

MERSEN FACILITY COLUMBIA, TN

LED LIGHTING PROJECT SUCCESS STORY

Delivering energy efficiency, safety,
and measurable savings for a
brighter, more productive facility.



Mersen
Manufacturing Facility |
Columbia, TN



Proven Results



Sustainable
Impact



Measurable Value



Future Ready

EXECUTIVE SUMMARY

US Lighting Systems partnered with Mersen, a manufacturer based in Columbia, TN, to deliver a comprehensive LED lighting retrofit across its manufacturing facility. The upgrade increased light levels by over 400% while generating significant energy, maintenance, and financial savings.



260 FIXTURES RETROFITTED

Replaced/retrofitted 260 existing fixtures with high-efficiency LED technology.



\$120,893.47 NET PROJECT COST

After \$48,932.08 in TVA utility rebates and incentives.



10-YEAR WARRANTY LED SOLUTION

American-made LED fixtures backed by a 10-year warranty, including occupancy sensors.



\$1,092,148.64 LIFECYCLE SAVINGS

Total estimated savings over 10 years.



TURNKEY PROJECT MANAGEMENT

US Lighting Systems managed the entire process, from engineering design to rebate administration.

AT A GLANCE



1,097,508
kWh

ENERGY REDUCED ANNUALLY



\$107,227

ANNUAL ENERGY SAVINGS



\$1,988

ANNUAL MAINTENANCE SAVINGS



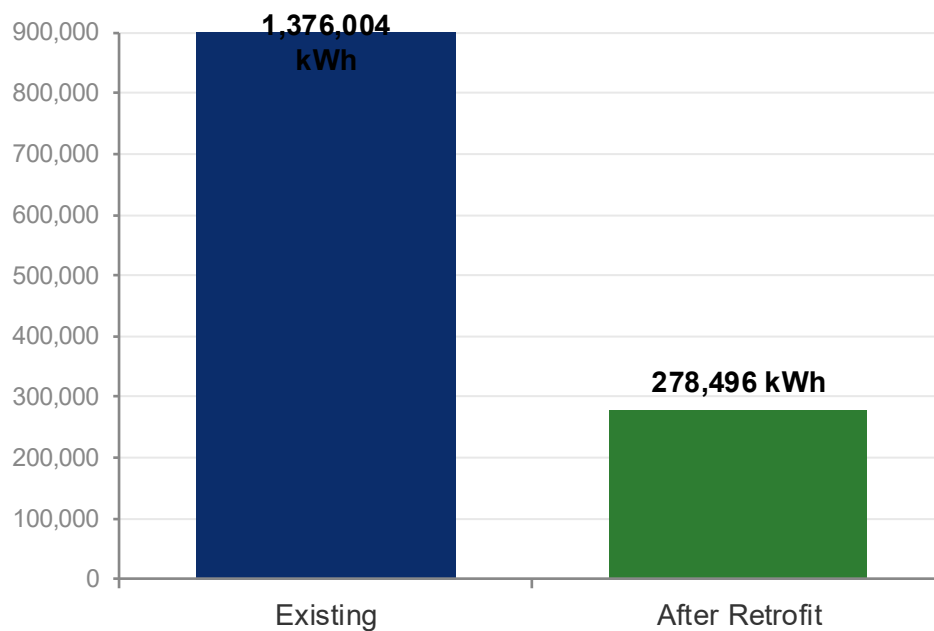
13 MONTHS

PAYBACK PERIOD

ENERGY & ENVIRONMENTAL IMPACT

This LED upgrade delivers measurable reductions in energy consumption and meaningful environmental benefits.

ENERGY SAVINGS



ENVIRONMENTAL IMPACT EQUIVALENTS (ANNUALLY)



≈ **952** ACRES

OF TREES PLANTED

Carbon sequestration
equivalent



≈ **777** METRIC TONS

OF CO₂ OFFSET

Removed from the atmosphere



A more sustainable facility today for a more efficient tomorrow.

Environmental impact values are calculated using EPA Greenhouse Gas Equivalencies Calculator and U.S. Forestry Service data.

MANUFACTURING-READY INSTALLATION ADVANTAGE

Turnkey retrofit strategy designed for active manufacturing facilities: efficient, safe, and low-disruption.

