ANNUAL LIGHTING SURVEY OF NORTHWEST ELECTRICAL DISTRIBUTORS 2023

SEPTEMBER 2024

Bonneville Power Administration
Northwest Energy Efficiency Alliance

PREPARED BY:
Cadeo Group

Report Highlights

68%

68% of all unit sales in 2023 were LEDs, with screw-in lamps and downlights having the highest presence of LEDs at 88% and 77% respectively.

7%

Due to the effects of COVID-19 on the non-residential lighting market, unit sales experienced volatility between 2020 and 2023 as sales dipped 17% in 2020, rebounded 32% in 2021, then decreased by 15% in 2022. Total unit sales increased by 7% between 2022 and 2023, indicating that the market is stabilizing after three anomalous years.

77%

LED technologies made up 77% of downlight applications in 2023.

55%

In 2023, 55% of four-foot T8 sales were TLEDs, representing a continued shift away from the once-dominant linear fluorescent lamp.

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Report Overview

TOTAL DISTRIBUTORS	2023 PARTICIPANTS	MARKET SHARE REPRESENTATION	YEARS COVERED
48	24	~62%	2019 – 2023

This report presents the results of the eleventh annual Northwest Energy Efficiency Alliance (NEEA) and Bonneville Power Administration (BPA) Northwest Electrical Distributor Lighting Survey (lighting survey). The Cadeo team (research team) worked with NEEA program staff and Evergreen Energy Partners to recruit participants, successfully engaging 24 participants in the 2023 sales data collection effort. Combining these data submissions with past participating distributors' data, the research team's analysis included data from 48 total distributors. These 48 distributors represent roughly 62% of the total number of distributors in the Northwest.

FIGURE 1 **Distributor Unit Sales, Floor Space, and Branches by State: 2023**

Figure 1 shows the share of collected unit (lamp and fixture) sales by state along with state shares of total commercial floor space and known distributor branch locations for context. The percentages of unit sales by state are similar to the percentages of commercial floor space, with most units going to Washington (52%) and Oregon (33%).

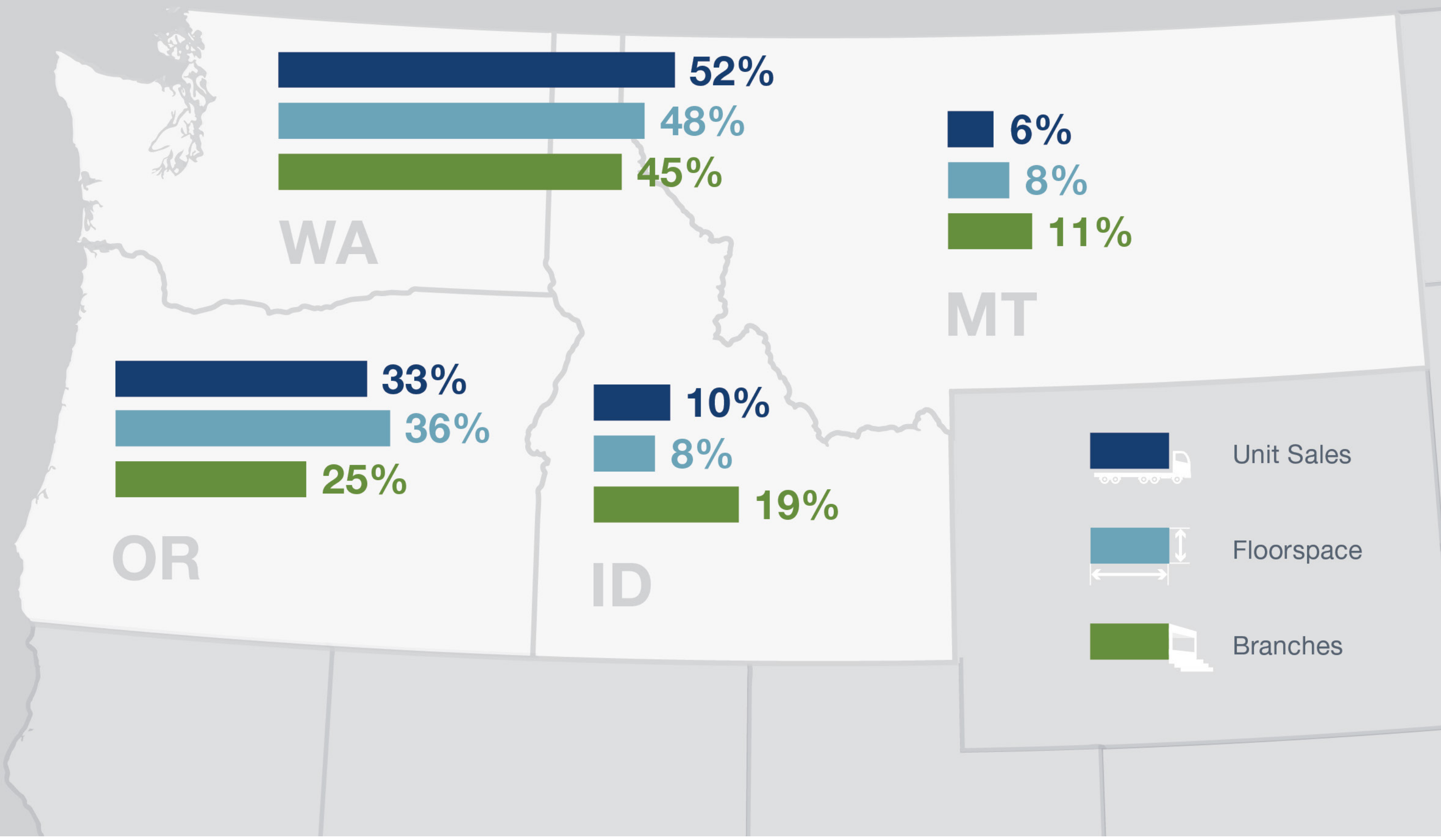


FIGURE 2

Mix of Distributors Submitting Data Compared to the Northwest Distributor Population

This year, 24 Northwest distributors submitted sales data for 2023. **Figure 2** shows the mix of participating distributors (participant sample) by relative size, distribution area, and business model, compared to both the mix of the 48 distributors participating over the 11 years of the study (extrapolated sample) and the mix of the population of distributors in the Northwest (population).

Figure 2 Definitions

Large - more than 10 branches in the Northwest.

