Equipment Specification Document

Project: Sustainable Technology Manufacturing Facility Upgrade

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Prepared by: Sustainability Engineering Team

1. Motor Systems Specifications

Primary Production Motor - Line A

Manufacturer:	EcoMotor Industries	**Model:**	EM-IE4-75-4P
Rated Power:	75 kW	**Voltage:**	400V, 3-phase, 50Hz
Efficiency Class:	IE4 (Premium Efficiency)	**Measured Efficiency:**	94.2% at 100% load
Power Factor:	0.89 at rated load	**Operating Hours:**	6,500 hours/year
Load Factor:	85% average	**Annual Energy:**	425,250 kWh/year

Cooling System Motor - HVAC Unit 1

Manufacturer:	EcoDrive Systems	**Model:**	GD-VFD-30-2P
Rated Power:	30 kW	**Efficiency:**	92.8% (IE3 class)
Variable Frequency Drive:	Yes, 0-60Hz range	**Power Factor:**	0.92 with VFD

2. Building Envelope Data

Wall Assembly - South Facade

Component	Thickness	Material	R-Value (m²·K/W)
Concrete Block	200mm	Reinforced Concrete	0.118
Insulation	100mm	XPS Foam	2.941
Brick Veneer	100mm	Clay Brick	0.130

Total U-Value: 0.28 W/m²·K

Required Maximum: 0.35 W/m²·K

Compliance Status: PASS

Thermal Bridge Factor: 0.05 W/m²·K

Window Systems

Type: Double-glazed, low-E coating

Frame Material: Thermally broken aluminum

Glass Specification: 6mm + 16mm argon + 6mm low-E

U-Value: 1.8 W/m²·K

SHGC: 0.35

VLT: 0.68

3. HVAC Performance Data

Chiller System - Central Plant

Manufacturer:	EfficientCool Corp	**Model:**	EC-MAG-500RT
Cooling Capacity:	1,760 kW (500 RT)	**Full Load COP:**	6.2
IPLV:	7.8	**Refrigerant:**	R-134a (transitioning to R-1234ze)

VRF Heating System

Heating Capacity:	1,850 kW @ 7°C outdoor	**Measured HSPF:**	13.1 Btu/Wh

Duct System Test Results

Total Duct Leakage:	5.0% @ operating pressure

Energy Recovery Ventilator

Sensible Effectiveness:	77.8%	**Latent Effectiveness:**	86.4%

3.5. Lighting System

LED Fixtures - Production Area

Fixture Type:	2x4 LED Troffer	**Power:**	32W
Luminous Output:	4,200 lumens	**Measured Efficacy:**	131.3 lm/W
Lighting Power Density:	0.83 W/ft²	**Occupancy Sensors:**	45 units (all passing)
Daylight Sensors:	28 units (all passing)		

4. Solar PV System

Rooftop Installation

Panel Manufacturer: SolarMax Technologies

- **Panel Manufacturer:** SolarMax Technologies
- **Model:** SM-450W-Mono
- **Panel Efficiency:** 20.8%
- **System Size:** 500 kW DC
- **Inverter Model:** SolarMax SMX-500-HE
- **Inverter Efficiency:** 96.5% (weighted CEC)
- **Annual Generation:** 650 MWh (estimated)
- **Energy Yield Target:** 1,250 kWh/kWp/year
- **Measured Energy Yield:** 1,300 kWh/kWp/year
- **Performance Ratio:** 0.82
- **IEEE 1547 Compliance:** Certified (UL 1741)

5. Sustainability Targets

Performance Goal	Target Value
Energy Intensity Reduction	25% vs. baseline
Renewable Energy	35% of total consumption
Peak Demand Reduction	15% through load management
Carbon Footprint	40% reduction in Scope 2

Document Status: Draft for Compliance Review | **Next Review Date:** December 15, 2025 | **Approval Required:** Chief Sustainability Officer