COMcheck Software Version 4.1.5.5

Mechanical Compliance Certificate

Section 1: Project Information

Energy Code: **2009 IECC**
Project Title: IXD LIT3 GEN 5M
Project Type: New Construction

Construction Site:	Owner/Agent:	Designer/Contractor:
Port of Little Rock Little Rock, AR 72206		Wes Colgan Kraemer Consulting Engineers PLLC 2050 W. Whispering Wind Dr. #158

Section 2: General Information

Building Location (for weather data):	Little Rock, Arkansas
Climate Zone:	3a

Section 3: Mechanical Systems List

Quantity **System Type & Description**

1 25T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 400 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 300 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 10.60 EER, Required Efficiency: 9.80 EER + 9.5 IPLV
Fan System: 25T | Warehouse -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 9 Supply, Constant Volume, 10000 CFM, 7.5 motor nameplate hp

1 20T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 400 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 240 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 11.00 EER, Required Efficiency: 9.80 EER + 9.5 IPLV
Fan System: 20T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 10 Supply, Constant Volume, 8000 CFM, 5.0 motor nameplate hp

1 17.5T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 350 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 210 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.00 EER, Required Efficiency: 10.80 EER
Fan System: 17.5T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 17 Supply, Constant Volume, 7000 CFM, 5.0 motor nameplate hp

1 15T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 350 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 180 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.00 EER, Required Efficiency: 10.80 EER
Fan System: 15T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 16 Supply, Constant Volume, 6000 CFM, 3.0 motor nameplate hp

1 12.5T (Single Zone) :

Heating: 1 each - Other, Gas, Capacity = 250 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 150 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.10 EER, Required Efficiency: 10.80 EER
Fan System: 12.5T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 8 Supply, Constant Volume, 5000 CFM, 3.0 motor nameplate hp

1 10T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 200 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 120 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.40 EER, Required Efficiency: 11.00 EER
Fan System: 10T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 2 Supply, Constant Volume, 4000 CFM, 3.6 motor nameplate hp

1 8.5T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 150 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 102 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.50 EER, Required Efficiency: 11.00 EER
Fan System: 8.5T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 7 Supply, Constant Volume, 3400 CFM, 2.0 motor nameplate hp

1 7.5T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 150 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 90 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.60 EER, Required Efficiency: 11.00 EER
Fan System: 7.5T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 6 Supply, Constant Volume, 3000 CFM, 2.4 motor nameplate hp

1 6T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 120 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 72 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 12.60 EER, Required Efficiency: 11.00 EER
Fan System: 6T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 15 Supply, Constant Volume, 2400 CFM, 1.5 motor nameplate hp

1 5T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 80 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 60 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 14.20 SEER, Required Efficiency: 13.00 SEER
Fan System: 5T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 5 Supply, Constant Volume, 2000 CFM, 1.0 motor nameplate hp

1 4T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 80 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 48 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 14.20 SEER, Required Efficiency: 13.00 SEER
Fan System: 4T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
FAN 3 Supply, Constant Volume, 1600 CFM, 1.0 motor nameplate hp

1 3T (Single Zone) :
Heating: 1 each - Other, Gas, Capacity = 80 kBtu/h
No minimum efficiency requirement applies
Cooling: 1 each - Single Package DX Unit, Capacity = 36 kBtu/h, Air-Cooled Condenser, Air Economizer
Proposed Efficiency = 15.00 SEER, Required Efficiency: 13.00 SEER
Fan System: 3T | Office -- Compliance (Motor nameplate HP method) : Passes

Fans:
1200 cfm Supply, Constant Volume, 1200 CFM, 1.0 motor nameplate hp

Section 4: Requirements Checklist

Requirements Specific To: 25T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 9.80 EER + 9.5 IPLV
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- ☐ 4. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- ☐ 5. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: 20T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 9.80 EER + 9.5 IPLV
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- ☐ 4. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- ☐ 5. Hot gas bypass limited to 25% of total cooling capacity

Requirements Specific To: 17.5T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 10.80 EER
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- ☐ 4. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- ☐ 5. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: 15T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 10.80 EER
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- ☐ 4. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- ☐ 5. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: 12.5T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 10.80 EER
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- ☐ 4. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- ☐ 5. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: 10T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 11.00 EER
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- ☐ 4. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- ☐ 5. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: 8.5T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 11.00 EER
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.
- ☐ 4. Hot gas bypass prohibited unless system has multiple steps of unloading or continuous capacity modulation
- ☐ 5. Hot gas bypass limited to 50% of total cooling capacity

Requirements Specific To: 7.5T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 11.00 EER
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.