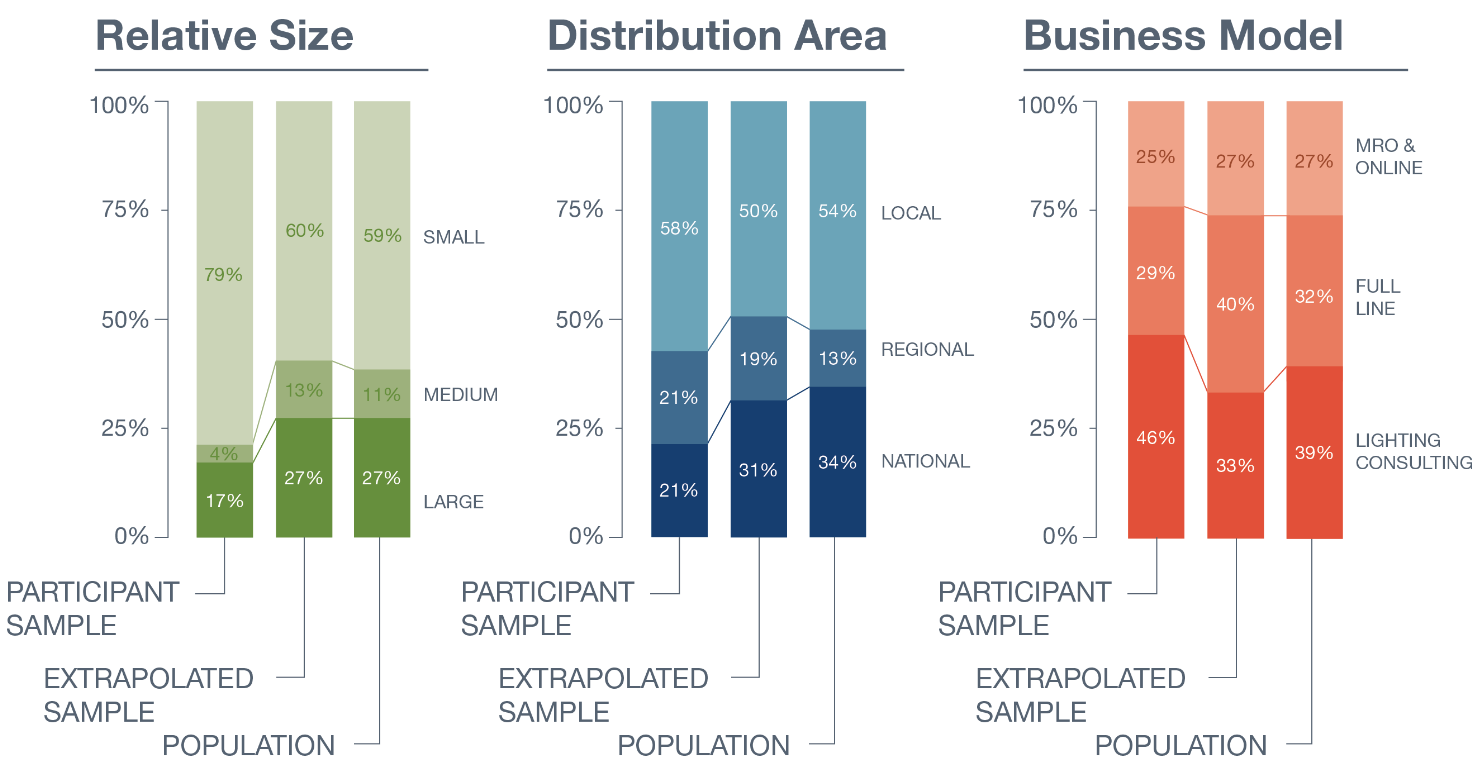
Medium - between 5 and 10 branches in the Northwest.

Small - fewer than 5 branches in the Northwest.

Maintenance, repair and operations (MRO) and online distributors may sell lighting products only or a mix of lighting and other products with a focus on maintenance sales.

Full line distributors sell a variety of electrical products including lighting.

Lighting consulting distributors focus on energy efficiency products and project-based work. This project-based work includes new construction, renovation, and retrofit sales, and tends to focus on LEDs and lighting control products.



Survey Results

FIGURE 3 Percent of Unit Sales by Technology Type, 2019–2023

LEDs remained the largest technology segment of Northwest total unit sales in 2023 at 68%. Linear fluorescents have held a consistent market share at 23% since 2021.

From 2022 to 2023, the total volume of unit sales increased, while the market share of all technologies remained relatively stable, suggesting the market is maintaining its recovery in lighting projects following decreases in sales volumes in previous years. However, the research team projects that both total unit sales and LED unit sales will gradually decline over time due to the extended lifetime of LEDs.

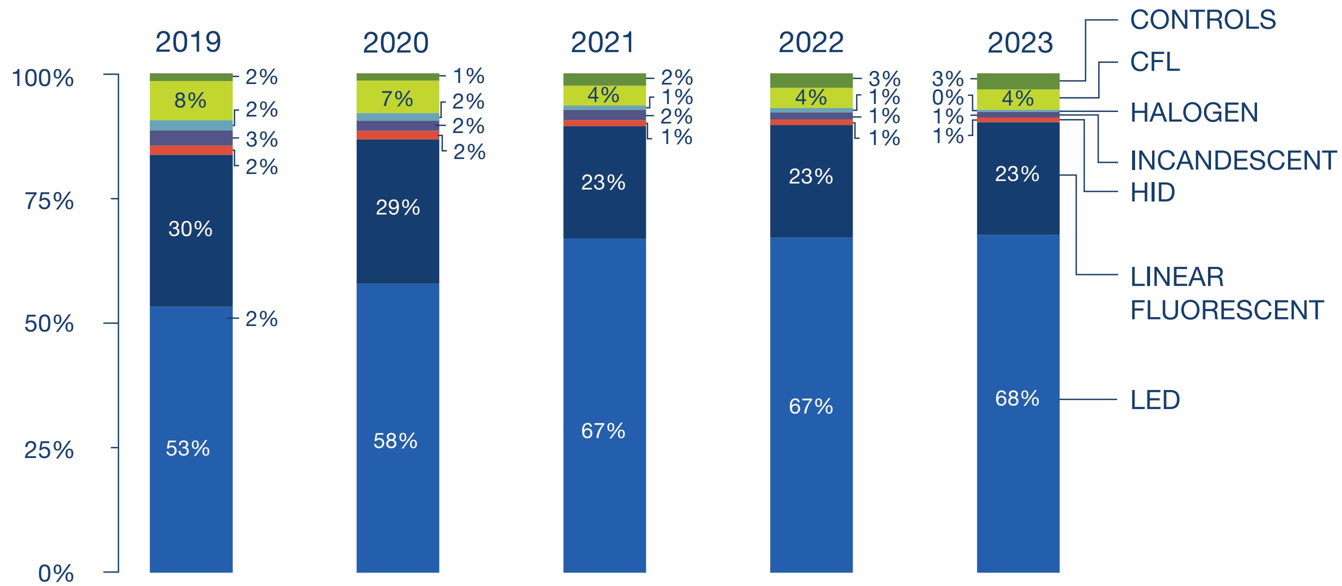


FIGURE 4 Percent of Unit Sales by Technology Type Across Business Models, 2019–2023

The technology sales mixes in 2023 for full line and for MRO and online look relatively similar but these two business models have seen diverging trends since COVID-19. Among full line distributors, LEDs have gained market share, making up 71% of sales in 2023. Among MRO and online distributors, LEDs have slowly been declining since 2021, now making up 50% of sales in 2023, while linear fluorescents have gradually increased. This is likely due to LEDs' longer lifespan and lower replacement needs, which more directly impact maintenance-focused business models. The sales mix of lighting consultant distributors is distinct, with all lighting unit sales coming from LED technologies. Lighting consulting distributors tend to focus on energy efficient projects, so these distributors moved toward LED technologies more quickly. Lighting consulting distributors saw a large spike in controls sales in 2022, with controls making up 34% of total sales, likely due to an influx of controls projects in 2022. However, this sharply decreased to 7% in 2023, which brought sales back to levels typical for the business model and more closely aligns with the 4% market share for full-line distributors.