TURNKEY PROJECT MANAGEMENT

- ✓ **Materials & Equipment**
Full sourcing and ordering of all fixtures and equipment
- ✓ **Labor Supervision**
On-site oversight throughout the installation process
- ✓ **Disposal & Recycling**
Responsible removal of existing fixtures, lamps, and ballasts
- ✓ **Minimal Disruption**
Installation scheduled around active production operations

FACILITY IMPROVEMENTS

- ✓ **Improved visibility**
Light levels increased over 400%, from 7fc to 30fc
- ✓ **Phased sequencing**
Installation phased to minimize disruption to production lines
- ✓ **Faster deployment**
Shorter installation windows compared with full fixture replacement
- ✓ **Safety-focused outcome**
Brighter, safer working environment for employees

INCENTIVES + MAINTENANCE

- ✓ **\$48,932**
Utility rebates acquired
- ✓ **Rebate process**
Pre-approval and administration handled for you
- ✓ **American-made fixtures**
LED fixtures backed by a 10-year warranty
- ✓ **Long-term support**
Lower future labor costs and faster maintenance cycles

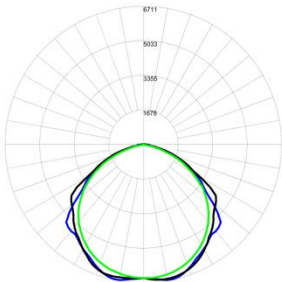
Designed to upgrade active manufacturing environments with speed, safety, and minimal disruption.

LIGHT DISTRIBUTION & OPTICAL PERFORMANCE

Engineered optics from the Linmore CH2 Commercial High Bay platform, configured to raise light levels from an average of 7fc to over 30fc across the production floor.

CLEAR

Polar Graph



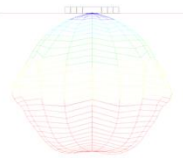
Zonal Lumen Summary

CH20S-A1-20K4MS-40-80-CL

Zone	Lumens	% Lamp	% Fixt.
0-30	5,302.46	26.40	26.40
0-40	8,800.28	43.70	43.70
0-60	16,000.25	79.50	79.50
0-90	19,840.73	98.60	98.60
0-180	20,116.98	100.00	100.00

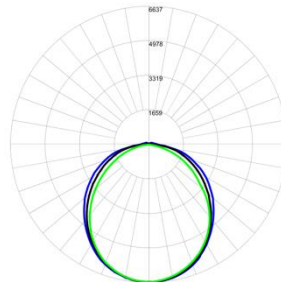
Total luminaire efficiency = 100.00%

Light Intensity



FROSTED

Polar Graph



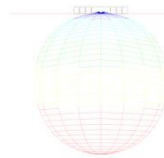
Zonal Lumen Summary

CH20S-A1-20K4MS-40-80-FR

Zone	Lumens	% Lamp	% Fixt.
0-30	5,096.06	26.10	26.10
0-40	8,278.58	42.40	42.40
0-60	14,438.44	74.00	74.00
0-90	18,910.90	96.90	96.90
0-180	19,514.43	100.00	100.00

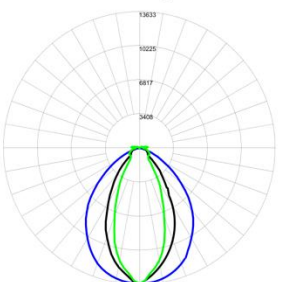
Total luminaire efficiency = 100.00%

Light Intensity



NARROW

Polar Graph



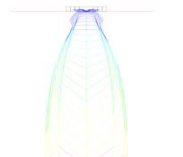
Zonal Lumen Summary

CH20S-A1-20K4MS-40-80-NW

Zone	Lumens	% Lamp	% Fixt.
0-30	8,090.40	41.00	41.00
0-40	11,474.24	58.20	58.20
0-60	15,997.12	81.10	81.10
0-90	18,668.61	94.70	94.70
0-180	19,714.75	100.00	100.00

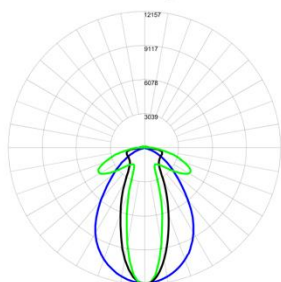
Total luminaire efficiency = 100.00%

Light Intensity



AISLE

Polar Graph



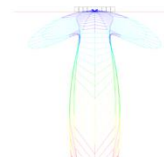
Zonal Lumen Summary

CH20S-A1-20K4MS-40-80-AL

Zone	Lumens	% Lamp	% Fixt.
0-30	5,947.13	30.50	30.50
0-40	8,274.55	42.40	42.40
0-60	12,889.66	66.10	66.10
0-90	18,344.27	94.00	94.00
0-180	19,513.06	100.00	100.00

Total luminaire efficiency = 100.00%

Light Intensity



FIXTURE PERFORMANCE



30,784

NOMINAL LUMEN OUTPUT



173 LPW

LUMINAIRE EFFICACY



0-10V

DIMMABLE CONTROL



10-Year

L70 PERFORMANCE WARRANTY

Representative distribution data for the Linmore CH2 Commercial High Bay platform; Mersen's installation uses the 31K high-output configuration.

Precision optics ensure uniform, glare-controlled coverage across every zone of the facility.