



## SECTION 10811

### ELECTRIC HAND DRYERS

#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Compact warm air electric hand dryers.
- B. Compact regulated warm air electric hand dryers with recessed installation.
- C. Compact warm air contemporary design, compact, warm air, electric, sensor operated hand dryers.
- D. Compact warm air electric sensor-operated hand dryers with acrylonitrile-butadiene-styrene (ABS) plastic cover.
- E. Compact warm air electric sensor-operated hand dryers with aluminum cover.
- F. Compact warm air electric sensor-operated hand dryers.

##### 1.2 RELATED SECTIONS

- A. Section 06100 - Rough Carpentry: Blocking in stud partitions for mounting hand dryers.
- B. Section 16100 - Wiring Methods: Electrical supply, conduit, wiring, boxes, and wiring devices for hand dryers.

##### 1.3 REFERENCES

- A. Underwriter's Laboratory (UL): Labelled products.

##### 1.4 SUBMITTALS

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
- C. Shop Drawings:

- D. Manufacturer's installation and maintenance instructions.
- E. Copy of warranty form for review by Architect.
- F. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- G. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

#### 1.5 QUALITY ASSURANCE

- A. Product Requirements:
  - 1. Hand dryers shall be certified by Underwriters Laboratory (UL), Inc. and shall bear UL labels.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
  - 1. Finish areas designated by Architect.
  - 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
  - 3. Refinish mock-up area as required to produce acceptable work.

#### 1.6 DELIVERY, STORAGE, AND HANDLING

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

#### 1.7 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

#### 1.8 WARRANTY

- A. Manufacturer's Warranty: 5 year limited warranty for electric hand dryers to cover defects in material and workmanship.
- B. Manufacturer's Warranty: 10 year limited warranty for electric hand dryers to cover defects in material and workmanship.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

## 2.2 ELECTRIC HAND DRYER

- A. Type: Warm air, wall mounted, durable, compact, electric hand dryer with anti-vandalism features and low energy consumption, as manufactured by Mediclinics, S.A. and distributed by its subsidiary Saniflow Corporation:
1. Saniflow Hand Dryer Model No. E88.
  2. Saniflow Hand Dryer Model No. E88C.
  3. Saniflow Hand Dryer Model No. E88CS.
  4. Saniflow Hand Dryer Model No. E88O.
  5. Saniflow Hand Dryer Model No. E88A.
  6. Saniflow Hand Dryer Model No. E88AC.
  7. Saniflow Hand Dryer Model No. E88AO.
  8. Saniflow Hand Dryer Model No. E85.
  9. Saniflow Hand Dryer Model No. E85A.
- B. Performance Requirements:
1. Operation: Push button starts dryer which operates for 34 seconds.
  2. Operation: Infrared sensor turns dryer on when hands are held under air outlet. Dryer automatically turns off 2 seconds after hands are removed from air flow.
  3. Airflow: 203 cubic feet per minute (5.75 cubic meters per minute).
  4. Air Velocity: 5,512 linear feet per minute (1,680 linear meters per minute).
  5. Air Temperature at 4 inches (102 mm) below outlet at 70 degrees F (21 degrees C) ambient temperature: 128 degrees F (53 degrees C).
  6. Average Drying Time: 29 seconds.
  7. Sound Pressure Level (SPL): 70 decibels maximum.
- C. Construction:
1. Cover: One-piece cover fabricated from 1/4 inch (6 mm) thick cast iron with white porcelain enamel finish.
    - a. Cover to be field attached to base with vandal proof screws and locked with special key wrench.
    - b. Provide cover with rotating die cast air nozzle to focus air stream.
    - c. Nominal size: 11 inches wide by 9-3/4 inches high by 8-1/4 inches deep (278 mm wide by 248 mm high by 210 mm deep).
    - d. Weight: 23.4 pounds (11.5 kg).
  2. Cover: One-piece cover fabricated from 1/16 inch (2 mm) thick sheet steel.
    - a. Finish: Bright chrome plated finish.
    - b. Finish: Satin chrome plated finish.
    - c. Finish: 24K gold plated] finish.
    - d. Cover to be field attached to base with vandal proof screws and locked with special key wrench.
    - e. Provide cover with rotating die cast air nozzle to focus air stream.
    - f. Nominal size: 11-1/8 inches wide by 10 inches high by 8-1/2 inches deep (282 mm wide by 255 mm high by 215 mm deep).
    - g. Weight: 14.3 pounds (6.5 kg).
  3. Base: Die cast aluminum base with factory attached dryer components. Provide with fasteners for attachment to wall.
  4. Motor: 1/3 HP, 5,500 RPM, universal brush type.
  5. Fan: Double inlet, centrifugal, aluminum fan.
  6. Heating Element: 1,600 watt with Ni-Crom 40 wire.
  7. Power Requirements: 110/120 volts, 50/60 Hz, 16 amps.