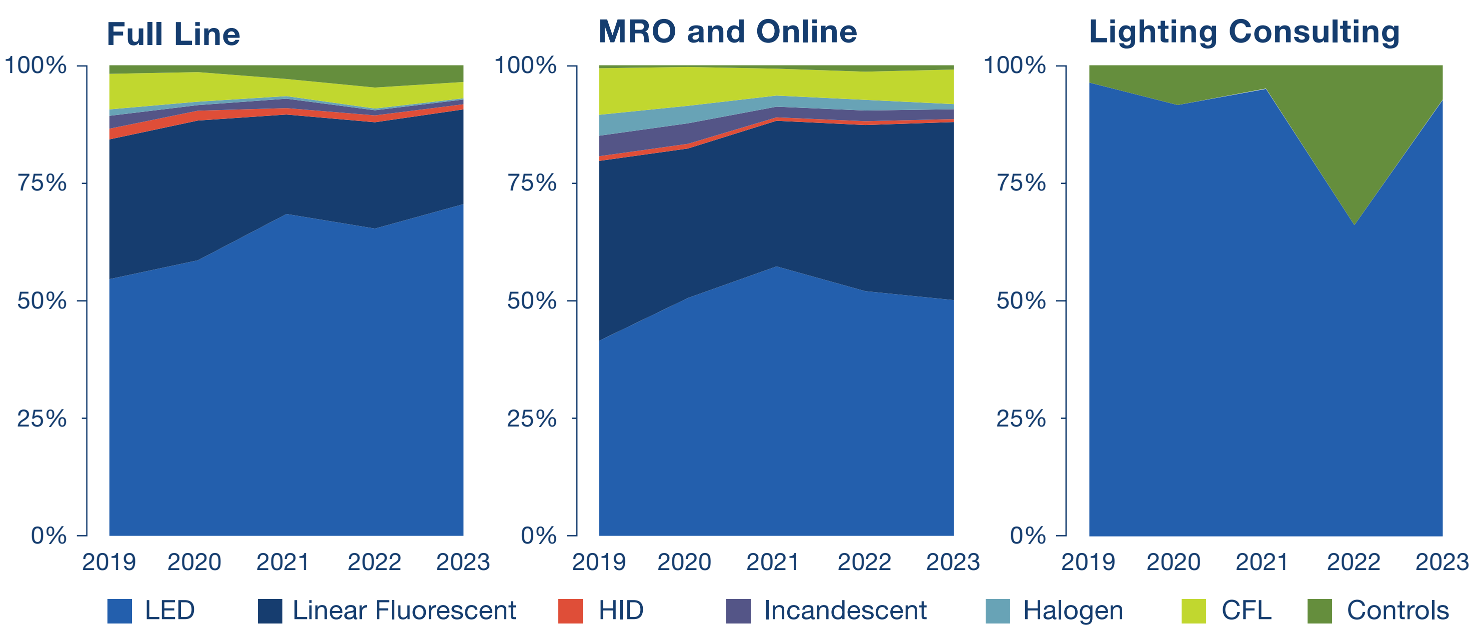


FIGURE 5 Estimated LED Percent Unit Sales, 2019–2023

The sales mix of LED technologies changed between 2022 and 2023. In 2023, TLEDs made up the largest share of total LED unit sales at 39%, followed by reflectors and downlights at 25% of total LED unit sales. Among LED technology types, indoor fixtures increased most from 2022 (14%) to 2023 (20%). Outdoor fixtures saw a decrease in sales mix from 5% in 2022 to 2% in 2023.

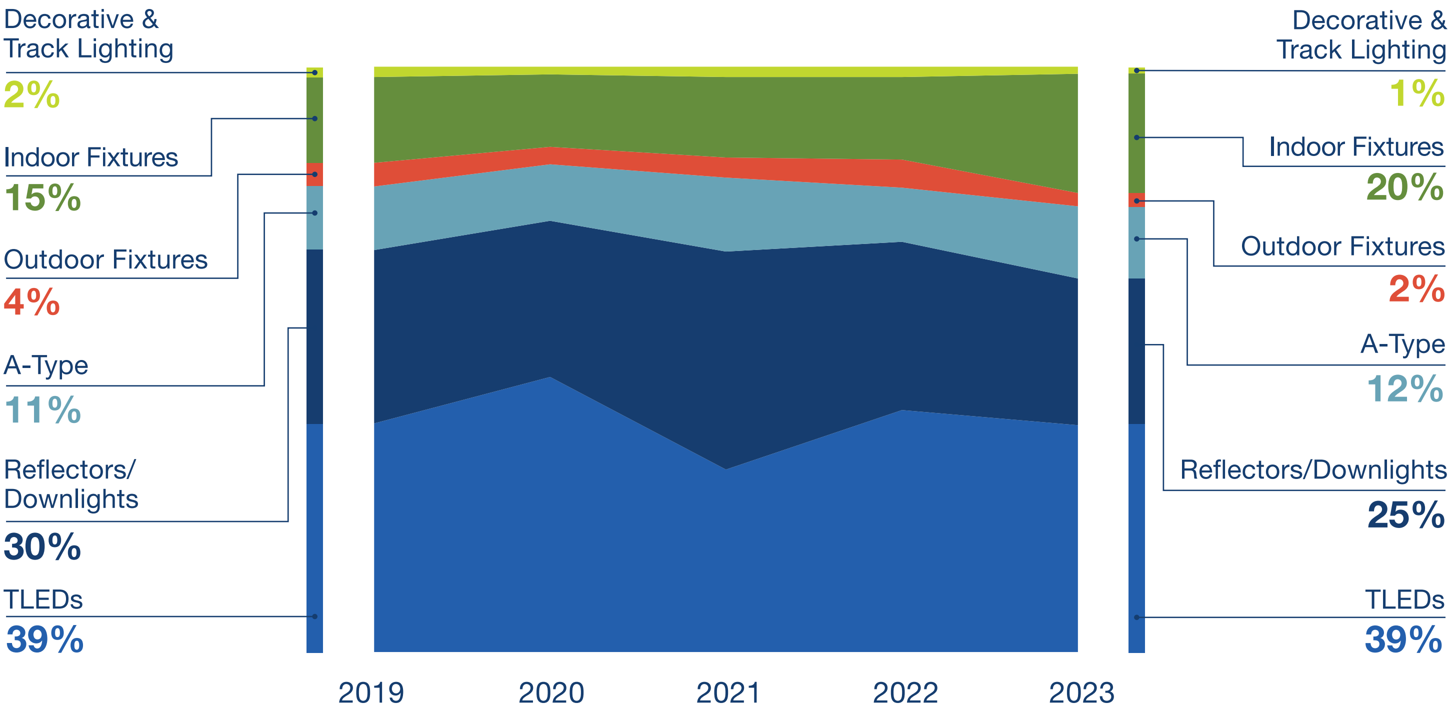


FIGURE 6 LED Penetration by Application, 2019–2023

A-type lamps and reflectors showed the highest market penetration for LEDs in 2023 at 91% and 89%, respectively. Overall LED penetration in decorative and linear lamps was lower than in other categories. Decorative LED lamps showed a small decrease from 69% penetration in 2022 to 66% in 2023, but the long-term trend is still indicating a growth in LED penetration in decorative lamps. LED penetration in linear lamps and fixtures increased from 60% in 2022 to 67% in 2023.

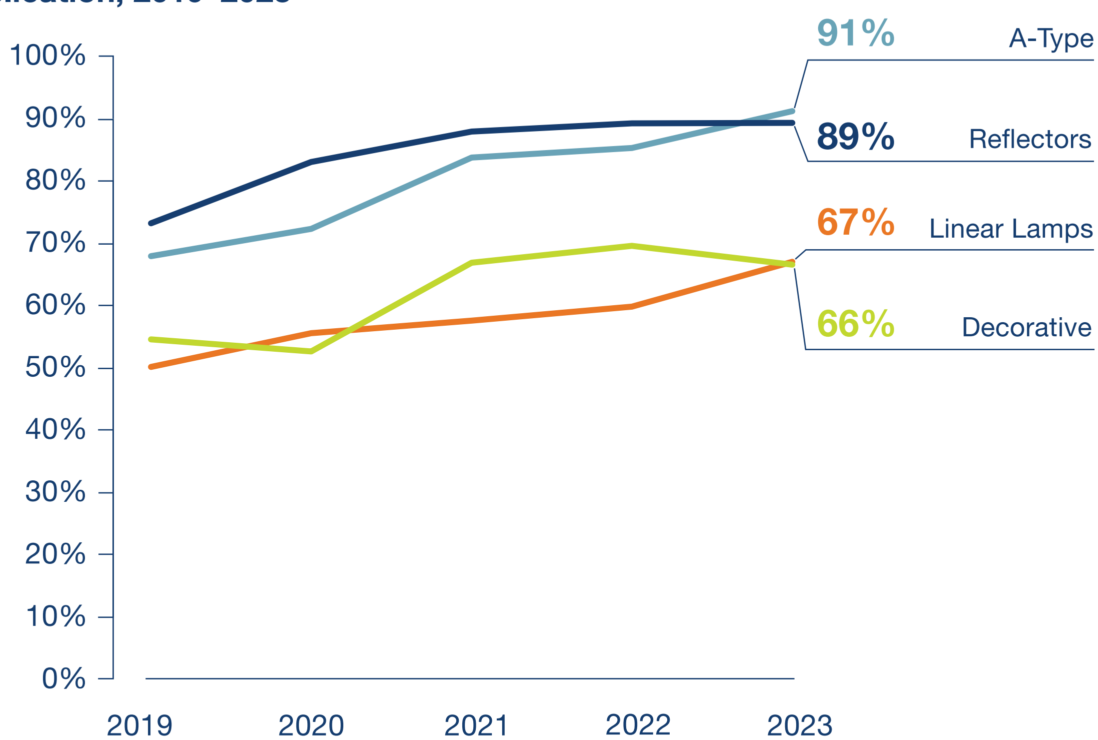


FIGURE 7

Downlight Sales by Technology Type, 2019–2023

For the four downlight products shown, the sales mix continued to favor LED lamp and fixture alternatives over compact fluorescent lamp (CFL) pin-based lamps. The market share of CFL pin-based lamps decreased from 29% in 2022 to 23% in 2023. Sales in LED downlight retrofit kits increased in 2023, from 31% in 2022 to 33% in 2023. LED fixtures and retrofit kits hold the majority of market share over all lamps at 72%. LED technologies made up 77% of downlight applications in 2023—an increase from 71% in 2022.