Requirements Specific To: 6T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 11.00 EER
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.

Requirements Specific To: 5T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 13.00 SEER
- ☐ 2. Integrated economizer is required for this location and system.
- ☐ 3. Cooling system provides a means to relieve excess outdoor air during economizer operation.

Requirements Specific To: 4T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 13.00 SEER

Requirements Specific To: 3T :

- ☐ 1. Equipment minimum efficiency: Single Package Unit: 13.00 SEER

Generic Requirements: Must be met by all systems to which the requirement is applicable:

- ☐ 1. Plant equipment and system capacity no greater than needed to meet loads
  Exception(s):
  - ☐ Standby equipment automatically off when primary system is operating
  - ☐ Multiple units controlled to sequence operation as a function of load
- ☐ 2. Minimum one temperature control device per system
- ☐ 3. Minimum one humidity control device per installed humidification/dehumidification system
- ☐ 4. Load calculations per ASHRAE/ACCA Standard 183.
- ☐ 5. Automatic Controls: Setback to 55°F (heat) and 85°F (cool); 7-day clock, 2-hour occupant override, 10-hour backup
  Exception(s):
  - ☐ Continuously operating zones
- ☐ 6. Outside-air source for ventilation; system capable of reducing OSA to required minimum
- ☐ 7. R-5 supply and return air duct insulation in unconditioned spaces
  R-8 supply and return air duct insulation outside the building
  R-8 insulation between ducts and the building exterior when ducts are part of a building assembly
  Exception(s):
  - ☐ Ducts located within equipment
  - ☐ Ducts with interior and exterior temperature difference not exceeding 15°F.
- ☐ 8. Mechanical fasteners and sealants used to connect ducts and air distribution equipment
- ☐ 9. Ducts sealed - longitudinal seams on rigid ducts; transverse seams on all ducts; UL 181A or 181B tapes and mastics
- ☐ 10. Hot water pipe insulation: 1.5 in. for pipes <=1.5 in. and 2 in. for pipes >1.5 in.
  Chilled water/refrigerant/brine pipe insulation: 1.5 in. for pipes <=1.5 in. and 1.5 in. for pipes >1.5 in.
  Steam pipe insulation: 1.5 in. for pipes <=1.5 in. and 3 in. for pipes >1.5 in.
  Exception(s):
  - ☐ Piping within HVAC equipment.
  - ☐ Fluid temperatures between 55 and 105°F.
  - ☐ Fluid not heated or cooled with renewable energy.
  - ☐ Piping within room fan-coil (with AHRI440 rating) and unit ventilators (with AHRI840 rating).
  - ☐ Runouts <4 ft in length.
- ☐ 11. Operation and maintenance manual provided to building owner
- ☐ 12. Thermostatic controls have 5°F deadband
  Exception(s):
  - ☐ Thermostats requiring manual changeover between heating and cooling
  - ☐ Special occupancy or special applications where wide temperature ranges are not acceptable and are approved by the authority having jurisdiction.
- ☐ 13. Balancing devices provided in accordance with IMC 603.17
- ☐ 14. Demand control ventilation (DCV) present for high design occupancy areas (>40 person/1000 ft2 in spaces >500 ft2) and served by systems with any one of 1) an air-side economizer, 2) automatic modulating control of the outdoor air damper, or 3) a design outdoor airflow greater than 3000 cfm.
  Exception(s):
  - ☐ Systems with heat recovery.
  - ☐ Multiple-zone systems without DDC of individual zones communicating with a central control panel.
  - ☐ Systems with a design outdoor airflow less than 1200 cfm.
  - ☐ Spaces where the supply airflow rate minus any makeup or outgoing transfer air requirement is less than 1200 cfm.

- ☐ 15. Motorized, automatic shutoff dampers required on exhaust and outdoor air supply openings
  Exception(s):
  - ☐ Gravity dampers acceptable in buildings <3 stories
- ☐ 16. Automatic controls for freeze protection systems present
- ☐ 17. Exhaust air heat recovery included for systems 5,000 cfm or greater with more than 70% outside air fraction or specifically exempted
  Exception(s):
  - ☐ Hazardous exhaust systems, commercial kitchen and clothes dryer exhaust systems that the International Mechanical Code prohibits the use of energy recovery systems.
  - ☐ Systems serving spaces that are heated and not cooled to less than 60°F.
  - ☐ Where more than 60 percent of the outdoor heating energy is provided from site-recovered or site solar energy.
  - ☐ Heating systems in climates with less than 3600 HDD.
  - ☐ Cooling systems in climates with a 1 percent cooling design wet-bulb temperature less than 64°F.
  - ☐ Systems requiring dehumidification that employ energy recovery in series with the cooling coil.
  - ☐ Laboratory fume hood exhaust systems that have either a variable air volume system capable of reducing exhaust and makeup air volume to 50 percent or less of design values or, a separate make up air supply meeting the following makeup air requirements: a) at least 75 percent of exhaust flow rate, b) heated to no more than 2°F below room setpoint temperature, c) cooled to no lower than 3°F above room setpoint temperature, d) no humidification added, e) no simultaneous heating and cooling.

