



SVSYSTEMS

INDEX / SUPPLY CHAINS / CHIP

The chip in an iPhone 18 Pro, from quartz to a shop in A Coruña

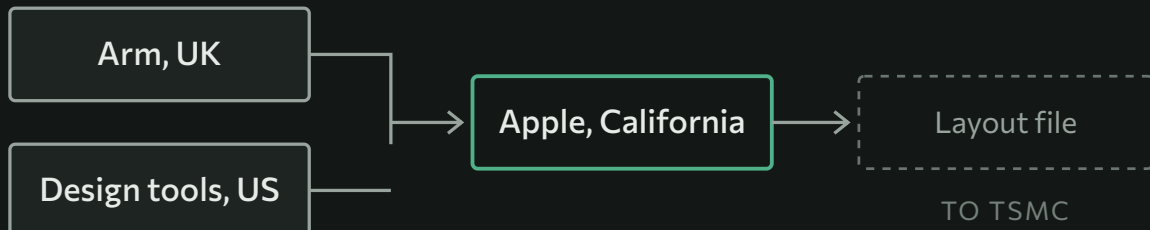
Apple's A20 Pro is about 1 cm across. Making it takes quartz from North Carolina, silicon from Germany, wafers and chemicals from Japan, a machine built in the Netherlands, memory from Korea and a factory in Taiwan, before the phone is assembled in India and flown to Spain. 7 branches meet in 1 place.

Scroll to follow it. Figures are from public records, dated October 2026. Tags mark what is calculated and what still needs a source.

The design

Cupertino, California, and Cambridge, England

Apple designs the chip in California on the instruction set it licenses from Arm, a British company, using design software from US firms. What leaves for Taiwan is not a part but a file: the finished layout, sent to the factory.



The instruction set, the design and the tools meet in 1 file

Sources: Haopicks; Wikipedia.

FORM Data, not freight

WHO Apple, Arm, design-software makers

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

WHY HERE Apple's chip team works in Cupertino, and its GPU Design Centre is in Cambridge, a few miles from Arm, whose instruction set the chip uses. Arm is paid under 30 cents a chip.

COST About \$725 million to design a 2 nm-class chip. Spread over 50 million chips, about \$14.50 each
 CALCULATED

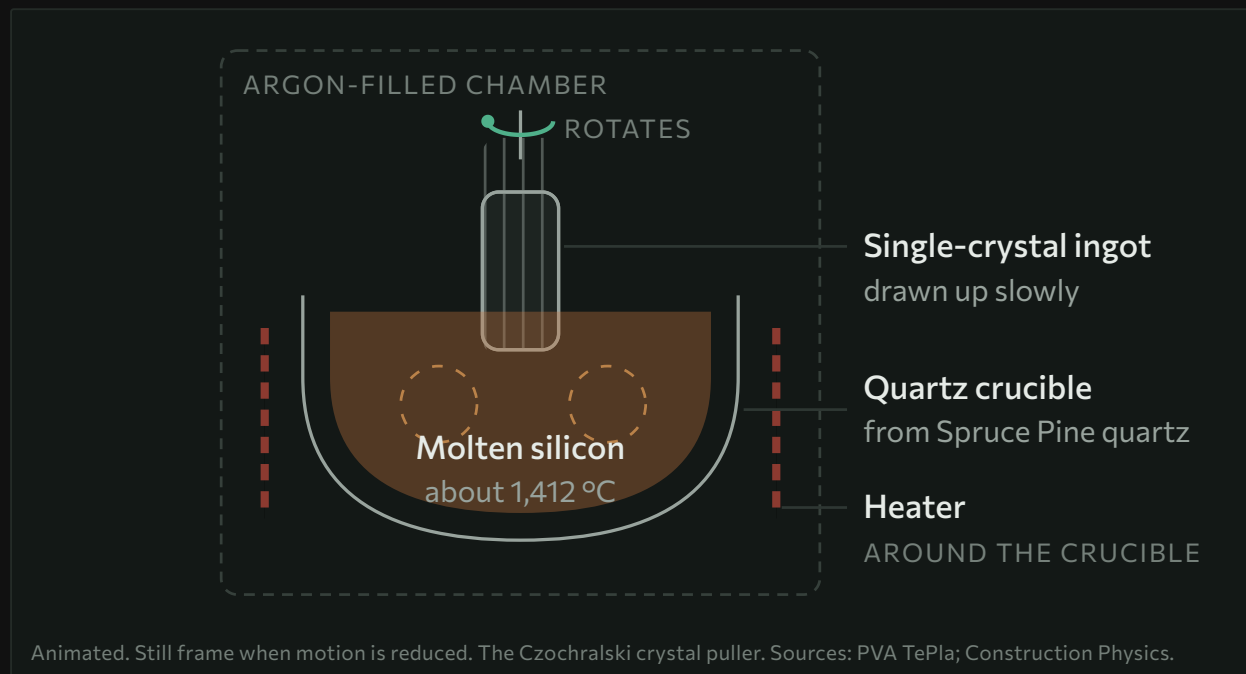
NEXT LEG Nothing physical moves. The finished layout is sent to TSMC as data.

Sources: [Haopicks](#), [Wikipedia](#), [Tom's Hardware](#), [MacRumors](#), [Apple Jobs](#)

The quartz

Spruce Pine, North Carolina

Silicon crystals for chips are grown in crucibles made of very pure quartz, and most of that quartz comes from 2 mines in 1 small town in the Appalachians. A crucible holds the molten silicon while a seed crystal is slowly drawn out of it.



SHARE About 70 to 90% of the world's high-purity quartz

CONDITION The silicon is melted near 1,412 °C in the crucible

WHO 2 mining companies in Spruce Pine

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

WHY HERE The pegmatite here formed about 380 million years ago, slowly and dry, which left quartz with under 10 ppm of metals. Few deposits come close.

COST High-purity quartz sells from about \$5,000 a tonne

NEXT LEG By road to port, then by sea to the crucible makers in Japan, such as Shin-Etsu Quartz. Several weeks [CHECK THE SOURCE](#)

Sources: [Construction Physics](#), [Z2Data](#), [PVA TePla](#), [Discovery Alert](#), [Procurement Tactics](#)

The polysilicon

Germany, the US and Japan

The crucible is filled with polysilicon purified to 11 nines, 99.999999999%. 3 companies, in Bavaria, Michigan and western Japan, make about half the world's supply of this grade.

99.999999999%

11 nines



About 1 foreign atom for every 100 billion atoms of silicon

Source: Tokuyama.