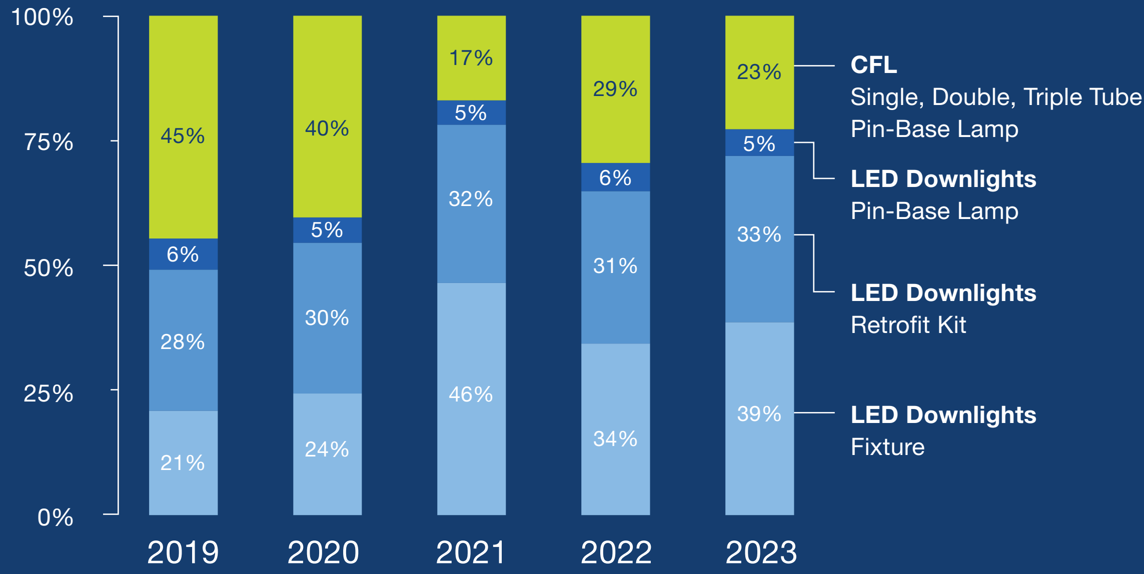


FIGURE 8

Percent Linear Lamp Sales by Type, 2019–2023

Among linear lamps, the sales mix between 4-foot T8 linear fluorescent lamps and TLEDs continued shifting towards TLEDs after becoming equivalent in 2020 and 2021. In 2023, 4-foot T8 linear fluorescent lamps made up 45% of linear lamp sales and TLEDs made up 55%. Reduced wattage linear fluorescent lamp sales remained high in 2023 at 16% of linear lamps. Among TLEDs, UL Type B sales continue to hold the largest market share. The gap between UL Type B sales (37%) and UL Type A sales (11%) slightly widened between 2022 and 2023. UL Type A+B represented 6% of the linear lamp category in 2023, while UL Type C represented 1% percent in 2023.

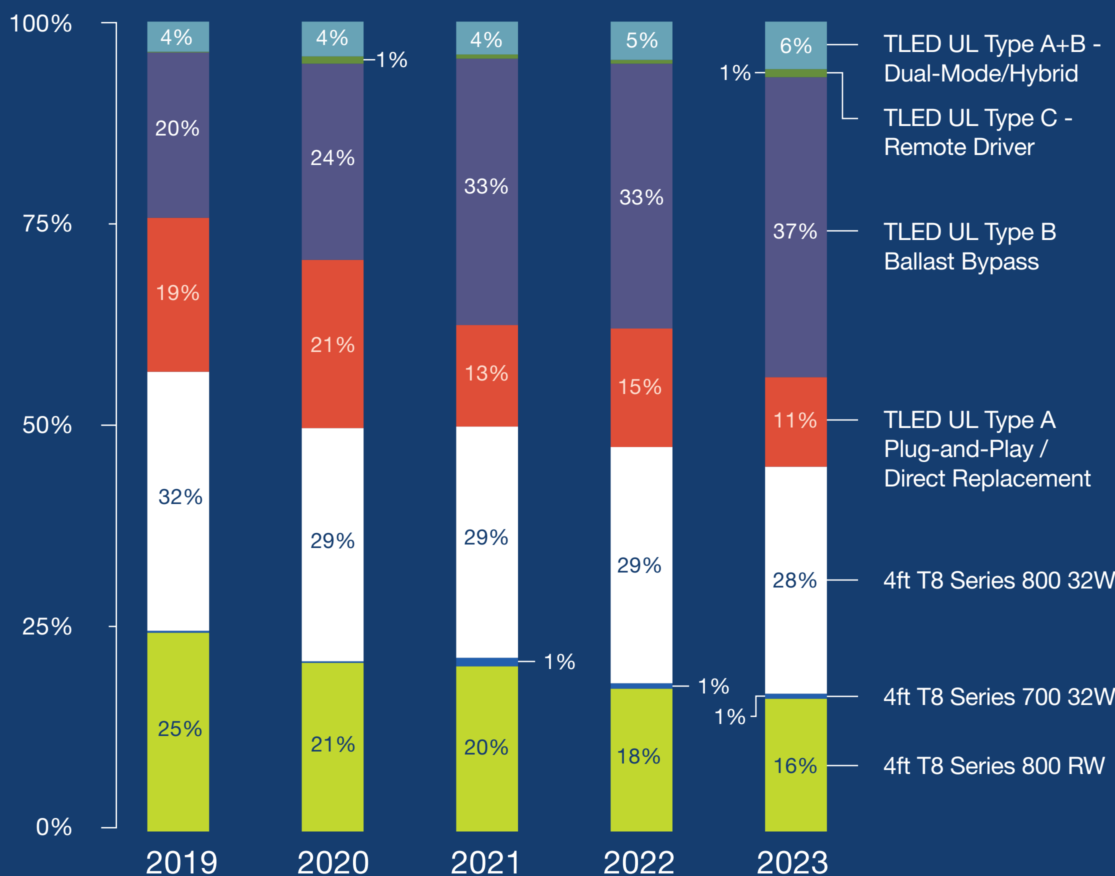


FIGURE 9

Percent of Ambient Linear Lamp and Fixture Sales by Type, 2019–2023

In the ambient linear application, LED products continued to replace linear fluorescent products. LED products reached more than half (52%) of sales in this application for the first time in 2020 and has grown to 59% 2023. T12 four-foot and T8 four-foot sales share decreased from 2022 to 2023, while T5 four-foot sales share held steady. Integrated LED fixtures have generally increased in market share since 2019 and reached 10% of ambient linear lamp and fixture sales in 2023.

NOTE: Sales are normalized to an average of two lamps per fixture.