Section 5: Compliance Statement

Compliance Statement: The proposed mechanical design represented in this document is consistent with the building plans, specifications and other calculations submitted with this permit application. The proposed mechanical systems have been designed to meet the 2009 IECC requirements in COM*check* Version 4.1.5.5 and to comply with the mandatory requirements in the Requirements Checklist.

WES J. COLGAN, PE	[signature]	12/12/24
Name - Title	Signature	Date

Section 6: Post Construction Compliance Statement

- ☐ HVAC record drawings of the actual installation, system capacities, calibration information, and performance data for each equipment provided to the owner.
- ☐ HVAC O&M documents for all mechanical equipment and system provided to the owner by the mechanical contractor.
- ☐ Written HVAC balancing and operations report provided to the owner.

The above post construction requirements have been completed.

Principal Mechanical Designer-Name ______ Signature ______ Date ______

ENERGY CODE COMPLIANCE NOTES

A. HEATING/COOLING LOAD CALCULATIONS AND EQUIPMENT SIZING ARE BASED ON ASHRAE/ACCA 183 DESIGN CRITERIA AND METHODOLOGY. DESIGN HEATING AND COOLING LOADS OR THE BUILDING HAVE BEEN CALCULATED USING TRANE TRACE 700 USING PROCEDURES RECOMMENDED BY ASHRAE STANDARDS.

B. ALL EQUIPMENT AND SYSTEMS HAVE BEEN SIZED TO BE NO GREATER THAN NEEDED TO MEET CALCULATED LOADS.

C. EACH HEATING OR COOLING SYSTEM ZONE HAS BEEN PROVIDED WITH ITS OWN TEMPERATURE CONTROL DEVICE.

D. ALL TEMPERATURE SENSORS SHALL BE CAPABLE OF SETTING BACK TEMPERATURE TO 55 DEGREES F DURING HEATING AND SETTING UP TO 85 DEGREES F DURING COOLING, CAPABLE OF AUTOMATICALLY SETTING BACK OR SHUTTING DOWN SYSTEMS DURING UNOCCUPIED HOURS USING 7-DIFFERENT DAY SCHEDULES, HAVE A ACCESSIBLE MANUAL 2-HOUR OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS, HAVE A BATTERY BACK-UP CAPABLE OF MAINTAINING PROGRAMMED SETTINGS FOR AT LEAST 10 HOURS WITHOUT POWER. A SETBACK OR SHUTOFF CONTROL IS NOT REQUIRED ON THERMOSTATS THAT CONTROL SYSTEMS SERVING AREAS THAT OPERATE CONTINUOUSLY SUCH AS THE ELEVATOR EQUIPMENT ROOM AND ELECTRICAL ROOMS IF APPLICABLE.

E. OUTSIDE VENTILATION HAS BEEN DESIGNED PER ASHRAE STANDARD 62.1-2004 TABLE 6-1, DEFAULT VALUES CHAPTER 4 OF THE 2012 INTERNATIONAL MECHANICAL CODE.

F. ALL SUPPLY AND RETURN AIR DUCTS MUST BE INSULATED WITH A MINIMUM INSTALLED VALUE OF R-6.0. ALL DUCTS LOCATED OUTSIDE THE BUILDING MUST BE INSULATED WITH A MINIMUM INSTALLED VALUVE OF R-8.0.

G. ALL JOINTS, LONGITUDINAL AND TRANSVERSE SEAMS, AND CONNECTIONS IN DUCTWORK MUST BE SECURELY SEALED USING WELDMENTS, MECHANICAL FASTENERS WITH SEALS, GASKETS, OR MASTICS, MESH AND MASTIC SEALING SYSTEMS, OR TAPES. TAPES AND MASTICS MUST BE LISTED AND LABELED IN ACCORDANCE WITH UL 181A OR UL 181B.