## 2.3 ELECTRIC HAND DRYER

- A. Type: Warm air, wall mounted, durable, compact, sensor operated, electric hand dryer with anti-vandalism features.

1. Provide automatic temperature selector to regulate hand drying air temperature according to room ambient temperature, as manufactured by Mediclinics, S.A. and distributed by its subsidiary Saniflow Corporation.
  2. Saniflow Hand Dryer Model No. MO3A.
  3. Saniflow Hand Dryer Model No. MO3AC.
  4. Saniflow Hand Dryer Model No. MO3ACS.
  5. Saniflow Hand Dryer Model No. MO2A.
  6. Saniflow Hand Dryer Model No. MO2AC.
  7. Saniflow Hand Dryer Model No. MO2ACS.
- B. Performance Requirements:
1. Operation: Infrared sensor turns dryer on when hands are held under air outlet. Dryer automatically turns off 2 seconds after hands are removed from air flow.
  2. Airflow: 265 cubic feet per minute (7.5 cubic meters per minute).
  3. Air Velocity: 5198 linear feet per minute (1584 linear meters per minute).
  4. Air Temperature at 4 inches (102 mm) below outlet at 70 degrees F (21 degrees C) ambient temperature: 120 degrees F (49 degrees C).
  5. Temperature selector shall automatically increase or decrease air flow temperature according to room ambient temperature.
  6. Average Drying Time: 29 seconds.
  7. Sound Pressure Level (SPL): 65 decibels maximum.
- C. Construction:
1. Cover: One-piece cover fabricated from 1/16 inch (2 mm) thick sheet steel.
    - a. Finish: Stainless steel sheet complying with AISI 304 with brushed satin finish.
    - b. Finish: stainless steel sheet complying with AISI 304 with bright reflective polished finish.
    - c. Finish: Steel sheet with white epoxy paint finish.
    - d. Cover to be field attached to base with vandal proof screws and locked with special key wrench.
    - e. Locate air outlet, intake, and operating sensor in bottom of cover.
    - f. Nominal Size: 10-3/8 inches wide by 12-7/8 inches high by 6-1/2 inches deep (272 mm wide by 325 mm high by 164 mm deep).
    - g. Nominal Size: 10-3/8 inches wide by 12-5/8 inches high by 6-1/2 inches deep (272 mm wide by 320 mm high by 164 mm deep).
    - h. Weight: 9.37 pounds (4.25 kg).
    - i. Weight: 10.7 pounds (4.85 kg).
  2. Base: Rigid, opaque, high temperature resistant, UL listed, polyphenylene oxide (PPO) plastic base with factory attached dryer components. Provide with fasteners for attachment to wall.
  3. Motor: 1/3 HP, 4500 RPM, universal brush type.
  4. Fan: Double inlet, centrifugal, aluminum fan.
  5. Heating Element: 2,000 watt with Cr-Al-Fe tape.
  6. Power Requirements: 110/120 volts, 50/60 Hz, 19 amps.
  7. Recess Mounting: Recessed box and cover with opening for dryer and intake air grille to allow dryer to be recessed mounted in wall.
    - a. Material: Stainless steel sheet complying with AISI 304 with brushed satin finish.
    - b. Material: Stainless steel sheet complying with AISI 304 with bright reflective polished finish.
    - c. Box Size: 11-5/8 inches wide by 18-7/8 inches high by 3 inches deep (296 mm wide by 426 mm high by 76 mm deep).
    - d. Overall Cover Dimensions: 13-3/8 inches wide by 18-7/8 inches high (340 mm wide by 481 mm high).