PURITY	99.999999999%, 11 nines
SHARE	The top 3 make about 50%
WHO	Wacker, Hemlock, Tokuyama

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

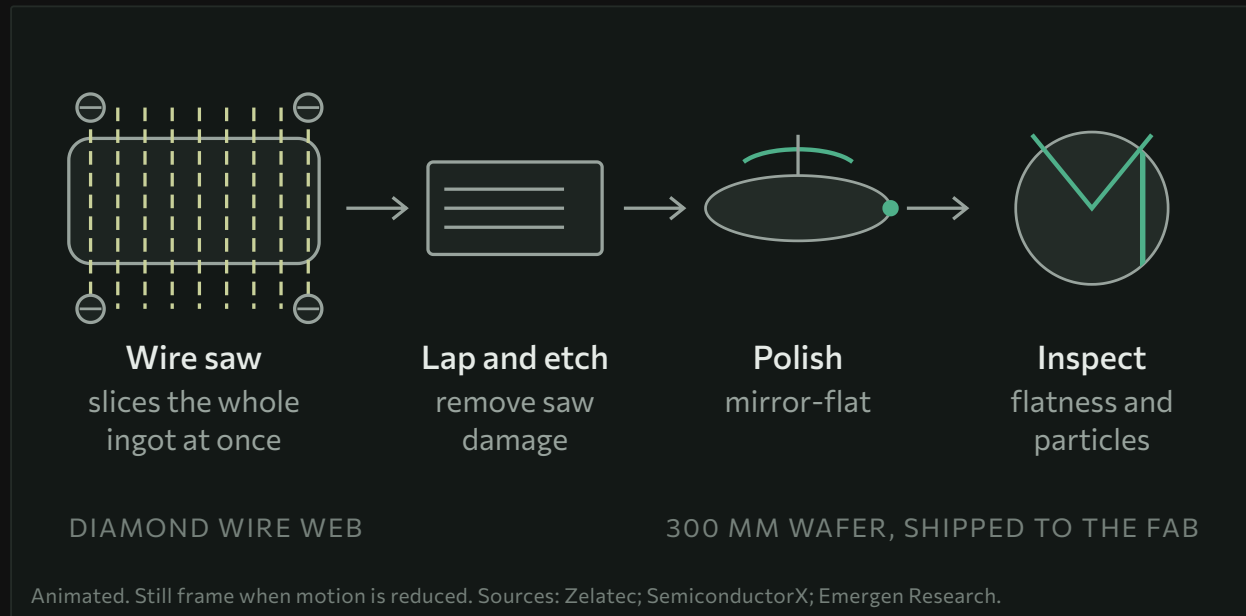
WHY HERE	Making polysilicon needs cheap power and chlorine chemistry. Bavaria, Michigan and western Japan have both, and decades of practice. Tokuyama alone makes about 20% of semiconductor grade.
COST	Solar-grade polysilicon is \$5.84 a kg. Semiconductor grade costs far more, and no public price exists.
NEXT LEG	Chunks packed in sealed cleanroom bags, by sea or air to the wafer makers CHECK THE SOURCE

Sources: [Tokuyama](#), [Global Info Research](#), [Bernreuter](#), [The Europe Today](#)

The wafer

Japan

The ingot grown in the crucible is sliced into wafers 300 mm across and polished flat. Japanese firms lead; the top 5 makers hold most of the world's capacity.



SIZE	300 mm across
SHARE	The top 5 hold about 82 to 85% of 300 mm capacity
WHO	Shin-Etsu, SUMCO and others

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

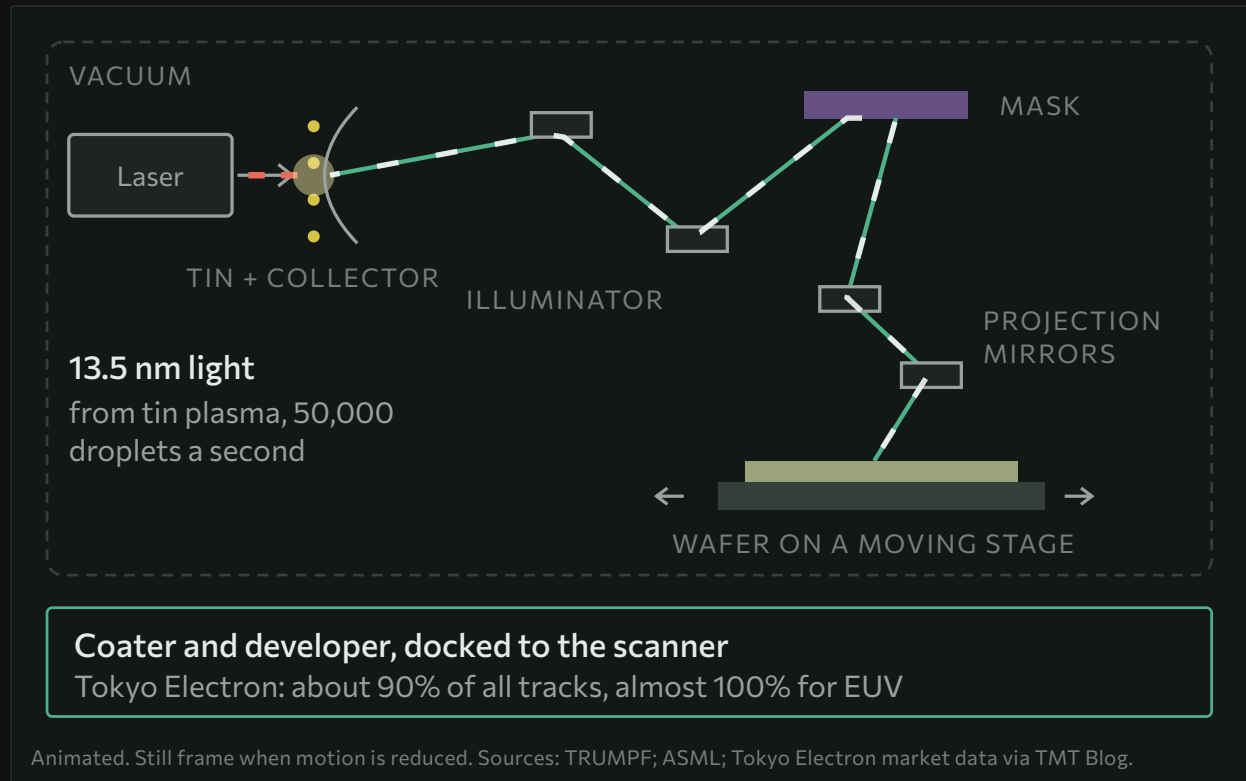
WHY HERE	Japan's Shin-Etsu and SUMCO supply much of the world's wafers, and purity makes a qualified supplier hard to replace.
COST	No public price for a prime 300 mm wafer. Taiwan's 3 largest wafer makers raised prices by at least 10% in August 2026.
NEXT LEG	25 wafers to a sealed FOSB box, flown about 2,300 km from Japan to Taiwan CALCULATED , 1 to 2 days door to door CHECK THE SOURCE

Sources: [Zelatec](#), [SemiconductorX](#), [Emergen Research](#), [TMT Blog](#), [ePAK](#), [Tech Times](#)

The machine

Veldhoven, the Netherlands

The finest layers of the chip are printed with extreme ultraviolet light, and only 1 company makes the machines: ASML. A German laser hits 50,000 tin droplets a second to make light 13.5 nm long, German mirrors focus it, and a San Diego centre builds the light source.