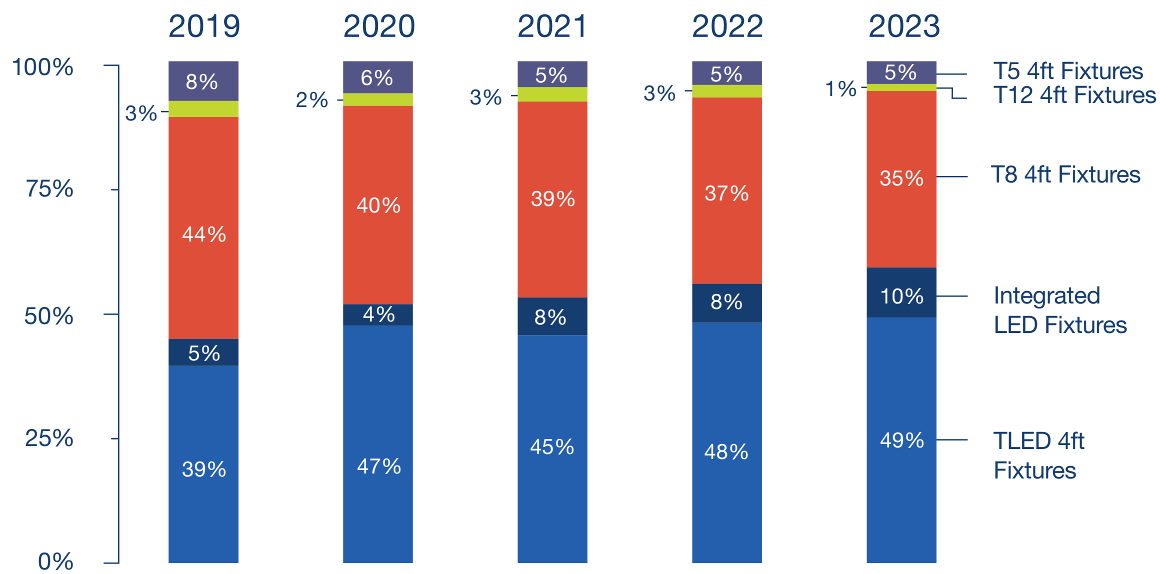
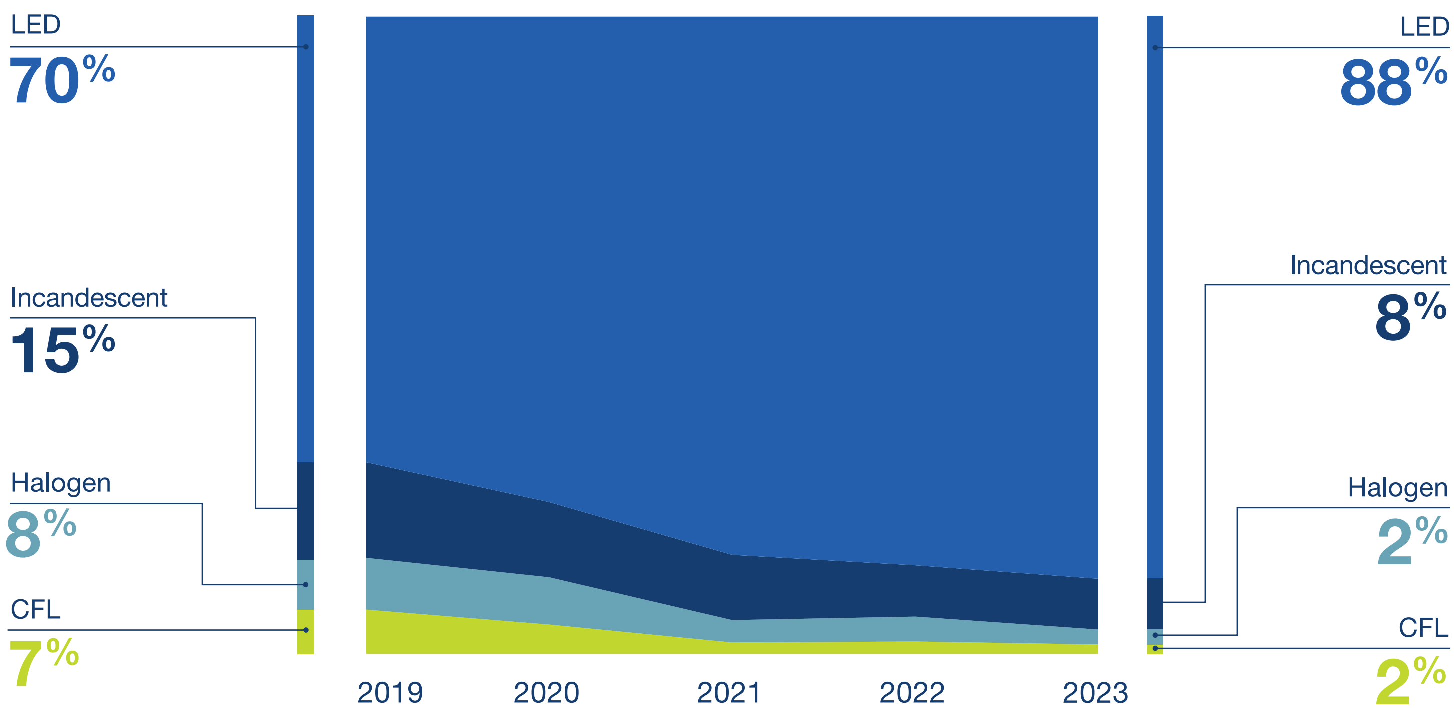


FIGURE 10

Screw-In Lamp Sales by Type, 2019–2023

Among screw-in products, LED products have consistently grown in market share since 2019 and held 88% market share in 2023. The market share of CFLs (2%) did not change from 2022 to 2023, while halogens continued to lose market share and account for a smaller portion of the sales mix each year. Incandescent products held 8% market share in 2023, but this will approach zero in the coming years due to the US Department of Energy's backstop requirement for general service lamps (GSLs). This regulation, which went into effect in July of 2023, requires an efficacy of 45 lumens per watt for GSLs with few exemptions, effectively banning all non-LED products from the screw-in lamp market.



CUSTOMIZED BENCHMARKING REPORT FOR

EXAMPLE DISTRIBUTOR

Benchmarking Summary

*The 2023 annual lighting survey results enabled BPA and NEEA to conduct custom benchmarking analysis intended to help each participating distributor understand market trends and their position in the Northwest lighting market. This section summarizes how **Example Distributor** compares to the other distributors who responded to the survey.*

The research team suggests that when interpreting these results, to keep in mind not all Northwest lighting distributors participated in the survey. The team also cannot be certain all respondents fully reported all their sales. Please note that percentages may not sum to 100 percent due to rounding.

FIGURE 11

Example Distributor Share of Total Sales, 2023

For the year 2023, lamp sales by Example Distributor represented 11% of the total reported sales in the Northwest.

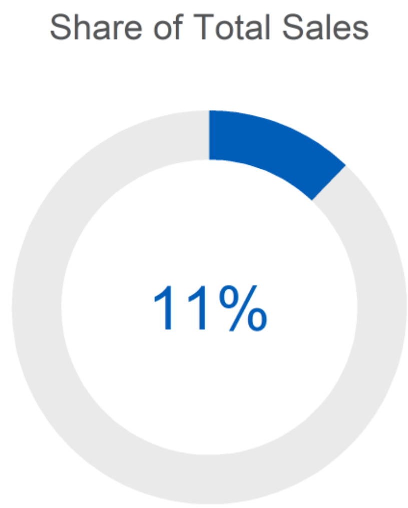


FIGURE 12

Change in LED Unit Sales from 2022–2023

Sales quantities in the LED market increased in 2023, following a period of volatility due to COVID-19. Overall LED unit sales increased by 14% from 2022 to 2023. Example Distributor's LED unit sales increased by 28%, which was a larger increase than the overall market change. The research team expects LED unit sales to slowly decline in future years as the market continues to stabilize, reflecting the impact of the long life of LED products.

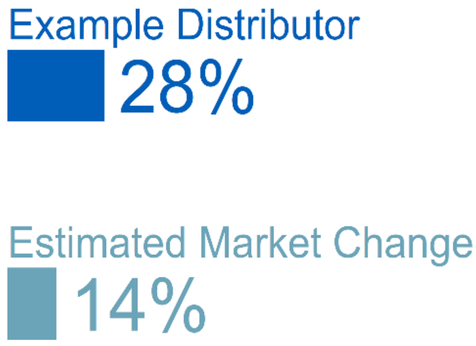
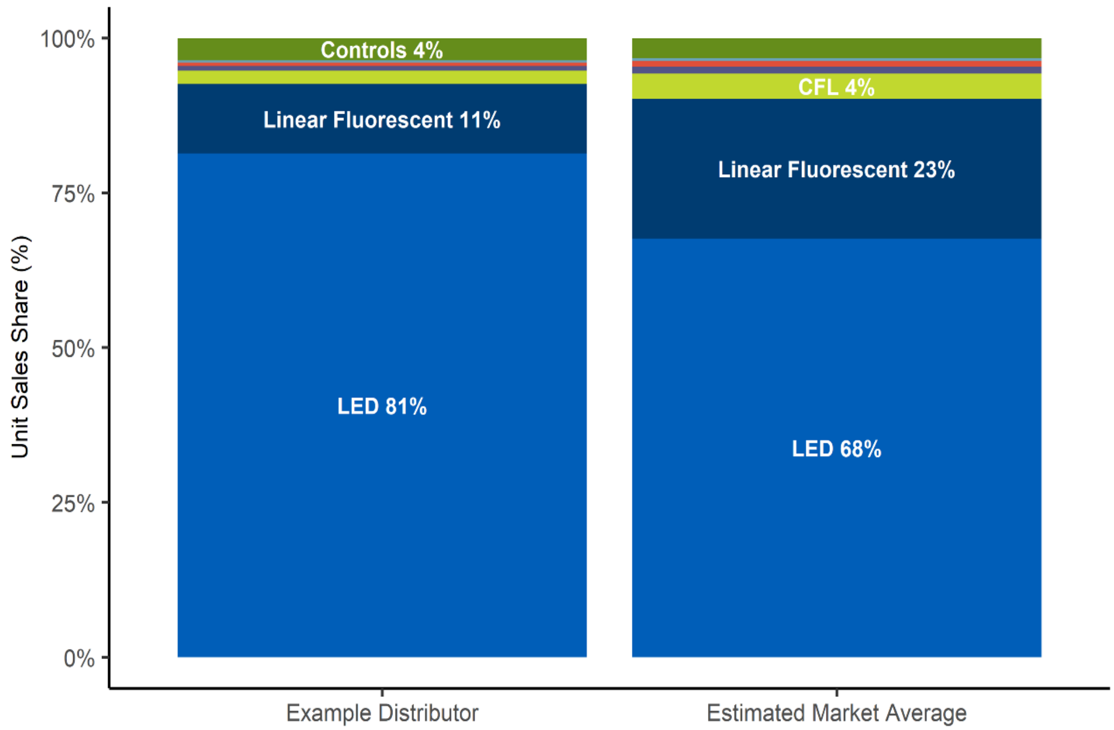


FIGURE 13 Percent of Unit Sales by Technology Type, 2023

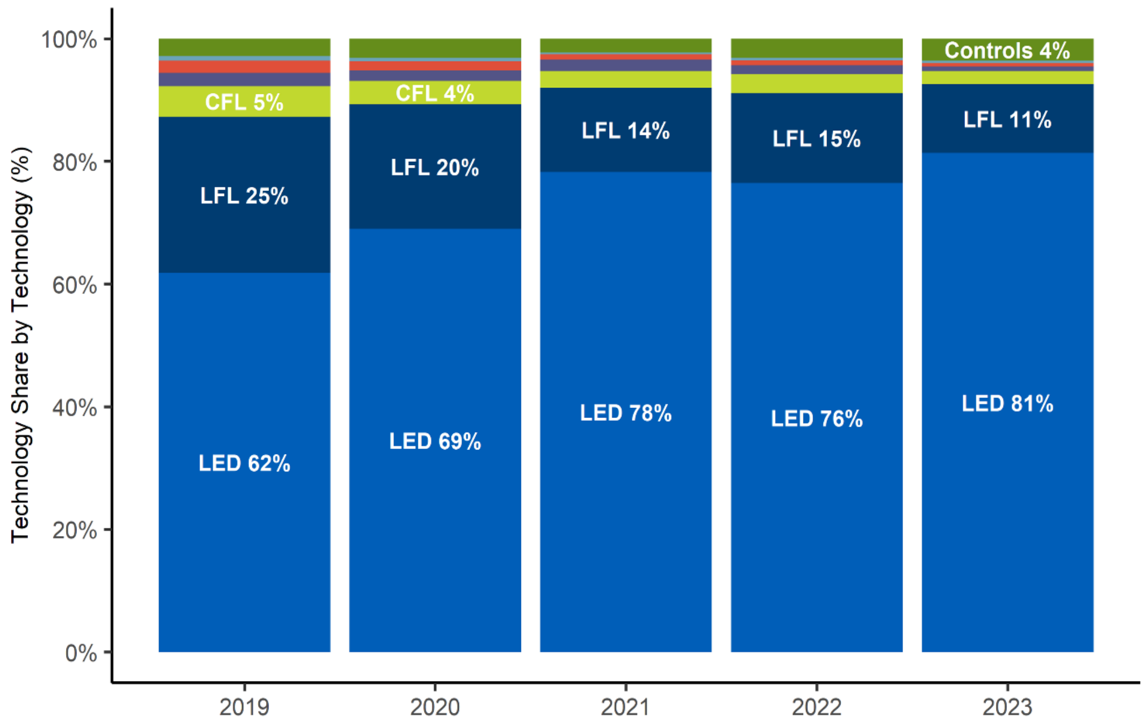
LEDs remained the largest segment of Northwest unit sales in 2023 at 68%. Linear fluorescents are the second largest segment of unit sales at 23%. LEDs accounted for 81% of Example Distributor's unit sales, higher than the market average.



Lighting Technology Type	Example Distributor	Estimated Market Average
Controls	4%	3%
Halogen	0.4%	0.4%
HID	0.6%	0.9%
Incandescent	0.7%	1%
CFL	2%	4%
Linear Fluorescent	11%	23%
LED	81%	68%

FIGURE 14 **Example Distributor's Percent of Unit Sales by Technology Type, 2019–2023**

Figure 14 and the table below show Example Distributor's percent of unit sales by technology over time for 2019-2023. Example Distributor's LED sales as a percentage of total unit sales have increased, consistent with the market trend shown in Figure 3.

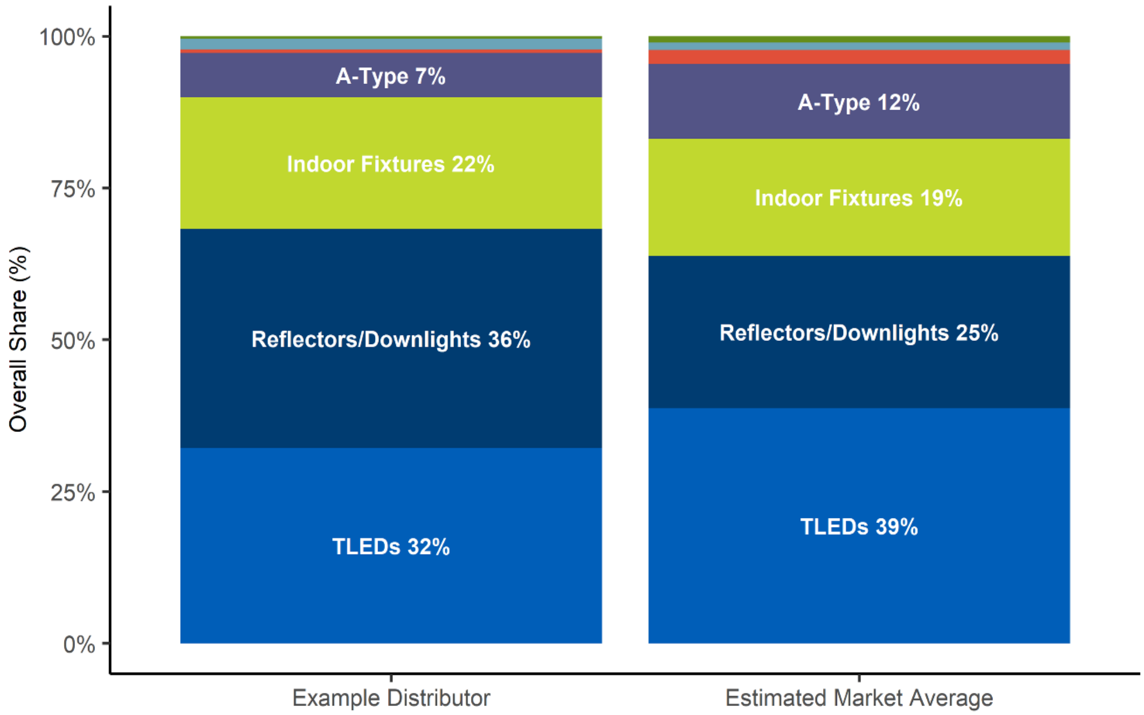


Lighting Technology Type	2019	2020	2021	2022	2023
Controls	3%	3%	2%	3%	4%
Halogen	0.8%	0.5%	0.3%	0.4%	0.4%
HID	2%	2%	0.9%	0.8%	0.6%
Incandescent	2%	2%	2%	1%	0.7%
CFL	5%	4%	3%	3%	2%
Linear Fluorescent	25%	20%	14%	15%	11%
LED	62%	69%	78%	76%	81%

FIGURE 15

2023 LED Percent Unit Sales by Product Type

The top-selling LED product type in 2023 was TLEDs, which totaled 39% of LED unit sales, followed by reflectors and downlights at 25%. TLEDs were 32% of Example Distributor's LED unit sales, less than the market average.

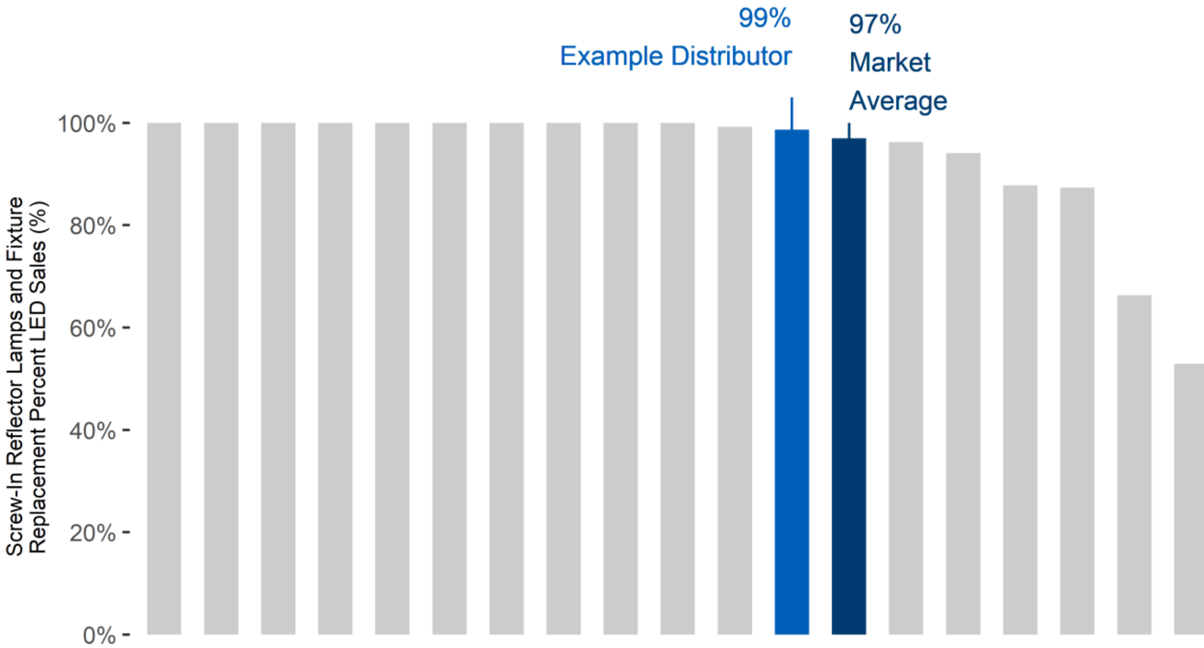


LED Product Type	Example Distributor	Estimated Market Average
Industrial Applications	2%	1%
Decorative & Track Lighting	0.4%	1%
Outdoor Fixtures	0.6%	2%
A-Type	7%	12%
Indoor Fixtures	22%	19%
Reflectors/Downlights	36%	25%
TLEDs	32%	39%

FIGURE 16

2023 Screw-in Reflector Lamps and Fixture Replacement Unit Sales: Percent LED

Looking more closely at screw-in reflectors and downlight fixture replacements (including integrated LED fixtures and retrofit kits), the estimated overall market share for LEDs for this product type grew from 95% in 2022 to 97% in 2023. Example Distributor reported 99% of reflector and downlight unit sales were LED, in line with the market average.

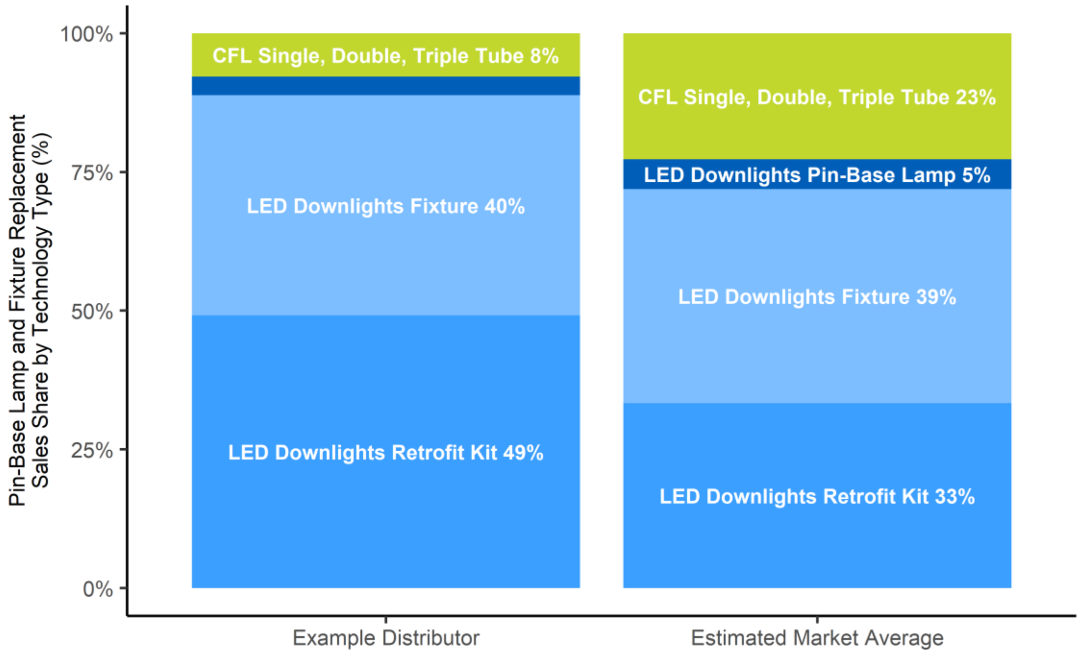


NOTE: Each gray column represents a reporting distributor with sales in this category.

FIGURE 17

2023 Pin-base Lamp and Fixture Replacement Sales Share by Technology Type

The commercial downlight market has shifted from pin-based CFLs towards LED alternatives, including pin-based LED lamps, retrofit kits, and fixtures. In 2023, the market average showed that 77% of downlight sales were LED. Example Distributor's downlight sales were 92% LED, which was higher than the market average.

