

Market evolution: Optical fibres and lenses (CN 9001) — 2015–2025

Introduction

This report examines the European Union's external trade in optical fibres, optical fibre cables, sheets and plates of polarising material, unmounted lenses (including contact lenses), prisms, mirrors, and other optical elements — collectively covered by Combined Nomenclature code 9001 — between 2015 and 2025. The data reveal a decade of profound transformation: despite a pronounced drop in the physical volume of traded goods, both export and import values rose substantially, driven by a steep increase in unit prices. At the same time, the EU's trade deficit in these optical products virtually disappeared, while the geography of its partners was reshaped by Brexit, the rise of China, and sustained demand from the United States. The analysis draws exclusively on figures from the EU Trade Dashboard; all source references are provided as direct links to the underlying data.

1. The premiumisation pivot: value growth defies falling volumes

Trade overview shows that between 2015 and 2025 the EU's exports of CN 9001 rose by 37.5 % in value, from €2.32 billion to €3.19 billion, while imports grew by 28.6 %, from €2.48 billion to €3.20 billion. At the same time, the quantities traded shrank markedly: exports fell 16.5 % (from 31 089 t to 25 948 t) and imports shrank 19.3 % (from 48 615 t to 39 242 t). The divergence between value and volume is explained by a powerful upward trend in unit prices — the average export price jumped 64.8 %, from €74.6 /kg to €122.9 /kg, and the average import price rose 59.3 %, from €51.1 /kg to €81.4 /kg. Consequently, the EU's trade deficit shrank from –€165 million to just –€5.7 million, even flirting with a small surplus in 2022 (+€18.5 million).

This premiumisation is rooted in a profound shift within the product basket. The product segment breakdown reveals that the highest-value categories experienced the strongest price acceleration.

Table 1: Import and export unit-value changes by sub-heading, 2015 → 2025

Sub-heading	Import price (€/kg) 2015	Import price (€/kg) 2025	Change (%)	Export price (€/kg) 2015	Export price (€/kg) 2025	Change (%)
900190 – optical elements	28 650	57 877	+102.0	54 458	279 731	+413.7
900130 – contact lenses	49 409	75 855	+53.5	67 135	89 798	+33.7
900150 – spectacle lenses, non-glass	103 589	134 134	+29.5	141 411	211 137	+49.3
900110 – optical fibres	69 152	71 799	+3.8	129 526	180 013	+39.0
900140 – spectacle lenses, glass	112 748	64 779	–42.5	131 101	391 730	+198.8
900120 – polarising material	31 963	121 313	+279.5	64 520	174 502	+170.4

Source: Product segment breakdown; calculations based on value and quantity data.

Exports of unmounted optical elements (900190) illustrate the trend dramatically: while the volume shipped fell from 6 128 t to 2 053 t (–66.5 %), their value rose from €335 million to €576 million (+72.1 %), lifting the average unit price more than four-fold. On the import side, polarising sheets (900120) saw a near-four-fold price increase while the quantity dropped from 2 150 t to 177 t. Simultaneously, contact lenses (900130) remained the EU's most valuable export segment, generating €1.76 billion in 2025 and providing the largest single contribution to the trade-balance improvement.

These movements signal a structural upgrading of the EU's international optical trade towards higher-technology, lower-volume goods, with manufacturers capitalising on advanced lenses, specialised optical prisms, and sophisticated polarising materials.

2. Tectonic shifts in trading partners: Brexit, China's ascent, and the United States' enduring role

The transformation of partner geography is the second major narrative. The top partners overview makes the changing hierarchy starkly visible.

Table 2: EU imports from major non-EU partners, value and change 2015–2025

Partner	2015 (€ million)	2025 (€ million)	Change (%)
China	341.6	737.4	+115.8
United States	358.9	569.9	+58.8
Thailand	332.5	541.1	+62.7
United Kingdom	502.8	245.5	−51.2
India	117.0	148.7	+27.0
Korea, Republic of	228.0	92.3	−59.5
Taiwan	36.9	60.0	+62.7

Source: Top partners.

China more than doubled its import share, overtaking the United Kingdom as the largest external supplier. The UK's imports halved, a collapse that was not gradual but concentrated in 2021: the price shock analysis identifies a +154.7 % price upswing on UK imports in 2021, accompanied by a volume collapse from around 10 600 t to 2 350 t — consistent with the introduction of post-Brexit trade frictions that made low-value, high-volume optical trade unviable. A similar, simultaneous shock hit EU exports to the UK: export prices jumped 158.5 %, while the quantity shipped fell from about 14 000 t to 3 500 t, underscoring the bilateral nature of the disruption.