PRICE	About \$183 to 220 million each; \$350 to 400 million for the newest High-NA machines
LIGHT	13.5 nm, from tin plasma
WHO	ASML, with Zeiss, TRUMPF and ASML San Diego

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

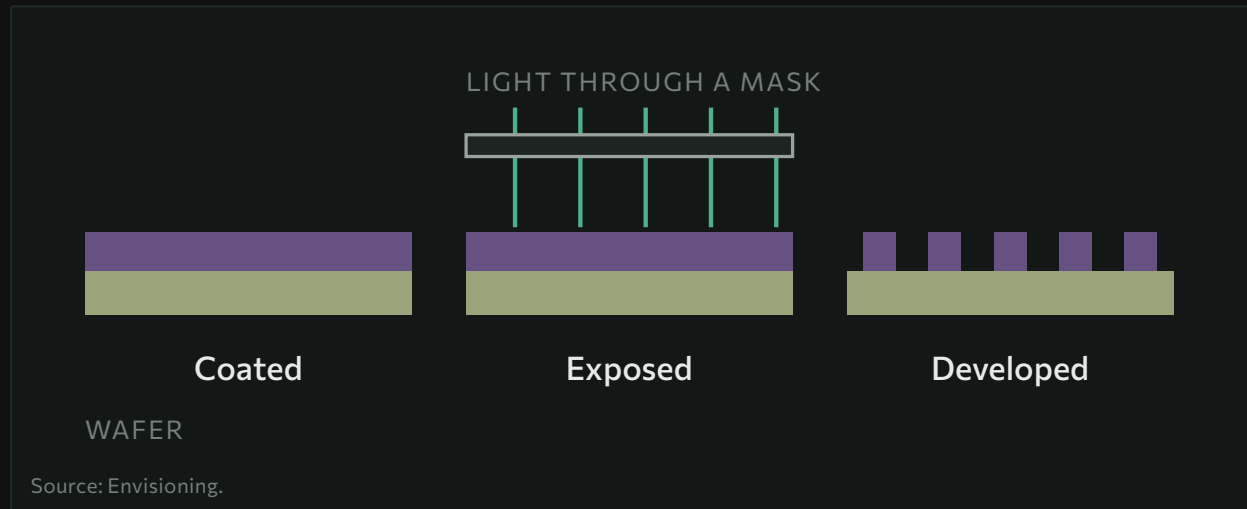
WHY HERE	Philips and ASM International founded ASML in Eindhoven in 1984. Its optics come from Zeiss in Oberkochen and its laser from TRUMPF near Stuttgart, so the key parts are all close by.
COST	About \$183 to \$220 million a machine, with rises of up to 20% reported in 2026. High-NA machines are \$350 to \$400 million.
NEXT LEG	In about 250 crates aboard several Boeing 747 freighters, about 9,500 km to Taiwan CALCULATED , then rebuilt inside the fab.

Sources: [TRUMPF](#), [ASML](#), [FourWeekMBA](#), [TMT Blog](#), [Wikipedia](#), [Silicon Canals](#), [The Vortiq](#)

The chemicals

Japan

Each wafer is coated with photoresist, a chemical that changes where the light lands, so the pattern can be etched. 4 Japanese companies supply almost all of it.



SHARE

About 87 to 91% from 4 Japanese firms

WHO

JSR, Tokyo Ohka Kogyo, Shin-Etsu, Fujifilm

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

WHY HERE

TOK, JSR and Shin-Etsu hold about 90% of EUV resist. Their edge is decades of process know-how and close work with chipmakers, not raw materials.

COST

About \$1,800 a gallon on average for EUV resist (2024)

NEXT LEG

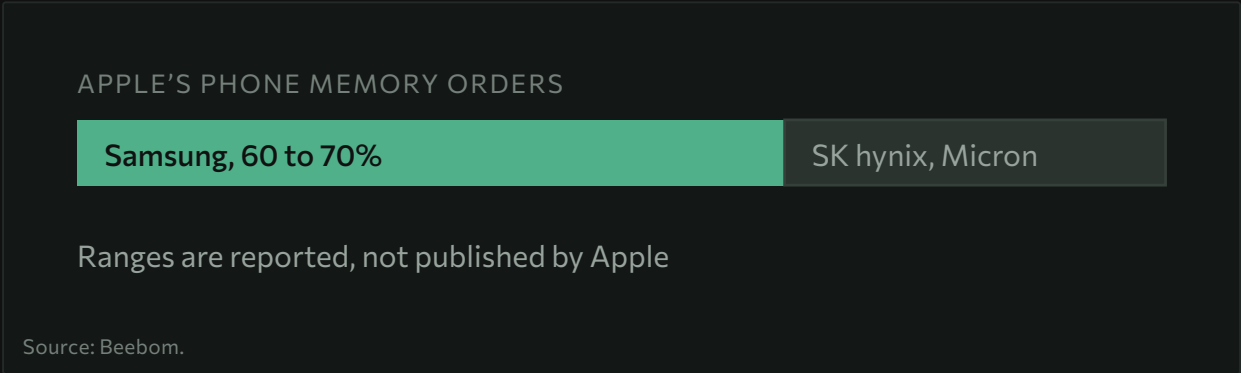
In sealed bottles kept cool, about 2,150 km from Tokyo to Hsinchu CALCULATED. Resist ages, so it is stored cold and used within its shelf life.

Sources: [Envisioning](#), [Digital Today](#), [Global Info Research](#), [MicroChemicals](#)

The memory

Pyeongtaek, South Korea

The A20 Pro is packaged with LPDDR5X memory. Samsung supplies most of Apple’s phone memory, with SK hynix and Micron sharing the rest.