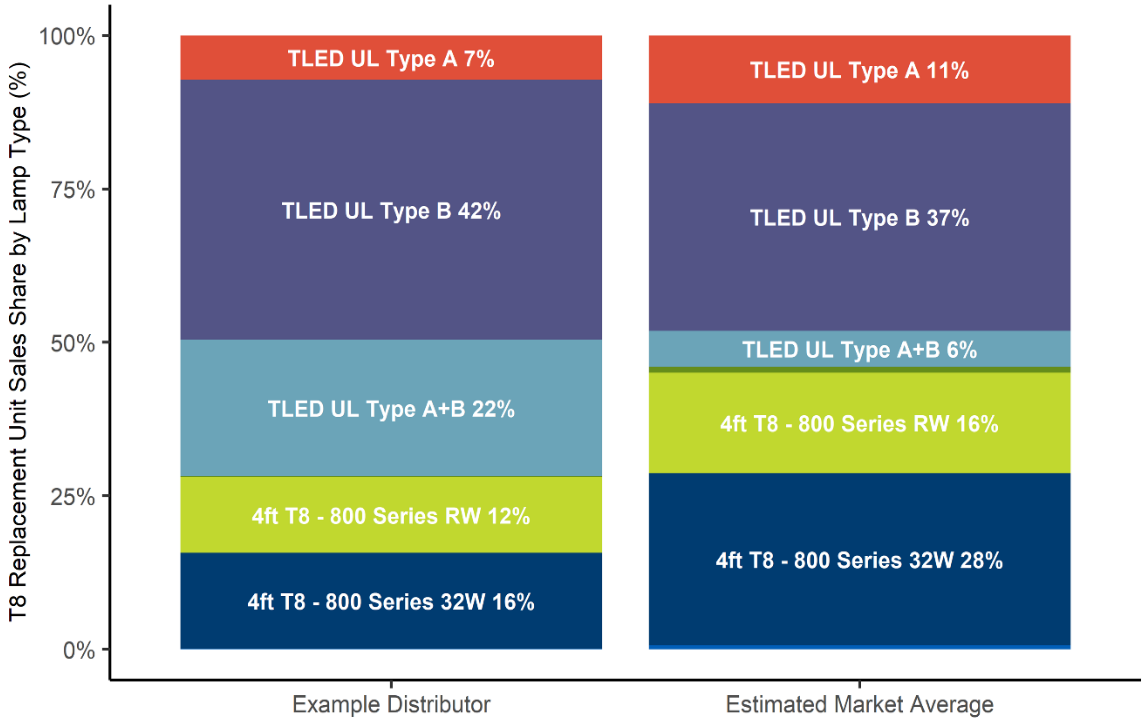


Lighting Technology Type	Example Distributor	Estimated Market Average
CFL Single, Double, Triple Tube	8%	23%
LED Downlights Pin-Base Lamp	3%	5%
LED Downlights Fixture	40%	39%
LED Downlights Retrofit Kit	49%	33%

FIGURE 18

2023 Four-Foot T8 Replacement Percent Unit Sales by Lamp Type

The 32W four-foot T8 lamp remains the dominant category among LFLs in the four-foot T8 replacement category. Altogether, just over 44% of four-foot T8 replacement lamps in 2023 were LFL technologies. UL Type A and UL Type B TLEDs together represented 48% of the four-foot T8 replacement market in 2023 with UL Type B making up the majority at 37%. UL Type A+B and UL Type C represent just over 7% of four-foot T8 replacement category lamp sales. Example Distributor reported higher than average sales of TLEDs, at 72% of four-foot T8 replacement sales.

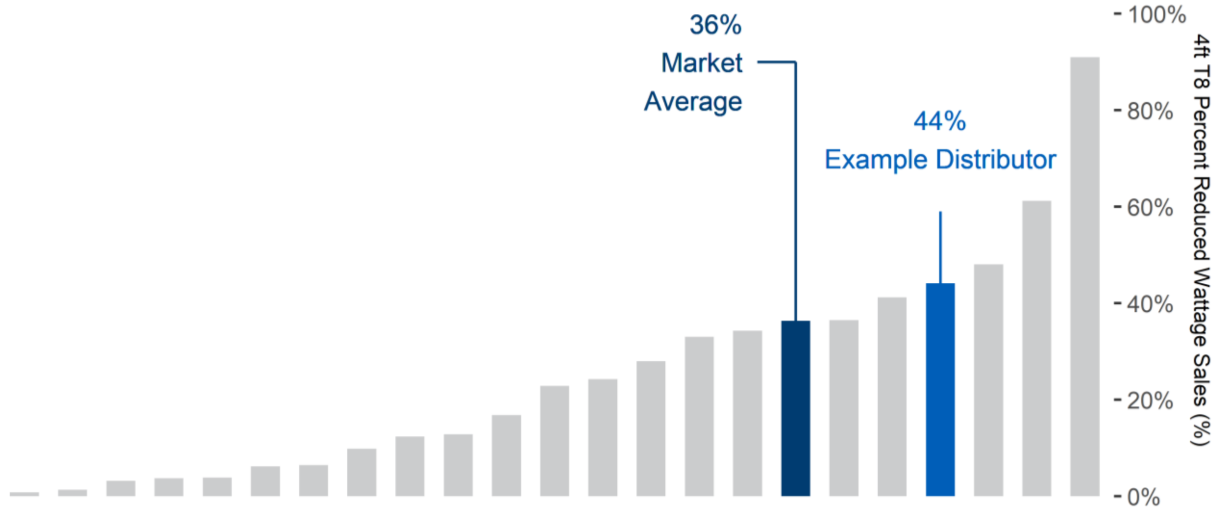


Lighting Technology Type	Example Distributor	Estimated Market Average
TLED UL Type A - Plug-and-Play/Direct Replacement	7%	11%
TLED UL Type B - Ballast Bypass	42%	37%
TLED UL Type A+B - Dual-Mode/Hybrid	22%	6%
TLED UL Type C - Remote Driver	0.1%	1%
4ft T8 - 800 Series RW	12%	16%
4ft T8 - 800 Series 32W	16%	28%
4ft T8 - 700 Series 32W	0.1%	0.6%

FIGURE 19

2023 Four-Foot T8 Linear Fluorescent Lamp Unit Sales: Percent Reduced Wattage

Of course, TLEDs are not the only energy-saving option for linear lamps. Reduced wattage (25W and 28W) fluorescent lamps also accounted for a significant market share of reported sales. Example Distributor's reduced wattage lamp sales represented 44% of their four-foot T8 linear fluorescent sales, which was higher than the market average of 36%.



NOTE: Each gray column represents a reporting distributor with sales in this category.

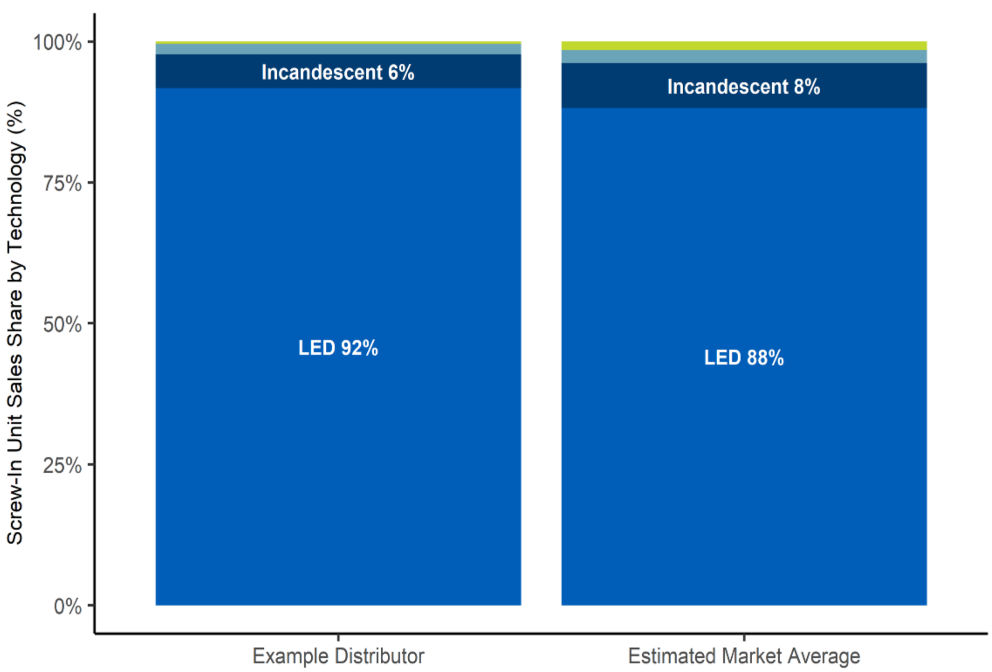


FIGURE 20

2023 Screw-In Unit Sales

Finally, the team examined trends in screw- in lamp sales, including A- type, screw-in reflectors, and decorative. 92% of Example Distributor's screw-in unit sales were LED. This is higher than the market average, which was 88% LED.

Lighting Technology Type	Example Distributor	Estimated Market Average
CFL	0.4%	2%
Halogen	2%	2%
Incandescent	6%	8%
LED	92%	88%

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