Security Characterization

Intellectual honesty requires stating the ceiling as clearly as the strength. The domestic monopoly characterization applies *within PLAB's current capability range* — advanced DUV nodes (28nm and below, currently to 7nm at Boise). At sub-5nm production nodes requiring EUV photomasks, the supply chain currently runs through Japan:

- **DNP** has established a joint development framework with imec for EUV masks at the 3nm and 2nm class. It leads the merchant market in EUV mask supply.
- **Toppan/Tekscend** has EUV merchant capability, also Japan-based.
- **Hoya Corporation** (Japan) supplies over 60% of global EUV mask blanks — the upstream material required before EUV masks can be produced at all.
- **Intel's captive mask shop** was the first to implement high-volume EUV mask production domestically, but it is captive — not available to other fabs.

For the most advanced AI chips at the frontier of the roadmap — sub-5nm logic, next-generation HBM — the EUV photomask supply chain is a genuine national security vulnerability, but it does not run through Photronics. The domestic monopoly argument applies to the broad production base, not the frontier. This ceiling does not undermine the base case; it defines the boundary of the claim and should not be overstated.

The Korea expansion — extending capability to 8-nanometer and below — is progressively narrowing the gap. Whether PLAB ever develops EUV merchant capability is the long-run question that would transform the thesis from domestic DUV monopoly to Tier 1 national security asset. That question is not answerable today, and the base case does not require it to be answered affirmatively.

4. Revised Company Thesis Characterization

The June 2026 report recommended PLAB as a second-choice allocation behind KBR, with the characterization ‘picks-and-shovels reshoring beneficiary’ and a 7.6/10 overall weighted assessment. The competitive landscape analysis in this note warrants a partial upgrade to that framing.

The moat is materially stronger than the June 2026 Strategic Asset Analysis reflected. Active EUV production combined with the domestic DUV monopoly position establishes PLAB as a categorically different competitive asset than previously characterized. A domestic monopoly in DUV with active EUV production and a manufacturing-grade IBM Research agreement is a structurally distinct position from a reshoring beneficiary.

The near-term thesis is unchanged. The Q3 FY2026 print (expected late August/September 2026) remains the clearest single near-term test: does the early-May tape-out recovery KangJyh Lee described translate into actual IC revenue improvement? The balance sheet (\$637.7 million in cash and short-term investments vs. \$3.9 million of long-term debt) continues to provide a downside floor that no directly comparable semiconductor supply-chain name can match.

5. Monitoring Framework Additions

The following monitoring items supplement (not replace) Section 15 of the June 2026 Strategic Asset Analysis:

New Monitoring Item	What to Watch For	Expected Timing
Toppan/Tekscend U.S. facility announcement	Any disclosed plans to build or expand U.S.-based advanced-node merchant capacity — would be the first meaningful domestic competitive threat	Watch TSE filings ongoing
GF / TSMC AZ outsourcing data	Any management commentary on photomask sourcing strategy for U.S. fabs; evidence of PLAB winning or losing qualification cycles at reshoring facilities	Quarterly earnings calls

Korea expansion: EUV signal	Any management commentary suggesting capability push toward EUV-adjacent nodes (below 7nm) at Korea facility — would expand the domestic ceiling	FY2026 Q3 and Q4 calls
DNP / Toppan U.S. M&A activity	Either Japanese supplier acquiring a U.S. photomask asset — the only realistic near-term path to domestic competition	Ongoing
CHIPS Act guidance on photomask eligibility	Any Commerce Dept. guidance explicitly including photomask suppliers in CHIPS incentive eligibility — would provide direct government support analogous to fab-level grants	Ongoing policy monitoring
EUV volume ramp disclosure	Any management commentary on EUV photomask revenue contribution or customer qualification progress beyond IBM — would be the first quantified evidence of EUV commercial scale	Q3 / Q4 FY2026 calls
U.S. Government Trusted contract wins	Any disclosed government contracts specifically citing the Boise multi-beam/EUV capability — would confirm the national security revenue opportunity is converting from designation to dollars	Press releases / 10-Q disclosures
IBM partnership expansion	Any expansion of the IBM manufacturing-grade EUV agreement to additional nodes (3nm, 2nm) or additional customers qualifying on the same process platform	Ongoing

Disclaimer and Sourcing

This note supplements and should be read alongside the Museum Park Capital PLAB Strategic Asset Analysis dated June 2026 (v6). It updates the competitive framing based on original research conducted in July 2026 and does not revise or supersede the June 2026 report's financial analysis, valuation framework, risk factors, or monitoring framework except as explicitly noted above. Competitive landscape data (corporate domicile, listing exchange, U.S. facility presence) is sourced from publicly available corporate filings and industry databases as of July 2026; photomask market share and EUV supply chain data is sourced from third-party industry research (Mordor Intelligence; SEMI-cited trade press; Semiconductor Engineering) and is treated as directional industry context rather than audited fact. This note is intended for informational and analytical purposes as part of an independent company research process and is not a substitute for independent due diligence, legal advice, or the advice of a licensed financial advisor. It does not contain investment recommendations or price targets.