## 2.4 ELECTRIC HAND DRYER

- A. Warm air, wall mounted, contemporary design, durable, compact, electric, sensor operated hand dryer as manufactured by Mediclinics, S.A. and distributed by its subsidiary Saniflow Corporation.;
1. Optima Hand Dryer Model No. M99.
  2. Optima Hand Dryer Model No. M99C.
  3. Optima Hand Dryer Model No. M99CS.
- B. Performance Requirements:
1. Operation: Infrared sensor turns dryer on when hands are held under air outlet. Dryer automatically turns off 2 seconds after hands are removed from air flow.
  2. Airflow: 166 cubic feet per minute (4.69 cubic meters per minute).
  3. Air Velocity: 4181 linear feet per minute (1274 linear meters per minute).
  4. Air Temperature at 4 inches (102 mm) below outlet at 70 degrees F (21 degrees C) ambient temperature: 125 degrees F (52 degrees C).
  5. Average Drying Time: 38 seconds.
  6. Sound Pressure Level (SPL): 60 decibels maximum.
- C. Construction:
1. Cover: One-piece cover fabricated from 1/16 inch (2 mm) thick:
    - a. Finish: Stainless steel sheet complying with AISI 304 with brushed satin finish.
    - b. Finish: Stainless steel sheet complying with AISI 304 with bright reflective polished finish.
    - c. Finish: Steel sheet complying with ASTM A659 with white epoxy paint finish.
    - d. Cover to be field attached to base with vandal proof screws and locked with special key wrench.
    - e. Locate air outlet, intake, and operating sensor in bottom of cover.
    - f. Nominal size: 10 inches wide by 11-7/8 inches high by 5-1/2 inches deep (225 mm wide by 302 mm high by 140 mm deep).
    - g. Weight: 9.4 pounds (4.3 kg).
    - h. Weight: 9.8 pounds (4.5 kg).
  2. Base: UL listed, rigid, opaque, high temperature resistant acrylonitrile-butadiene-styrene (ABS) plastic base with factory attached dryer components. Provide with fasteners for attachment to wall.
  3. Motor: 1/5 HP, 3300 RPM, shaded pole type.
  4. Fan: Simple inlet, centrifugal fan fabricated from UL listed polypropylene (PP) plastic.
  5. Heating Element: 1,600 watt with Ni-Crom 40 wire.
  6. Power Requirements: 110/120 volts, 50/60 Hz, 13.6 amps.

## 2.5 ELECTRIC HAND DRYER

- A. Type: Warm air, wall mounted, durable, compact, electric, hand dryer as manufactured by Mediclinics, S.A. and distributed by its subsidiary Saniflow Corporation;
1. Saniflow Junior Hand Dryer Model No. M88A.
  2. Saniflow Junior Hand Dryer Model No. M88.
- B. Performance Requirements:
1. Operation: Push button starts dryer which operates for 45 seconds.
  2. Operation: Infrared sensor turns dryer on when hands are held under air outlet. Dryer automatically turns off 2 seconds after hands are removed from air flow.

3. Airflow: 111 cubic feet per minute (3.14 cubic meters per minute).
4. Air Velocity: 3872 linear feet per minute (1180 linear meters per minute).
5. Air Temperature at 4 inches (102 mm) below outlet at 70 degrees F (21 degrees C) ambient temperature: 124 degrees F (51 degrees C).
6. Average Drying Time: 45 seconds.
7. Sound Pressure Level (SPL): 60 decibels maximum.