SHARE Samsung about 60 to 70%; SK hynix and Micron about 30 to 40%

WHO Samsung, SK hynix, Micron

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

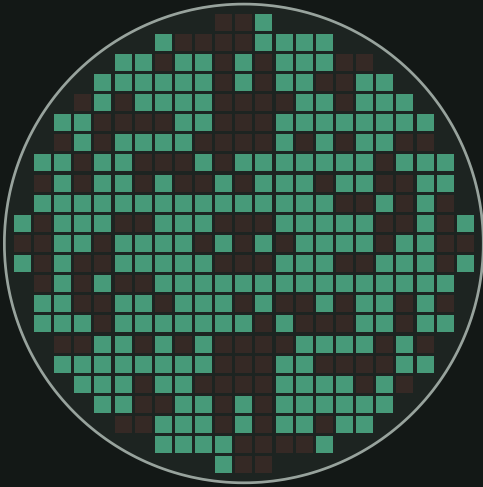
- WHY HERE Samsung’s Pyeongtaek campus is the largest chip complex in the world, built mostly for memory. Samsung fills most of Apple’s phone memory orders.
- COST 12 GB LPDDR5X contract prices rose from \$77.10 to \$145.90 in Q2 2026, as AI servers took supply.
- NEXT LEG About 1,630 km to the packaging plant in Chiayi CALCULATED, by air CHECK THE SOURCE

Sources: [Beebom](#), [OverCentral](#), [PolicyRisk](#), [Utmel](#)

The fab

Hsinchu and Kaohsiung, Taiwan

Every branch arrives at TSMC. Its 2 nm process, the first with gate-all-around transistors, runs at Fab 20 in Hsinchu and Fab 22 in Kaohsiung. A leading-edge wafer goes through more than 1,000 steps, repeating the same loop of machines for each of its 50 to 100 mask layers. The loop is drawn below the stages, in Inside the fab.



About 650 dies

of 98.7 mm² on a 300 mm wafer

About 450 work

at the reported 70% yield

About \$66

per working chip, of \$30,000

CALCULATED

Calculated from the die area and the reported price and yield. Sources: igor'sLAB; Astute Group; AI Expert.

PRICE	About \$30,000 a wafer (reported)
YIELD	About 70% reported early in 2026
TIME	About 3 to 4 months is typical for a leading-edge chip; the figure for this chip is not published CHECK THE SOURCE
WHO	TSMC

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

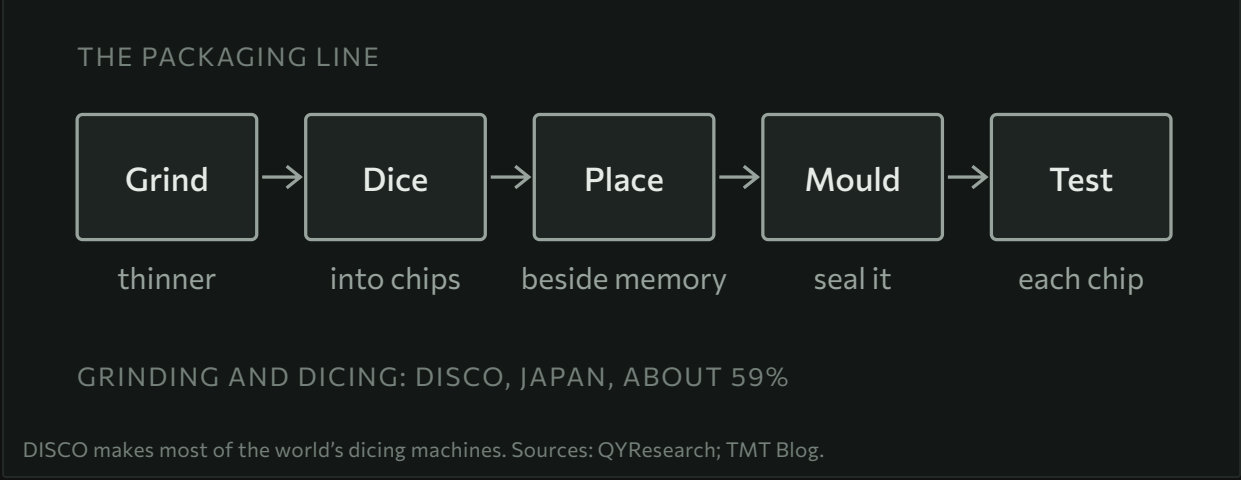
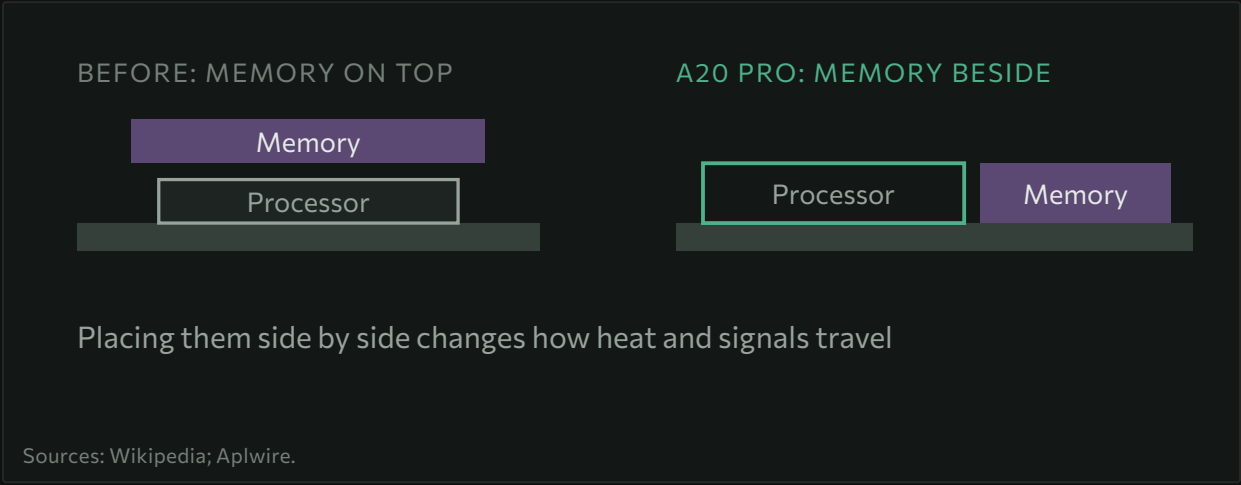
WHY HERE	TSMC's main 2 nm site is Fab 20 in Hsinchu Science Park, where the company was founded in 1987 as the first contract-only chipmaker.
COST	About \$30,000 a wafer, about \$66 a working die CALCULATED
NEXT LEG	Finished wafers travel in sealed pods about 155 km south to Chiayi CALCULATED , by road CHECK THE SOURCE

Sources: [TrendForce](#), [Astute Group](#), [AI Expert](#), [Averroes](#), [chip.computer](#), [TechInsights](#), [SemiWiki](#), [Wikipedia](#)

The package

Chiayi, Taiwan

The good dies are cut out and packaged with the memory. For the A20 Pro, TSMC moved the memory beside the processor instead of stacking it on top, a first for the A-series, on a new line at its Chiayi plant.



PACKAGE	Memory beside the die (WMCM), replacing memory on top (InFO-PoP)
WHO	TSMC
WHY HERE, WHAT IT COSTS, HOW IT MOVES ON	
WHY HERE	TSMC packages its own chips next to its fabs, so wafers stay on 1 island. DISCO, which makes most dicing machines, supplies the line.
COST	No public figure for the cost of packaging this chip
NEXT LEG	Tested chips in trays or reels, flown about 4,400 km from Taiwan to Chennai
	CHECK THE SOURCE CALCULATED

Sources: [Wikipedia](#), [Aplwire](#), [SMM](#), [QYResearch](#)

The phone

Near Chennai and Hosur, India

The chip flies to India, where iPhone 18 Pro phones for the US and Europe are assembled. Foxconn and Tata each make about half of India's iPhone output.

WORLD IPHONE ASSEMBLY, 2026

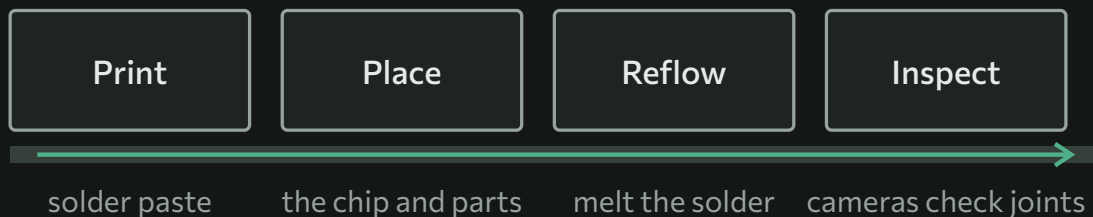
India, 26 to 28% China and elsewhere

INSIDE INDIA, BY VALUE

Foxconn, 49% Tata, 46%

Sources: Moneycontrol; National Herald; Rediff.

THE BOARD LINE, BEFORE THE PHONE IS BUILT



Pick-and-place: 72,000 to 82,000 parts an hour on a phone board

Sources: Energetika VDS; SMT Machine Line.

SHARE India makes about 26 to 28% of the world's iPhones in 2026

WHO Foxconn about 49%, Tata about 46% of India's iPhone output by value

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

WHY HERE India's PLI scheme pays 4 to 6% on extra phone sales, and assembly costs about \$30 a phone. Apple has 3 plants in Tamil Nadu.

COST About \$30 to assemble a phone

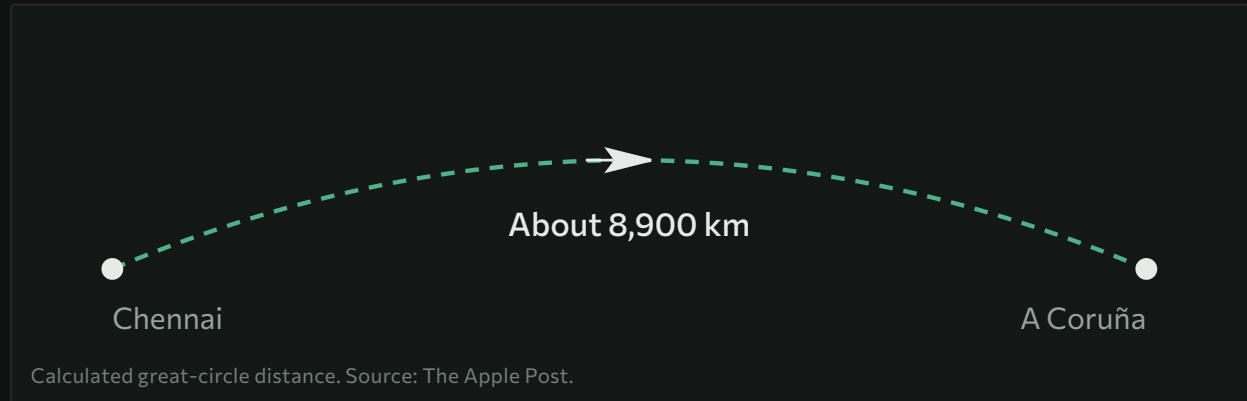
NEXT LEG Boxed phones are flown out of Chennai. A customs "green corridor" cut clearance there from 30 hours to 6.

Sources: [Moneycontrol](#), [National Herald](#), [Rediff](#), [Energetika VDS](#), [SMT Machine Line](#), [Economic Times](#), [IBEF](#), [Business Standard](#), [Mobile World Live](#)

The flight

India to Europe

New iPhones travel to market by air, in cargo space Apple buys in advance. The exact route to Spain is not published.



DISTANCE About 8,900 km in a straight line from Chennai to A Coruña [CALCULATED](#)

ROUTE Airports and European hub [CHECK THE SOURCE](#)

PAPERWORK Air waybill; EU import, 0% duty

WHY HERE, WHAT IT COSTS, HOW IT MOVES ON

WHY HERE Air is fast and the phones are valuable. In 2026 India-made iPhones were rerouted away from the Dubai hub, toward direct routes to Europe [CHECK THE SOURCE](#)

COST About \$4.88 a kg from Asia to Europe. At about 0.5 kg a boxed phone, roughly \$2.40 [CALCULATED](#)

NEXT LEG By road from a European hub to the shop. The hub is not published.

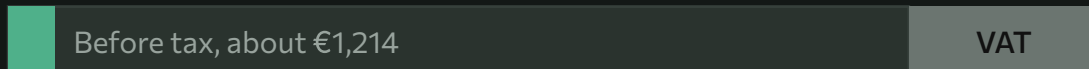
Sources: [The Apple Post](#), [Dutiable](#), [Suaid Global](#), [Business League](#)

The shop

Marineda City, A Coruña

The phone goes on sale at an Apple Premium Partner shop in A Coruña. Of the €1,469 price, about €255 is Spanish VAT. The A20 Pro's silicon is worth roughly 5% of what is left.

€1,469



A20 Pro silicon, about \$66: roughly 5%

The rest: memory, screen, battery, assembly, freight, the shop, Apple

Calculated. Sources: Apple Spain; the wafer arithmetic above.