On the export side, the United States cemented its position as the EU's top destination, with exports soaring 118.5 %, from €389 million to €851 million. Exports to China nearly tripled (+185.2 %), reaching €314 million, while sales to Switzerland expanded by 87.2 %, turning it into a €247 million market. The only major decline among export destinations was the United Kingdom (−34.8 %), again a direct consequence of the Brexit shock. EU exports to Japan remained remarkably stable just above €460 million, and exports to Korea and Russia showed moderate growth, despite the 2017 price spike for Russia (+35.1 %) that has since been followed by a volume decline due to sanctions.

These shifts are reflected in the concentration measures: the import-side Herfindahl-Hirschman Index rose from 1 166 to 1 313 (+12.6 %), indicating a slightly more concentrated sourcing portfolio, while the export HHI remained virtually unchanged at around 1 250. Hence, the EU diversified its sales but relied somewhat more heavily on a few dominant suppliers — notably China.

3. Structural resilience and vulnerability: specialisation, production, and the shifting balance

Despite the volatile partner dynamics, the EU's domestic industrial base in optical goods expanded and deepened its international integration. EU-27 production data, available up

to 2024 from the production volume dashboard, shows that within the 2015–2024 window the quantity of optical items produced rose from 4.0 billion units to 5.1 billion units (+28.7 %), while the production value increased from €4.3 billion to €6.3 billion (+46.0 %). At the same time, the share of production destined for export (export propensity) climbed from 27.8 % to 46.1 %, signalling that the sector is heavily outward-oriented. Overall, the vulnerability indicators confirm the evolving picture: net-import reliance (NIR) swung from a slightly negative –0.03 % in 2015 to +4.9 % in 2024, meaning the EU became a marginal net importer, but one that is still extremely close to self-sufficiency.

The sector's resilience is underpinned by a clear pattern of specialisation within the EU. In 2025 the five most specialised exporting Member States were Latvia (RSCA +0.46), Ireland (+0.44), Czechia (+0.32), Portugal (+0.29), and Hungary (+0.23). Ireland alone shipped €1.06 billion of optical products, essentially competing with Germany (€1.06 billion) for the top exporter spot. Ireland's strength is firmly anchored in contact lenses — the sub-heading that dominates EU exports — while Germany's export basket is broader, spanning optical fibres, spectacle lenses, and precision optical elements. Conversely, Malta, Slovakia, Finland, Austria, and Spain exhibit the lowest revealed comparative advantage, suggesting that high-volume optical manufacturing remains concentrated in a limited number of countries.

The external shock record, detailed in the volatility and shocks study, points to a few vulnerable points that nevertheless did not destabilise the overall system. Besides the UK's price and volume dislocation already discussed, import prices from China jumped 52.8 % in 2022 while quantities remained almost unchanged — a signal of upward pricing pressure from a dominant supplier. On the export side, price shocks were recorded for Turkey (+410 % in 2018, alongside a collapse in volume) and for Korea (+85.4 % in 2017). Turkey's extreme volatility reflects macroeconomic upheaval and a steep drop in low-value optical fibre cables, while Korea's spike likely mirrors a temporary shift in the product mix towards more advanced optical elements. Even so, the weighting of these smaller partners limits their systemic impact, and the EU's diversified export base has absorbed the shocks without derailing the overall upward trend in value.

Conclusion

The decade under review marks a decisive transition for the EU's external trade in optical fibres and lenses. Trade in physical tons contracted, yet the value of imports and exports increased by roughly one-third, propelled by an across-the-board rise in unit prices and a shift towards high-technology, high-value products — especially unmounted optical elements and contact lenses. The trade deficit virtually vanished, and the EU's industrial base

responded with a near-50 % increase in production value and a heightened export orientation. At the same time, the partner landscape was profoundly altered: China supplanted the United Kingdom as the premier import source, the US emerged as the dominant export market, and the post-Brexit shock permanently curtailed the EU-UK optical goods corridor. The EU now operates from a position of near-self-sufficiency, supported by strong specialisation in a handful of Member States, even as it remains exposed to price pressures from key suppliers like China and to the lingering aftermath of geopolitical ruptures. The optical-goods market of 2025 is structurally more advanced, more integrated globally, and more reliant on quality differentiation than the one of 2015.

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If you need advice on European trade policy, or representation for your interests in Brussels, feel free to contact me at support@tradedashboard.eu. You can find my CV at [this address](#).