Date 8/30/2010

**PERFORMANCE AND MECHANICAL SPECIFICATIONS**

**EVAPCO® COOLING TOWERS**

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| **PROJECT** | Mt. Pleasant Library | | |
| **CUSTOMER** | W.L. Gary Co., Inc. | | |
| **ENGINEER** | Allen & Shariff | | |
| **UNIT:** | (1) LPT-526I Cooling Tower | | |
| **CUSTOMER P.O.** | 13760-TM | **EVAPCO SERIAL NO.** | 10-393475 |
| **CAPACITY** | 210 GPM | 95 °F IN / 85 °F OUT | 78 °F E.W.B. |
| **FAN MOTOR:** | (1) 7.5 (Inverter Duty) HP | **ELEC. SPEC.** | 208/3/60 |
| **INLET PRESSURE:** | 1.9 PSIG | **DRIVES SIZED FOR 0" ESP.** | |

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| **UNIT TYPE** | Factory-assembled, counterflow blow-through. |
| **PAN FAN SECTION** | Cold water basin constructed of Type 304 Stainless steel. All galvanized steel is coated with a minimum of 2.35 ounces of zinc per square foot of area (G-235 designation). Pan-Fan section includes centrifugal fans and drives mounted and aligned at the factory. All fan components are located in the dry entering air stream. During fabrication, all panel edges are coated with a 95% pure zinc-rich compound. |
| **PAN STRAINER*** | All type 304 stainless steel with large area removable perforated screens. |
| **FAN DISCHARGE COWLS** | G-235 hot-dip galvanized steel cowls provided on each fan discharge extending within the pan to increase fan efficiency and prevent water from entering fans. |
| **ACCESS** | One (1) G-235 hot-dip galvanized steel circular access door held in place by wingnuts. |
| **FAN WHEELS** | Fan is forwardly curved centrifugal type of hot-dip galvanized steel factory installed into the pan/fan section. They are statically and dynamically balanced for vibration free operation. Fan housings have compound curve inlet rings for efficient air entry. |
| **FAN SHAFT BEARINGS** | Solid shaft of ground and polished steel. Exposed surface coated with rust preventative. Fan shaft is supported by heavy-duty, self-aligning bearings with cast iron housings and lubrication fittings for maintenance. |
| **FAN MOTOR** | Totally enclosed ball bearing type with 1.15 service factor suitable for outdoor service. Mounted on an adjustable motor base. |
| **FAN DRIVE** | V-belt type with taper lock sheaves. Selected for 150% motor nameplate horsepower. |

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| **FAN END INLET SCREEN** | **Hot-dip galvanized steel screens, 1" wire mesh.** |
| **FILL** | **Polyvinyl chloride (PVC) of cross-fluted design. PVC sheets are bonded together for strength and durability. Fill is self-extinguishing for fire resistance, has a flame spread of 5 under A.S.T.M. designation E-84-81a, and is resistant to rot, decay and biological attack.** |
| **WATER DISTRIBUTION SYSTEM** | **Precision molded ABS spray nozzles with large 1" x 3/8" orifice and internal sludge ring to eliminate clogging. Spray header and branches are Schedule-40 Polyvinyl Chloride for corrosion resistance with steel connection to attach external piping. Spray header branches are removable and are equipped with threaded end caps.** |
| **FAN SIDE INLET SCREEN** | **Hot dip galvanized screens on side of attenuator. (If side attenuation is not being provided, blank-off plates will be used.)** |
| **HEAT TRANSFER CASING CONSTRUCTION** | **G-235 hot-dip galvanized steel panel construction, separable from pan section.** |
| **ELIMINATORS** | **Constructed entirely of inert Polyvinyl Chloride (PVC) in light, easily handled sections. The eliminators shall incorporate three changes in air direction to assure removal of entrained moisture from the discharge air stream.** |
| **ELECTRONIC WATER LEVEL CONTROL PACKAGE** | **Electronic water level control package with three (3) stainless steel water level sensors ((1) one high level, one (1) low level and one (1) ground) with a NEMA 4X enclosure mounted in a cleanable Schedule 40 PVC external standpipe with slow closing solenoid Valve(s) and "y" strainer(s).** |
| **AIR INLET SOUND ATTENUATION** | **Air inlet sound attenuation. Interior walls and baffles acoustically lined with high density fiberglass. Air inlet sound attenuators are supported from the tower and require no external supporting structure. During fabrication, all galvanized steel panel edges are coated with a 95% pure zinc-rich compound.** |
| **EVAPCO Pulse~ Pure® NON-CHEMICAL WATER TREATMENT SYSTEM** | **Pulse~Pure Model P-3.** |
| **WATER TREATMENT PERFORMANCE** | **The Pulse~Pure® system is designed to provide biological, scaling, and corrosion control.** |
| **ELECTRICAL PULSE PANEL** | **Electrical pulse panel generates pulsed signals for the purification chamber. The electronics are housed in a NEMA 4 rated enclosure with a baked powder coat enamel finish. Panel has surface mounted status indicators and one female waterproof connection for the purification chamber cable. Panel is UL and cUL approved. Consult Pulse~Pure IO&M for location and mounting details. (120V)** |
| **PATENTED PURIFICATION CHAMBER** | **EVAPCO's Patented Purification Chamber (U.S. Patent No. D545,395 S) is standard with flashing blue indicator lights to provide verification that the Pulse~Pure system is operational and delivering the required pulsed electric field for water treatment. Each purification chamber is water tight and provided with an electromagnetically shielded cable hard wired to the electrical pulse panel with a waterproof male connection. Consult Pulse~Pure IO&M for location and mounting details.** |