PRICE	€1,469 for the iPhone 18 Pro, 256 GB, VAT included
TAX	21% VAT, about €255 CALCULATED
RULES	CE marking; USB-C charging, required since 28 December 2024
WHO	K-tuin, Apple Premium Partner

Sources: [Apple Spain](#), [K-tuin](#), [European Commission](#)

SUMMARY

The whole chain

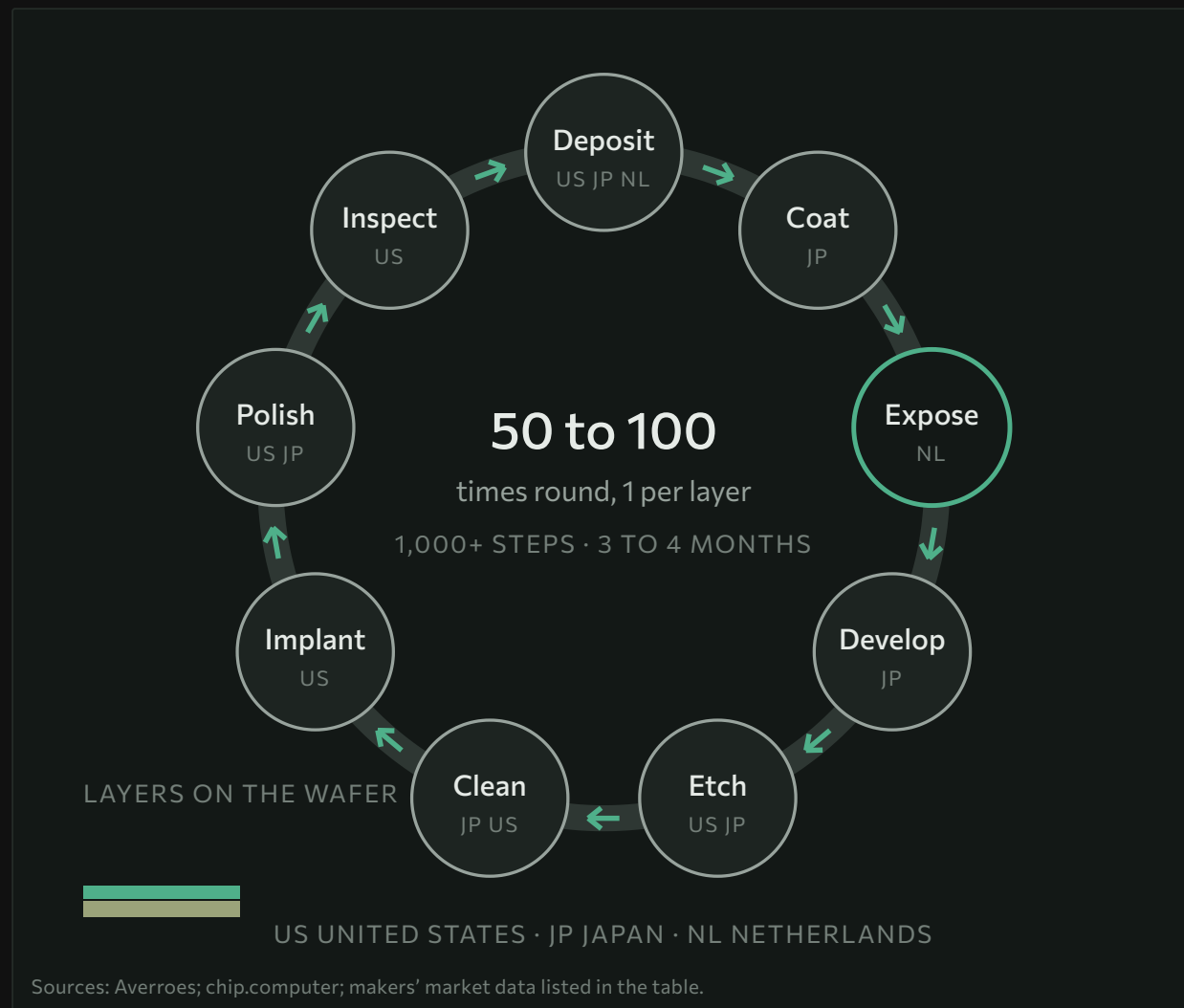
About \$66 of silicon in a €1,469 phone

PER WAFER	About 650 chips fit on a 300 mm wafer; at the reported 70% yield about 450 work CALCULATED
PER CHIP	\$30,000 a wafer ÷ about 450 good chips = about \$66, before packaging, testing and memory CALCULATED
COUNTRIES	9: the US, the UK, Germany, the Netherlands, Japan, South Korea, Taiwan, India and Spain
SINGLE SOURCES	1 maker of EUV machines, 1 town for crucible quartz, 1 company making the chip

INSIDE THE FAB

The loop every wafer goes round

A chip is built up in layers, and each layer is made by the same loop of machines. A leading-edge chip needs 50 to 100 mask layers and more than 1,000 steps, so a wafer goes round dozens of times over about 3 to 4 months. Almost every machine in the loop comes from the US, Japan or the Netherlands.



Sources: Averroes; chip.computer; makers' market data listed in the table.

STEP	WHAT THE MACHINE DOES	MAIN MAKERS	SHARE
Deposit	Lays down a film of metal or insulator a few atoms to a few hundred atoms thick	Applied Materials, Lam Research (US); Tokyo Electron (Japan); ASM (Netherlands)	The most spread-out step
Coat	Spins a thin layer of photoresist onto the wafer	Tokyo Electron (Japan)	About 90%; almost 100% for EUV
Expose	Projects the layer's pattern onto the resist with EUV or deep-ultraviolet light	ASML (Netherlands)	The only EUV maker
Develop	Washes away the resist where the light did or did not fall, leaving a stencil	Tokyo Electron (Japan)	Same machine as coating
Etch	Uses plasma to cut into the layer wherever the stencil leaves it bare	Lam Research (US), Tokyo Electron (Japan), Applied Materials (US)	Top 3 over 90%; Lam about 35 to 39%

STEP	WHAT THE MACHINE DOES	MAIN MAKERS	SHARE
Clean	Strips the leftover resist and washes off residue	SCREEN, Tokyo Electron (Japan); Lam Research (US)	Not published
Implant	Fires ions into the silicon to change how it conducts	Applied Materials, Axcelis (US)	About 63% and 21% of units sold in 2024
Polish	Grinds the surface flat so the next layer starts level	Applied Materials (US), Ebara (Japan)	Applied about 70%
Inspect	Measures and checks every layer for defects	KLA (US)	About 56% overall; over 85% in optical wafer inspection

LEGS

How each piece reaches the next place

Every leg of the chain, from the design file to the shop. Distances are straight lines between the points on the globe [\[CALCULATED\]](#). Costs are for the thing that travels, not the trip.

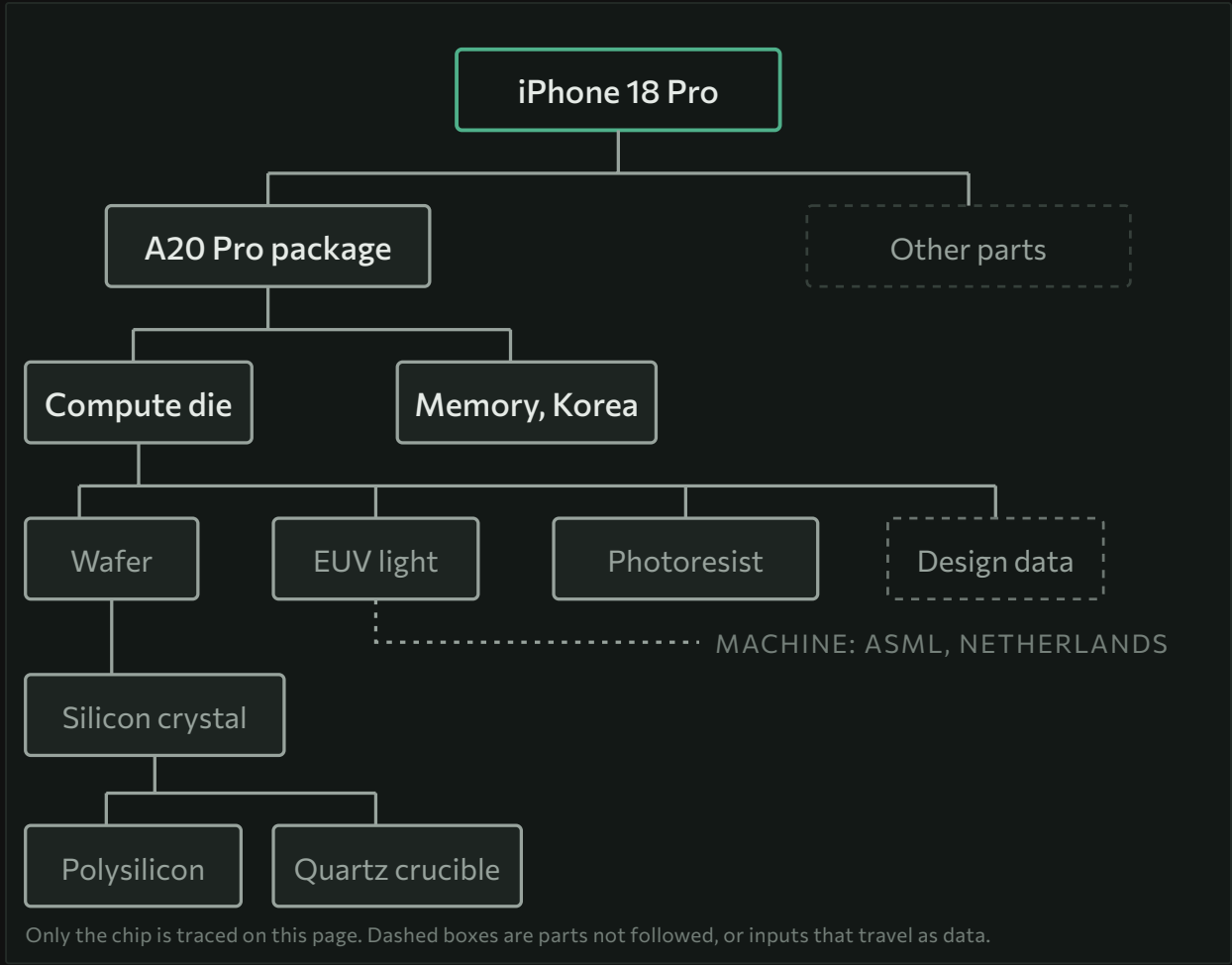
LEG	FROM	TO	WHAT	HOW	PACKED	DISTANCE OR TIME	COST
1	Cupertino, Cambridge	Hsinchu	Layout file	Network	Data	Instant	About \$725m to design
2	Spruce Pine	Japan	Quartz	Road, then sea	Bulk bags CHECK THE SOURCE	Several weeks CHECK THE SOURCE	From \$5,000 a tonne
3	Germany, US, Japan	Wafer makers	Polysilicon	Sea or air CHECK THE SOURCE	Sealed cleanroom bags	Not published	\$5.84 a kg (solar)
4	Japan	Hsinchu	Wafers	Air	FOSB, 25 wafers	1 to 2 days CHECK THE SOURCE	Not published
5	Veldhoven	Hsinchu	EUV machine	Several 747s	About 250 crates	About 9,500 km	\$183m to \$220m
6	Tokyo	Hsinchu	Photoresist	Air CHECK THE SOURCE	Bottles, kept cool	About 2,150 km	About \$1,800 a gallon
7	Pyeongtaek	Chiayi	Memory	Air CHECK THE SOURCE	Not published	About 1,630 km	\$145.90 for 12 GB
8	Hsinchu	Chiayi	Finished wafers	Road CHECK THE SOURCE	Sealed pods	About 155 km	\$30,000 a wafer
9	Chiayi	Chennai	Packaged chips	Air	Trays or reels CHECK THE SOURCE	About 4,400 km	Not published

LEG	FROM	TO	WHAT	HOW	PACKED	DISTANCE OR TIME	COST
10	Chennai	Europe	Boxed phones	Air	Boxes on pallets	About 8,900 km	About \$4.88 a kg
11	European hub	A Coruña	Boxed phones	Road	Boxes	Not published	Not published

[CHECK THE SOURCE](#)

PARTS

What goes into what



CHOCPOINTS

Who controls each step

STEP	WHO	IF IT STOPS
Crucible quartz	2 mines in Spruce Pine, North Carolina	About 70 to 90% of high-purity quartz. Both shut when Hurricane Helene hit in September 2024, and restarted within weeks

STEP	WHO	IF IT STOPS
Polysilicon	Hemlock, Wacker, Tokuyama	About half the world's electronic-grade supply between the top 3
Wafers	Shin-Etsu, SUMCO and 3 others	The top 5 hold about 82 to 85% of 300 mm capacity
EUV machines	ASML, with Zeiss optics and a TRUMPF laser	The only maker in the world. No EUV machine, no 2 nm chip
Photoresist	4 Japanese firms	About 87 to 91% of the market
2 nm fabs	TSMC, in Taiwan	The only source of the A20 Pro
Memory	Samsung, with SK hynix and Micron	Samsung holds about 60 to 70% of Apple's orders

PAPERWORK

The rules along the way

RULE	SET BY	WHERE	WHAT IT DOES
EUV export licence	Netherlands	Veldhoven	EUV machines have not been sold to China since 2019
Bill of lading or air waybill	Carrier	Every shipment	Records what is on board and who can claim it
EU import duty	European Union	Entry to Spain	0% on smartphones, under the Information Technology Agreement
VAT	Spain	At the till	21%: about €255 of the €1,469 price CALCULATED
CE marking	European Union	Before sale	The phone meets EU safety and radio rules
Common charger rule	European Union	Before sale	Phones sold in the EU must charge by USB-C, since 28 December 2024

RISK

What can go wrong, and where

WHERE	RISK	WHAT HAPPENS
North Carolina	Weather	Helene showed that 1 storm can stop most of the world's crucible quartz
Netherlands	Capacity	ASML plans to ship more than 60 EUV machines in 2026, and every new fab needs some
Taiwan	Concentration	Every A20 Pro is made and packaged on 1 island

WHERE	RISK	WHAT HAPPENS
Korea	Memory	Demand for AI servers has tightened the supply of phone memory

GAPS

What the public record does not show

- Which crucible maker, polysilicon plant and wafer maker supply this chip. The branches show the main suppliers, not confirmed links.
- How long an A20 Pro wafer takes to pass through the fab, and how many mask layers TSMC's 2 nm process uses. 3 to 4 months and 50 to 100 layers are typical figures for leading-edge chips.
- The actual yield and price Apple pays TSMC. \$30,000 a wafer and 70% yield are reported, not confirmed.
- How phones reach Spain: which airport, which European hub, how long.
- The cost of packaging this chip, and the prices of semiconductor-grade polysilicon and prime wafers.
- How each material travels between suppliers: sea or air, packing and transit times are typical practice, not confirmed for this chip.

SOURCES

Where the figures come from

1. [Wikipedia: Apple A20 Pro](#)
2. [TechInsights: inside the A20 Pro, TSMC 2 nm](#)
3. [igor'sLAB: A20 Pro die area, 98.722 mm²](#)
4. [Haopicks: how Arm licenses its architecture](#)
5. [Construction Physics: Spruce Pine quartz and crucibles](#)
6. [Z2Data: Spruce Pine, 70 to 90% of high-purity quartz, Helene](#)
7. [Fast Company: Spruce Pine back in operation after Helene](#)
8. [PVA TePla: the Czochralski process in a quartz crucible](#)
9. [Tokuyama: polysilicon at 11 nines purity](#)
10. [Global Info Research: electronic-grade polysilicon producers](#)
11. [Emergen Research: top 5 wafer makers, 82 to 85% of 300 mm capacity](#)
12. [TRUMPF: EUV light from tin droplets, 50,000 a second](#)
13. [ASML: San Diego light source centre](#)
14. [FourWeekMBA: EUV machine prices](#)
15. [Silicon Analysts: more than 60 EUV tools in 2026](#)
16. [Envisioning: Japanese photoresist makers, 87 to 91%](#)
17. [Beebom: Samsung, 60 to 70% of Apple's phone memory](#)
18. [OverCentral: DRAM shortage and the A20 packaging](#)
19. [TrendForce: TSMC 2 nm at Fab 20 Baoshan and Fab 22 Kaohsiung](#)
20. [Astute Group: TSMC 2 nm wafers at about \\$30,000](#)

21. [AI Expert: TSMC 2 nm initial yield about 70%](#)
22. [SemiWiki forum: cycle time per mask layer](#)
23. [Aplwire: A20 Pro and WMCM packaging](#)
24. [SMM: TSMC WMCM line at Chiayi AP7](#)
25. [Moneycontrol: iPhone 18 Pro production in India](#)
26. [National Herald: India's share of iPhone assembly, 28% in 2026](#)
27. [Rediff: Tata and Foxconn shares of India's iPhone output](#)
28. [The Apple Post: how iPhones move from factory to store](#)
29. [Apple Spain: iPhone 18 Pro from €1,469](#)
30. [K-tuin: Apple Premium Partner, Marineda City, A Coruña](#)
31. [Dutiable: EU 0% duty on smartphones](#)
32. [European Commission: common charger rules, 28 December 2024](#)
33. [Financial Times: EUV machines banned from sale to China since 2019](#)
34. [Zelatec: slicing an ingot with a wire saw](#)
35. [SemiconductorX: wafer slicing, lapping and polishing](#)
36. [TMT Blog: Tokyo Electron, about 90% of coater/developers, almost 100% for EUV](#)
37. [Averroes: more than 1,000 steps across 50 to 100 mask layers](#)
38. [chip.computer: 3 to 4 months to make a modern chip](#)
39. [SemiconductorX: deposition equipment makers](#)
40. [MarketResearch.com: top 3 etch makers over 90%](#)
41. [Seeking Alpha: Lam Research, 39% of etch](#)
42. [Verified Market Research: wafer cleaning makers, SCREEN](#)
43. [QYResearch: ion implanters, Applied 62.65%, Axcelis 21.19% \(2024\)](#)
44. [Jeez Semicon: CMP makers, Applied about 70%](#)
45. [Maximize Market Research: KLA, 56% of process control](#)
46. [QYResearch: dicing equipment, DISCO about 59%](#)
47. [Energetika VDS: the SMT assembly line, step by step](#)
48. [SMT Machine Line: pick-and-place speeds on phone boards](#)
49. [Tom's Hardware: a 2 nm chip costs about \\$725 million to design \(IBS\)](#)
50. [MacRumors: Apple pays Arm under 30 cents a chip](#)
51. [Apple Jobs: the UK GPU Design Centre, Cambridge](#)
52. [Discovery Alert: Spruce Pine quartz, 380 million years old, under 10 ppm metals](#)
53. [Procurement Tactics: high-purity quartz about \\$5,000 a tonne](#)
54. [Bernreuter: polysilicon spot price, \\$5.84 a kg](#)
55. [The Europe Today: Tokuyama, about 20% of semiconductor-grade polysilicon](#)
56. [ePAK: the 25-wafer FOSB shipping box](#)
57. [Tech Times: Taiwan wafer makers raise prices at least 10%, August 2026](#)
58. [Silicon Canals: each EUV machine ships in about 250 crates on several 747s](#)
59. [The Vortiq: ASML raises low-NA EUV prices by up to 20%](#)
60. [Digital Today: TOK, JSR and Shin-Etsu, about 90% of EUV resist](#)
61. [Global Info Research: EUV photoresist, about \\$1,800 a gallon \(2024\)](#)
62. [MicroChemicals: storing photoresist, temperature and shelf life](#)
63. [PolicyRisk: Samsung Pyeongtaek, the largest chip complex in the world](#)

64. [Utmel: 12 GB LPDDR5X contract price, \\$77.10 to \\$145.90 in Q2 2026](#)
65. [SemiWiki: TSMC N2, main site Fab 20 Baoshan](#)
66. [Economic Times: PLI pays 4 to 6% on extra sales](#)
67. [IBEF: iPhone assembly in India, about \\$30 a phone](#)
68. [Business Standard: Tamil Nadu's iPhone exports and Apple's 3 plants](#)
69. [Mobile World Live: Chennai customs clearance cut from 30 hours to 6](#)
70. [Business League: India-made iPhones rerouted away from Dubai, 2026](#)
71. [Wikipedia: ASML, founded 1984 by Philips and ASM International](#)
72. [Wikipedia: TSMC, founded 1987 in Hsinchu](#)
73. [TMT Blog: why Japanese wafer and resist makers are hard to replace](#)
74. [Suaid Global: air freight about \\$4.88 a kg, Far East to Europe \(Freightos\)](#)

Land and borders from Natural Earth. Branches are drawn between the main suppliers and are not confirmed shipping routes.