C. Construction:

1. Cover: One-piece cover fabricated from 1/8 inch (3 mm) thick, UL listed, rigid, opaque, high temperature resistant, white acrylonitrile-butadiene-styrene (ABS) plastic.
  - a. Cover to be field attached to base with vandal proof screws and locked with special key wrench.
  - b. Locate air outlet, operating sensor, and intake in bottom of cover.
  - c. Locate air outlet and intake in bottom of cover. Locate square push button on front face of cover.
  - d. Nominal size: 11-1/8 inches wide by 10 inches high by 8-1/2 inches deep (282 mm wide by 255 mm high by 215 mm deep).
  - e. Weight: 14.3 pounds (6.5 kg).
2. Base: UL listed, high temperature resistant acrylonitrile-butadiene-styrene (ABS) plastic base with factory attached dryer components. Provide with fasteners for attachment to wall.
3. Motor: 1/7 HP, 3300 RPM, shaded pole type.
4. Fan: Simple inlet, centrifugal fan fabricated from UL listed polypropylene (PP) plastic.
5. Heating Element: 1,200 watt with Ni-Crom 40 wire.
6. Power Requirements: 110/120 volts, 50/60 Hz, 11 amps.

## 2.6 ELECTRIC HAND DRYER

A. Warm air, wall mounted, durable, compact, electric, sensor operated hand dryer; Senior Hand Dryer Model No. M89A as manufactured by Mediclinics, S.A. and distributed by its subsidiary Saniflow Corporation.

B. Performance Requirements:

1. Operation: Infrared sensor turns dryer on when hands are held under air outlet. Dryer automatically turns off after set time limit.
2. Airflow: 111 cubic feet per minute (3.14 cubic meters per minute).
3. Air Velocity: 3872 linear feet per minute (1180 linear meters per minute).
4. Air Temperature at 4 inches (102 mm) below outlet at 70 degrees F (21 degrees C) ambient temperature: 124 degrees F (51 degrees C).
5. Average Drying Time: 43 seconds.
6. Sound Pressure Level (SPL): 60 decibels maximum.

C. Construction:

1. Cover: One-piece cover fabricated from 1/8 inch (3 mm) thick aluminum sheet with white epoxy paint finish.
  - a. Cover to be field attached to base with vandal proof screws and locked with special key wrench.
  - b. Locate air outlet, operating sensor, and intake in bottom of cover.
  - c. Nominal size: 10 inches wide by 11-3/4 inches high by 5-1/4 inches deep (254 mm wide by 301 mm high by 134 mm deep).
  - d. Weight: 8.2 pounds (3.8 kg).
2. Base: UL listed, rigid, opaque, high temperature resistant acrylonitrile-butadiene-styrene (ABS) plastic base with factory attached dryer components. Provide with fasteners for attachment to wall.
3. Motor: 1/7 HP, 3300 RPM, shaded pole type.

4. Fan: Simple inlet, centrifugal fan fabricated from UL listed polypropylene (PP) plastic.
5. Heating Element: 1,200 watt with Ni-Crom 40 wire.
6. Power Requirements: 110/120 volts, 50/60 Hz, 11 amps.

## 2.7 ELECTRIC HAND DRYER

- A. Surface mounted high speed hand dryer shall incorporate a vandal resistant design that includes a metal cover with 2 vandal-proof locks screws and lock with special speed flow wrench as manufactured by Mediclinics, S.A. and distributed by its subsidiary Saniflow Corporation.;
  1. Speedflow Hand Dryer Model No. M06A.
  2. Speedflow Hand Dryer Model No. M06AC.
  3. Speedflow Hand Dryer Model No. M06ACS.
  4. Speedflow Hand Dryer Model No. M06AF.
  
- B. Performance Requirements:
  1. Operation: The dryer shall start automatically, and operate with no interruption as long as the hands are kept in the detection range of the sensor. The appliance shall stop 2 seconds after the hands are removed from the airflow.
  2. Air Speed: Adjustable 4920 to 9840 lfm (1500 m/minute to 3000 m/minute).
  3. Temperature at 4 inches (102 mm) distance / 70 degrees F (21 degrees C): Adjustable from 106 degrees F to 111 degrees F (41 degrees C to 44 degrees C).
  4. Effective Airflow: 36 to 58 cfm (17000 cu. cm/second to 27400 cu. cm/second).
  5. Free Airflow: Adjustable 43 to 70 cfm (20300 cu. cm/sec to 33000 cu. cm/sec).
  6. Drying Time: 10 to 15 sec
  7. Safety: Automatic disconnection system after 60 seconds of continuous use. Self-resettable thermal cut-off at 302 degrees F (150 degrees C) which disconnect the whole appliance. Protection level against water splashes should be rating IP23.
  8. Unit shall VDE approved and CE marked and comply with electrical safety directives 73/23/CEE and 93/68/CEE and electro-magnetic compatibility directives 89/336/CEE and 92/31/CEE and with ADA projection requirements.
  9. Sound Pressure Level (SPL): Noise level at 79 inches (2000 mm). 64-70 dB dependant on fan speed.
  
