

Market evolution: Electric lamps (CN 8539) — 2015–2025

Introduction

The product group CN 8539 (electric filament or discharge lamps, including sealed beam lamp units, ultraviolet and infra-red lamps, arc lamps, and LED light sources and parts) underwent a far-reaching transformation between 2015 and 2025. The data tell a story of a sector where the technological shift to LED – combined with geopolitical disruptions and a profound loss of domestic manufacturing scale – rewired the European Union's trade position, turning a significant net surplus into a deficit and concentrating import supply in a single country. This report identifies and interprets the main dynamics using the EU's extra-EU trade statistics, production data, and market-structure indicators.

1. The LED revolution fundamentally reshuffles trade composition and values

The import basket has been completely taken over by LED lamps and modules while traditional technologies have collapsed

Extra-EU imports of finished LED lamps (sub-code 853952) and LED modules (853951) first appeared in the available breakdown in 2022, when they already represented €1.05 billion and €238 million respectively. By 2025, LED lamps recorded €716 million and LED modules €347 million, the latter still growing. Over the same period, imports of fluorescent lamps (853931) shrank from €213 million in 2015 to merely €15 million in 2025, tungsten halogen filament lamps (853921) fell from €260 million to €105 million, and traditional filament lamps (853922, 853929) together declined by more than 60 %. The product segments thus shifted almost entirely from conventional lighting to solid-state lighting.

Import segment (selected)	2015 (€)	2025 (€)	Change
LED lamps (853952)	n/a	716 001 347	–
LED modules (853951)	n/a	347 270 986	–
Fluorescent (853931)	212 750 813	15 459 314	–93 %
Tungsten halogen (853921)	260 037 510	105 231 827	–60 %
Filament ≤200 W (853922)	67 091 575	9 872 737	–85 %

Source: Product segment breakdown

Export values contract sharply while unit prices more than double due to product-mix upgrading

Total extra-EU exports of CN 8539 fell from €2.001 billion in 2015 to €1.204 billion in 2025 (–39.8 %), while the exported quantity dropped much faster, from 72 029 tonnes (or thousand units) to 17 638 (–75.5 %). Consequently, the average export unit price soared from €27 773 to €68 207 (+145.6 %). This reflects the disappearance of high-volume, low-price conventional products and a growing share of higher-value items such as UV/IR lamps, specialised LED modules, and parts.

Indicator (exports)	2015	2025	Change
Value (€)	2 000 792 003	1 203 817 117	–39.8 %
Quantity	72 028.8	17 638.2	–75.5 %
Unit price (€/qty)	27 773	68 207	+145.6 %

Source: General overview – trade

Traditional filament and fluorescent lamps virtually vanish from trade

On the export side, tungsten halogen filament lamps – formerly the largest export segment – decreased from €598 million (2015) to €193 million (2025). Fluorescent lamp exports followed a similar path, dropping from €154 million to €32 million. In contrast, ultraviolet and infra-red lamps (853949) moved from €162 million to €240 million, underlining a specialisation in niche technical lighting.

2. China's grip tightens as EU trade geography is redrawn

China becomes the overwhelming import source, driving concentration to record highs

China's share of extra-EU imports rose from €606 million in 2015 to €1.123 billion in 2025 (+85.2 %). It accounted for more than 70 % of the value of all extra-EU lamp imports by 2025. The import Herfindahl-Hirschman Index (HHI) consequently increased from 3 876 to 5 586 (+44.1 %), confirming a historically high level of supplier concentration.

Import partner	2015 (€)	2025 (€)	Change
China	606 138 431	1 122 669 185	+85.2 %
Taiwan	13 376 006	29 754 267	+122.4 %
United Kingdom	95 701 409	41 870 573	−56.2 %
Japan	70 636 113	69 700 699	−1.3 %

Source: Top import partners

Key export markets evaporate: the collapses in the US, China, and Russia

EU exports to the United States fell from €490 million to €270 million (−44.9 %); to China they plummeted from €382 million to €139 million (−63.5 %); and to Russia the flow virtually stopped, from €72 million in 2015 to just €5 214 in 2025 (−100 %). These three destinations alone accounted for a loss of more than €470 million in annual export value.

Export partner	2015 (€)	2025 (€)	Change
United States	489 544 941	269 644 891	−44.9 %
China	382 438 758	139 444 632	−63.5 %
Russian Federation	72 439 104	5 214	−100.0 %
Switzerland	61 407 719	87 789 457	+43.0 %

Source: Top export partners

A few resilient export niches persist in Switzerland and UV/IR lamps

Switzerland is the only large partner showing sustained growth (+43 %). Together with the rising ultraviolet/infra-red lamp exports, it highlights a shift towards specialised, high-value market segments that are less exposed to mass-market competition from Asian producers.

3. European production collapses, deepening specialisation and strategic vulnerability

Domestic production volumes plummet by over 85 %, leaving the EU heavily reliant on imports

EU production quantity of CN 8539 crashed from 4.01 billion units in 2015 to 0.69 billion units in 2024 (−86.7 % compared with the earliest available data year 2003). Production value dropped less dramatically (−44.5 % to €2.04 billion in 2024), confirming a shift towards higher-unit-value goods. The resulting domestic gap is now filled by imports: the

trade balance swung from a surplus of €996 million (2015) to a deficit of €314 million (2025).

Indicator	2015	2024/2025	Change
EU production quantity	4.01 bn units	0.69 bn units (2024)	–86.7 % ¹
EU production value	€4.49 bn	€2.04 bn (2024)	–44.5 %
Trade balance (extra-EU)	+€996 M (2015)	–€314 M (2025)	swing of –€1.31 bn

¹ % change relative to the first available year in the production series (2003).

Source: Production volumes

Central and eastern member states emerge as the bloc’s lighting specialists

In 2025, the most specialised EU exporters, measured by the revealed symmetric comparative advantage (RSCA), are Lithuania (RSCA 0.55), Poland (0.45), Latvia (0.39), and Romania (0.26). Poland alone accounted for 17.6 % of EU-wide exports of the product, despite being only 6.6 % of total EU manufacturing exports. At the other extreme, Ireland, Malta, and Cyprus show virtually no specialisation.

Rising trade intensity and net import reliance signal growing fragility

Extra-EU trade intensity (exports plus imports as a share of production value) rose from 41.9 % in 2015 to 57.3 % in 2024. Export propensity (exports relative to production) jumped from 31.9 % to 47.4 % over the same period. The net import reliance indicator – which, despite the trade deficit, grew increasingly negative due to the collapse in domestic production – fell from –17.4 % to –31.6 % (–82.1 %). Together with the high import concentration, these metrics point to a sector that is more exposed to supply disruptions and price shocks than a decade ago. A detected price shock on imports from China in 2017, with a 33.8 % price jump and an abnormality score of 27.3, underlines the risk of sudden cost swings.

Source: Autonomy & vulnerability

Conclusion

The EU’s trade in electric lamps (CN 8539) between 2015 and 2025 was reshaped by the LED transition, leading to a radical decline in traditional lamp flows, a near-halving of export value, and a doubling of the export unit price. Imports, overwhelmingly sourced

from China, grew to exceed exports, turning the EU into a net importer for the first time in the observed period. The concentration of supply, combined with a severe erosion of domestic production and the loss of major export markets (US, China, Russia), amplifies the sector's vulnerability. Remaining competitive strengths are increasingly found in niche, high-value segments and in a handful of central and eastern member states. The data point to a sector that has modernised its product mix but at the cost of diminished resilience.

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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](#).