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| **EVAPCO CONDUCTIVITY CONTROLLER** | **Microprocessor based conductivity controller in a NEMA 4X enclosure with USB port for retrieving 60 days of operational data (bleed frequency, output contact and water metering capability), high conductivity alarm, toroidal sensor technology. Operates on 120V. Includes PVC probe and sample port. This Conductivity Controller is external from pulse panel and is shipped loose for field installation, consult drawing #P27AU0000 for mounting arrangement.** |
| **BLOW DOWN VALVE** | **Belimo, two-way control valve, normally closed nickel-plated, forged brass with stainless steel ball and stem with actuator, Weather Shield, and throttling valve. Valves are shipped loose for field installation, consult drawing #P27AU0000 for mounting arrangement, consult Pulse~Pure Engineering Data Sheet(s) for valve size. Refer to submittal wiring diagram for connection of Belimo valve, conductivity sensor, power wiring and flow switch as applicable.** |
| **ELECTRICAL PULSE PANEL WIRING REQUIREMENTS** | **Power supply to electrical pulse panel shall be from a dedicated circuit, field wired by others. Pulse panel operation shall be interlocked with unit pump. Consult wiring diagrams provided in the submittal, Pulse Panel and Pulse~Pure IO&M.** |

***OMITTED ON UNITS FOR REMOTE SUMP OPERATION**

**SPECIAL REMARKS:**

- **Unit(s) to be supplied with Inverter Duty fan motor(s).**
- **3-Probe Electronic Water Level Control Package.**
- **Safety Cage(s) provided for ladder(s).**
- **(1) 5 KW Stainless Steel Pan Heater(s), 208/3/60, with thermostat and low water cutoff(s).**
- **Unit provided with Vibration Cutout Switch(es), mounted (wiring and sensitivity adjustment by others).**
- **Unit(s) provided with ladder(s).**
- **Air Inlet sound attenuation (see attenuation drawing for additional weight).**
- **Cable length will be 15'.**
- **IBC Compliant up to 1g.**

# Evapco, Inc.
# Sound Data

Sound Pressure Levels (SPL) in dB RE 0.0002 Microbar

MODEL: LPT 526I
MOTOR: 7.5 Hp (5.5 kW)
# MOTORS: 1
SPEED: Full Speed

**Sound Reduction Options**
Fan Side and End Inlet Attenuation

| | SOUND PRESSURE LEVEL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fan End | | Side | | Opp. End | | Opp. Side | | Top | |
| BAND | 5 ft (1.5 m) | 50 ft (15 m) | 5 ft (1.5 m) | 50 ft (15 m) | 5 ft (1.5 m) | 50 ft (15 m) | 5 ft (1.5 m) | 50 ft (15 m) | 5 ft (1.5 m) | 50 ft (15 m) |
| 63 HZ | 60 | 50 | 62 | 53 | 62 | 54 | 62 | 53 | 63 | 49 |
| 125 HZ | 54 | 49 | 57 | 46 | 61 | 54 | 57 | 46 | 64 | 51 |
| 250 HZ | 48 | 41 | 53 | 39 | 54 | 46 | 53 | 39 | 61 | 49 |
| 500 HZ | 50 | 34 | 50 | 38 | 53 | 38 | 50 | 38 | 59 | 46 |
| 1 kHZ | 46 | 35 | 47 | 31 | 48 | 31 | 47 | 31 | 51 | 42 |
| 2 kHZ | 44 | 31 | 39 | 24 | 45 | 27 | 39 | 24 | 51 | 42 |
| 4 kHZ | 44 | 31 | 29 | 21 | 39 | 24 | 29 | 21 | 48 | 44 |
| 8 kHZ | 47 | 32 | 39 | 29 | 38 | 27 | 39 | 29 | 50 | 43 |
| dBA | 53 | 41 | 52 | 39 | 54 | 42 | 52 | 39 | 60 | 50 |

REMARKS: 1. Sound levels are recorded with free-field conditions over a reflecting plane.
2. Sound levels can increase with variable frequency drives depending on the drive manufacturer and the drive configuration.

# Evapco, Inc.
# Sound Data

Sound Pressure Levels (SPL) in dB RE 0.0002 Microbar

MODEL: LPT 526I
MOTOR: 7.5 Hp (5.5 kW)
# MOTORS: 1
SPEED: 1/2 Speed

**Sound Reduction Options**
Fan Side and End Inlet Attenuation

| | SOUND PRESSURE LEVEL | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Fan End | | Side | | Opp. End | | Opp. Side | | Top | |
| BAND | 5 ft (1.5 m) | 50 ft (15 m) | 5 ft (1.5 m) | 50 ft (15 m) | 5 ft (1.5 m) | 50 ft (15 m) | 5 ft (1.5 m) | 50 ft (15 m) | 5 ft (1.5 m) | 50 ft (15 m) |
| 63 HZ | 46 | 37 | 49 | 40 | 49 | 41 | 49 | 40 | 50 | 35 |
| 125 HZ | 41 | 36 | 44 | 33 | 47 | 40 | 44 | 33 | 51 | 37 |
| 250 HZ | 35 | 27 | 39 | 26 | 40 | 33 | 39 | 26 | 48 | 35 |
| 500 HZ | 36 | 20 | 37 | 24 | 40 | 25 | 37 | 24 | 46 | 33 |
| 1 kHZ | 32 | 22 | 34 | 18 | 35 | 17 | 34 | 18 | 38 | 29 |
| 2 kHZ | 31 | 17 | 26 | 11 | 32 | 13 | 26 | 11 | 37 | 28 |
| 4 kHZ | 31 | 18 | 16 | 8 | 25 | 11 | 16 | 8 | 35 | 31 |
| 8 kHZ | 33 | 18 | 25 | 16 | 25 | 14 | 25 | 16 | 37 | 29 |
| dBA | 40 | 28 | 39 | 26 | 41 | 29 | 39 | 26 | 47 | 37 |

REMARKS: 1. Sound levels are recorded with free-field conditions over a reflecting plane.
2. Sound levels can increase with variable frequency drives depending on the drive manufacturer and the drive configuration.

musical instrument on public streets, alleys, or thoroughfares in the District of Columbia. Public assembly activities provided for in 20 DCMR §2800.3 and non-commercial public speaking are exempt from the limitations set forth in this section. .

**AUTHORITY: Unless otherwise noted, the authority for this chapter is an Act approved January 26, 1887. 24 Slat 368, ch. 49, as amended; D.C. Code §1-315 (1992 (Repl. Vol.): the §§422(6) and 422(11) of the District of Columbia SsN-0ovemment and Governmental Reorganization Act; the District of Columbia Noise Control Act of 1977. D.C. Law 2-53, as amended; Mayor's Order 79-28 dated February 5. 1979.**

**SOURCE: Section 5 of the District of Columbia Noise Control Act of 1977, D.C. Law 2-53, 24 OCR 5293, 5308 (December 30, 1977); as amended by §4 of the D.C. Noise Control Act of 1977 Amendment Act of 1986. D.C. Law 8-180, 33 DCR 7660, 7861 (December 21, 1986); and by §2 of the Noise Control Amendment Act of 1996, D.C. Low 11-161 (43 OCR 3727, 3729 (July 19, 1996).**

**EDITOR'S NOTE: Chapter 31 Maximum Noise Levels was renumbered Chapter 26.**

## 2801 MECHANICAL EQUIPMENT

2801.1 Noise resulting from mechanical equipment shall not exceed the maximum noise levels contained in this section.

2801.2 Noise resulting from the use or operation of any air-conditioning, refrigerator, heat pump, fan. swimming pool equipment, or other mechanical equipment, regardless of location, shall be prohibited in excess of sixty (60) dB(A) when measured at the property line or as close to the property line as practical if there is an obstruction.

SOURCE: Section 5 of the District of Columbia Nose Control Act of 1977, D.C. Law 2-53. 24 DCR 5293, 5309 (December 30, 1977).

## 2802 CONSTRUCTION

2802.1 From 7:00 a.m. to 7:00 p.m. on any weekday, noise levels resulting from construction or demolition (excluding pile driver devices) shall not exceed a L,(1) of eighty (80) dB(A) unless granted a variance under §2705 of Chapter 27 of this subtitle.

2802.2 From 7:00 p.m. to 7:00 a.m. the maximum noise levels prescribed in §2701 of Chapter 27 of this title shall apply.

2802.3 In cases involving noise from construction or demolition, measurements shall be made twenty-five feet (25 ft.) from the outermost limits of the construction site.

2802.4 No permit for building construction or demolition shall be issued until the permit applicant has assured in writing that the noise emanating from the planned construction will comply with the limitations established by this section.

**SOURCE: Section 5 of the District of Columbia Nose Control Act of 1977, D.C. Law 2-53, 24 DCR 5293, 5308 (December 30. 1977).**