H. MECHANICAL FASTENERS AND SEALS, MASTICS, OR GASKETS MUST BE USED WHEN CONNECTING DUCTS TO FANS AND OTHER AIR DISTRIBUTION EQUIPMENT, INCLUDING MULTIPLE-ZONE TERMINAL UNITS.

I. OPERATOR AND MAINTENANCE DOCUMENTATION MUST BE PROVIDED TO THE OWNER THAT INCLUDES EQUIPMENT INPUT AND OUTPUT CAPACITY AND REQUIRED MAINTENANCE ACTIONS, EQUIPMENT OPERATION AND MAINTENANCE MANUALS, HVAC SYSTEM CONTROL MAINTENANCE AND CALIBRATION INFORMATION, INCLUDING WIRING DIAGRAMS, SCHEMATICS, AND CONTROL SEQUENCE DESCRIPTIONS. DESIRED OR FIELD DETERMINED SET POINTS MUST BE PERMANENTLY RECORDED ON THE CONTROL DRAWINGS, AT CONTROL DEVICES, OR, FOR DIGITAL CONTROL SYSTEMS, IN PROGRAMMING COMMENTS. A COMPLETE NARRATIVE OF HOW EACH SYSTEM IS INTENDED TO OPERATE.

J. EACH SUPPLY AIR OUTLET OR DIFFUSER MUST HAVE ITS OWN BALANCING DEVICE. ACCEPTABLE BALANCING DEVICES INCLUDE A) ADJUSTABLE DAMPERS LOCATED WITHIN THE DUCTWORK AND B) SUPPLY AIR DIFFUSERS WITH OPPOSED BLADE DAMPERS AT THE DEVICE.

APPROVAL STAMP:

HAMILTON DEVELOPMENT
ONE MUSIC SQUARE SOUTH, SUITE 110
NASHVILLE, TN 37203

SMDC ARCHITECTS
SM DESIGN & CONSULTING, PC
855 Bloomfield Avenue, Suite 220
Glen Ridge, NJ 07028
Telephone 973-259-9500
www.smdcpc.com

CONSULTANT

SHIRK & O'DONOVAN CONSULTING ENGINEERS
STRUCTURAL CONSULTANTS
SHIRK & O'DONOVAN
CONSULTING ENGINEERS, INC
370 EAST WILSON BRIDGE ROAD
WORTHINGTON, OH 43085
PH: 614.436.6465

MEP CONSULTANTS
KRAEMER CONSULTING ENG PLLC
2050 W. WHISPERING WIND DR, STE 158
PHOENIX, AZ 85085
PH: 602.285.1669

harrington group SINCE 1986 Atlanta, GA • Charlotte, NC
FIRE PROTECTION CONSULTANTS
HARRINGTON GROUP, INC
3237 SATELLITE BOULEVARD, SUITE 525
DULUTH, GA 30096
PH: 770.564.3505

HARGIS
TELECOMMUNICATIONS CONSULTANTS
HARGIS ENGINEERS, INC
1201 THIRD AVENUE, SUITE 600
SEATTLE, WA 98101
PH: 206.448.3376

IN COORDINATION WITH DEVELOPER'S CONSULTANT WORKING IN PARALLEL:

Pickering
Pickering Firm, Inc.
Pickering Firm, Inc.
Engineering
Planning · Surveying
SITE CIVIL
PICKERING FIRM, INC.
1700 KIRK RD, SUITE 120
LITTLE ROCK, AR 72223
PH: 501.246.3578

SEAL

STATE OF ARKANSAS ★★★ LICENSED PROFESSIONAL ENGINEER ★★★ No. 18885 MICHAEL J. KRAEMER
03.26.25
KCE JOB #24-240

END USER

amazon

PROJECT DESCRIPTION

AMAZON LIT3
2026 IXD GEN5M
CROSS-DOCK WAREHOUSE FACILITY
(RECEIPT & REDISTRIBUTION)

PROJECT LOCATION

Port of Little Rock
PORT OF LITTLE ROCK
(INDUSTRIAL PARK)
LITTLE ROCK, ARKANSAS 72206
(UNINCORPORATED PARCELS) PULASKI COUNTY

SHEET TITLE

HVAC VENTILATION/
ENERGY CALCULATIONS

SHEET MANAGEMENT

PROJECT NO.:	
DATE ISSUED:	
DRAWN BY:	VARIOUS
REVIEWED BY:	MK

ISSUANCE / REVISION SCHEDULE

#	DATE	DESCRIPTION
	02/20/ 2025	REVIEW SET: CD 85%
	03/20/ 2025	100% CD - FOR PERMIT

SHEET NUMBER

M-305

Submittal Type — Working Documents