- C. Construction:
  1. Cover: One-piece cover fabricated from metal:
    - a. Finish: Stainless steel sheet 1/16 inch (2 mm) thick complying with AISI 304 with brushed satin finish.
    - b. Finish: Stainless steel sheet 1/16 inch (2 mm) thick complying with AISI 304 with bright reflective polished finish.
    - c. Finish: Steel sheet 1/16 inch (2 mm) thick complying with ASTM A659 with white epoxy paint finish.
    - d. Finish: Cast iron one piece cover 3/16 inch (5 mm) thick with white epoxy paint finish.
    - e. Cover to be field attached to base with vandal proof screws and locked with special key wrench.
    - f. Locate air outlet, intake, and operating sensor in bottom of cover.
    - g. Nominal Size: 11-1/2 inches wide by 10-1/2 inches high by 4 inches deep (292 mm wide by 267 mm high by 102 mm deep).
    - h. Nominal Size: 11-5/8 inches wide by 10-5/8 inches high by 4 inches

- deep (298 mm wide by 273 mm high by 102 mm deep).
    - i. Weight: 7.9 pounds (3.6 kg).
    - j. Weight: 15.2 pounds (6.9 kg).
  - 2. Base: Aluminum base, with 4 holes 5/16 inch (8 mm) for wall mounting. Base includes silent-blocks to damp mechanical vibrations.
  - 3. Motor: 1/3 HP high speed motor. Universal brush motor, A class.
  - 4. R.P.M.: 4.200 to 8.200. RPM may be adjusted manually by means of a potentiometer.
  - 5. Voltage: 100-120 V.
  - 6. Voltage: 208 V.
  - 7. Voltage: 220-240 V.
  - 8. Frequency: 50/60 Hz.
  - 9. Power Consumption: 17.9 A (120 V).
  - 10. Heating Element: 1150 watts.
  - 11. Insulation: Grounding required.
  - 12. Fully adjustable 2 inches to 8 inches (51 mm to 203 mm) infrared electronic detection sensor by means of a potentiometer. Sensors shall have a polycarbonate viewing window.
  - 13. Fire resistant plastic UL 94-V0 fan scroll. Aluminum centrifugal double asymmetrical inlet fan wheel.

## PART 3 EXECUTION

### 3.1 COORDINATION

- A. Coordinate requirements for blocking to ensure adequate means for support and installation of hand dryers.
- B. Coordinate requirements for power supply, conduit, disconnect switches, and wiring.
- C. Coordinate dryer installation with application of wall finishes.

### 3.2 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### 3.3 INSTALLATION

- A. Comply with manufacturer's written installation instructions and approved shop drawings.
- B. Mount dryers at heights indicated on Drawings and approved shop drawings.
- C. Install bases securely to supporting substrate so that dryers are level and aligned with each other. Anchor with fasteners of type and size recommended by manufacturer for type of wall substrate.
- D. Install dryers with recess mounting kits such that maximum projection from wall surface is 4 inches (102 mm) in compliance with ICC/ANSI A117.1. Anchor box in rough wall opening with fasteners of type and size recommended by manufacturer. When cover is installed over dryer, ensure that joint between box and wall finish is concealed.

### 3.4 CLEANING, TESTING, AND DEMONSTRATING

- A. Remove protective wrappings. Clean surfaces with mild soap solution. Do not use abrasives.
- B. Inspect installed dryers to verify mounting is rigid and electrical connections are proper. Test each dryer to verify operation and performance. Correct deficiencies.
- C. Protect dryers from remaining construction activities. Immediately remove and replace dryers that are damaged.
- D. Demonstrate operation and maintenance to Owner's representative.

### 3.5 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION