



## SECTION 10811

### ELECTRIC HAND DRYERS

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#### PART 1 GENERAL

##### 1.1 SECTION INCLUDES

- A. Warm air, high speed, energy efficient self-contained electric hand dryers.
- B. Warm air, self-contained electric hair 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. ICC/ANSI A117.1 - American National Standard for Accessible and Useable Buildings and Facilities; 1998.

##### 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. Operating instructions and performance.
  - 3. Storage and handling requirements and recommendations.
  - 4. Installation methods.
- C. Shop Drawings showing dimensions, method of attachment, and required supports.
- D. LEED Submittals: Provide documentation of how the requirements of Credit will be met:

- E. Electrical wiring diagrams for connection of hand dryers.
- F. Warranty for review by Architect.
- G. Manufacturer's Certificates: Certify products meet or exceed specified requirements.

#### 1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing electric hand dryers with 10 years minimum experience.
- B. Equipment certified by Underwriters Laboratory, Inc., with UL labels.
- C. Comply with ICC/ANSI A117.1.

#### 1.6 WARRANTY

- A. Provide manufacturer's standard limited warranty for period specified.

### PART 2 PRODUCTS

#### 2.1 MANUFACTURERS

- A. Acceptable Manufacturer: Excel Dryer Inc., which is located at: 357 Chestnut St. P. O. Box 365 ; East Longmeadow, MA 01028; Tel: 413-525-4531; Email: [request info \(sales@exceldryer.com\)](mailto:requestinfo@exceldryer.com); Web: [www.exceldryer.com](http://www.exceldryer.com)
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

#### 2.2 ELECTRIC HAND DRYERS

- A. Hand Dryer: Warm air, rapid drying, energy efficient electric hand dryer; XLERATOR; surface mounted; entire dryer internally grounded.
  - 1. Warranty Period: 5 years; limited warranty.
  - 2. Controls: Automatic, activated by infrared optical sensor. Operates while hands are under blower. Shut-off within 2 seconds when hands removed, or in 35 seconds if hands not removed.
  - 3. Cover: One piece, vandal resistant, reinforced white thermoplastic (Bulk Molding Compound).
  - 4. Cover: Stainless steel with brushed finish.
  - 5. Cover: One piece, heavy duty, rust-resistant, rib-reinforced, die-cast zinc alloy.
    - a. Finish: Electrostatically applied, chip resistant, white paint.
    - b. Finish: Electrostatically applied, chip resistant, textured graphite paint (grey).
    - c. Finish: Bright chrome plated.
    - d. Finish: Custom color as selected by Architect.
  - 6. Image: Custom digital image as selected by Architect.
  - 7. Air Intake: Inlet openings on bottom of cover.
  - 8. Air Outlet: Delivers focused air stream at average hand position of 4 inches (102 mm) below air outlet.
  - 9. Noise Reduction Nozzle: 1.1 noise reduction nozzle.
  - 10. Wall Plate: Injection molded, rib reinforced plate with metal L brackets to attach cover, with ten 5/16 inch (8 mm) diameter holes for surface mounting to wall and three 7/8 inch (22 mm) diameter holes for electrical wiring; bottom

- hole suitable for surface conduit.
11. Recess Kit: ADA compliant recess kit is fabricated of 22 GA 18-8 type 304 stainless steel with #4 satin finish with 16 GA18-8 type 304 stainless steel dryer mounting plate. All welded construction. 16-3/8 inches (416 mm) wide by 26 inches (660 mm) high by 3-3/8 inches (86 mm) deep.
  12. Nominal Size: 11-3/4 inches (298 mm) wide by 12-11/16 inches (322 mm) high by 6-11/16 inches (170 mm) deep.
  13. Weight:
    - a. 17 pounds (7.7 kg) die cast cover.
    - b. 15 pounds (6.8 kg) stainless cover.
    - c. 13 pounds (5.9 kg) bulk mold compound.
  14. Power Source: 110/120 volt, 12.5 amp, 60 Hz
  15. Power Source: 208 volt, 7.0 amp, 60 Hz
  16. Power Source: 220/240 volt, 6.5 amp, 60 Hz
  17. Power Source: 277 volt, 5.5 amp, 60 Hz
  18. Power Source: 220/240 volt, 6.5 amp, 50 Hz
  19. Combination Motor and Blower: Series commutated, through-flow discharge, vacuum type; 5/8 HP, 20,000 RPM. Air flow rate: 19,000 linear feet per minute (97 meters per second) at air outlet, 16,000 linear feet per minute (81 meters per second) at average hand position of 4 inches (102 mm) below air outlet.
  20. Heater: Nichrome wire element, mounted inside blower housing to be vandal proof.
  21. Heater Safeguard: Automatic resetting thermostat to open when air flow is restricted and close when air flow is resumed.
  22. Air Temperature: 135 degrees F (55 degrees C) measured at average hand position of 4 inches (102 mm) below air outlet. Air Heater Output: 900 watts.
  23. All metal parts coated according to Underwriters Laboratories, Inc. requirements.
  24. Mount dryers at heights indicated on Drawings.
  25. Mount at the following heights above floor surface:
    - a. Men's Toilets: 45 inches (1143 mm).
    - b. Women's Toilets: 43 inches (1092 mm).
    - c. Teenagers' Toilets: 41 inches (1041 mm).
    - d. Young Children's Toilets: 35 inches (889 mm).
    - e. Toilets for Persons with Physical Disabilities: 37 inches (940 mm).
- B. Hand or Hair Dryer: Warm air electric hand dryer; push-button; Hands On series; entire dryer internally grounded.
1. Warranty Period: 10 years; unlimited warranty.
  2. Controls, Hand Dryers: Push button; electronic timer with adjustable time cycle; set to 30 seconds.
  3. Controls, Hair Dryers: Push button; electronic timer with adjustable time cycle; set to 3 minutes.
  4. Cover: One piece, heavy duty, rust-resistant, rib-reinforced, die-cast zinc alloy. Recessed instruction plate.
  5. Finish: Electrostatically applied, chip resistant, white paint.
  6. Finish: Bright chrome plated.
  7. Finish: Custom color as selected by Architect.
  8. Nozzle: Fixed chrome plated nozzle.
  9. Nozzle: 360 degree revolving, chrome plated nozzle.
  10. Push Button: Die-cast, chrome plated, zinc alloy push button.
  11. Air Intake: Perforated metal screen fixed to cover; designed to keep foreign objects out of dryer.
  12. Mounting: Surface, mounted on cast zinc alloy wall plate, with four 5/16 inch (8 mm) diameter holes for surface mounting to wall and three 7/8 inch (22

- mm) diameter holes for electrical wiring; bottom hole suitable for surface conduit.
- a. Nominal Size: 10-3/4 inches (273 mm) wide by 8 inches (203 mm) high by 10-1/8 inches (257 mm) deep including nozzle.
  - b. Weight: 18 pounds (8.1 kg).
13. Mounting: Semi-recessed, mounted on cast zinc alloy plate in wall box with concealed mounting bolts; two 7/8 inch (22 mm) diameter holes for electrical wiring.
- a. Nominal Size: 12-1/2 inches (318 mm) wide by 9-3/4 inches (248 mm) high by 7-1/8 inches (181 mm) deep including nozzle.
  - b. Weight: 20 pounds (9.0 kg).
14. Power Source: 110/120 volt, 15 amp, 60 Hz.
15. Power Source: 110/120 volt, 20 amp, 60 Hz.
16. Power Source: 208/230 volt, 10 amp, 60 Hz.
17. Power Source: 277 volt, 8 amp, 60 Hz.
18. Power Source: 220 volt, 10 amp, 50 Hz.
19. Power Source: 240 volt, 10 amp, 50 Hz.
20. Motor: 60 Hz. Capacitor-initiated; brushless, for longer life and quiet operation; 1/10 HP, 3,450 RPM; self-lubricating bearings; self-resetting thermal protection.
21. Motor: 50 Hz. Universal brush, 1/10 HP, 4200 RPM; sealed ball bearings; insulated by resilient mounting and thermally protected.
22. Blower Fan: Single inlet centrifugal, 150 cubic feet per minute (0.071 cubic meters per second); mounted on motor shaft; insulated with resilient rubber mounting to obtain maximum sound and vibration dampening.
23. Heater: Nichrome wire element, side mounted on blower housing to be vandal proof.
24. Heater Safeguard: Automatic resetting thermostat to open when air flow is restricted and close when air flow is resumed.
25. Air Temperature: 145 degrees F (63 degrees C).
26. All metal parts coated according to Underwriters Laboratories, Inc. requirements.
27. Mount dryers at heights indicated on Drawings.
28. Mount hand dryers at the following heights above floor surface:
- a. Men's Toilets: 40 inches (1016 mm).
  - b. Women's Toilets: 38 inches (965 mm).
  - c. Teenagers' Toilets: 36 inches (914 mm).
  - d. Young Children's Toilets: 30 inches (762 mm).
  - e. Toilets for Persons with Physical Disabilities: 32 inches (813 mm).
29. Mount hair dryers at the following heights above floor surface:
- a. Men's Showers: 64 inches (1626 mm).
  - b. Women's Showers: 58 inches (1473 mm).
  - c. Teenagers' Showers: 56 inches (1422 mm).
  - d. Young Children's Showers: 43 inches (1092 mm).
  - e. Showers for Persons with Physical Disabilities: 45 inches (1143 mm).
- C. Hand Dryer: Warm air electric hand dryer; automatic; Hands Off series; surface mounted or semi-recessed; entire dryer internally grounded.
1. Warranty Period: 10 years; limited warranty.
  2. Electronic Controls: Activated by infrared optical sensor. Operates while hands are moving under blower. Shut-off in 90 seconds if hands not removed.
  3. Cover: One piece, heavy duty, rust-resistant, rib-reinforced, die-cast zinc alloy. Recessed instruction plate.
  4. Finish: Electrostatically applied, chip resistant, white paint.
  5. Finish: Bright chrome plated.

6. Finish: Custom color as selected by Architect.
  7. Mounting: Surface, mounted on cast zinc alloy plate, with four 5/16 inch (8 mm) diameter holes for surface mounting to wall and three 7/8 inch (22 mm) diameter holes for electrical wiring; bottom hole suitable for surface conduit.
    - a. Air Intake: Inlet openings on bottom of cover.
    - b. Air Outlet: Cast alloy grating fixed into blower housing.
    - c. Nominal Size: 12 inches (305 mm) wide by 9-3/4 inches (248 mm) high by 8 inches (203 mm) deep. Weight: 17 pounds (7.3 kg).
    - d. Air Temperature: 130 degrees F (54 degrees C).
  8. Mounting: Semi-recessed, mounted on cast zinc alloy plate in wall box with concealed mounting bolts; two 7/8 inch (22 mm) diameter holes for electrical wiring.
    - a. Air Intake: Vandal resistant metal grill on bottom of casting.
    - b. Air Outlet: Chrome-plated, die-cast zinc nozzle, fixed to front of cover.
    - c. Nominal Size: 12-1/2 inches (318 mm) wide by 9-3/4 inches (248 mm) high by 7-1/8 inches (181 mm) deep including nozzle. Weight: 20 pounds (9.0 kg).
    - d. Air Temperature: 145 degrees F (63 degrees C).
  9. Power Source: 110/120 volt, 15 amp, 60 Hz.
  10. Power Source: 110/120 volt, 20 amp, 60 Hz.
  11. Power Source: 208/230 volt, 10 amp, 60 Hz.
  12. Power Source: 277 volt, 8 amp, 60 Hz (maximum 2,400 W).
  13. Power Source: 220 volt, 10 amp, 50 Hz.
  14. Power Source: 240 volt, 10 amp, 50 Hz.
  15. Motor: 60 Hz. Capacitor-initiated; brushless, for longer life and quiet operation; 1/10 HP, 3,450 RPM; self-lubricating bearings; self-resetting thermal switch.
  16. Motor: 50 Hz. Universal brush, 1/10 HP, 4200 RPM; sealed ball bearings; insulated by resilient mounting and thermally protected.
  17. Blower Fan: Single inlet centrifugal, 180 cubic feet per minute (0.085 cubic meters per second); mounted on motor shaft; insulated with resilient rubber mounting to obtain maximum sound and vibration dampening.
  18. Heater: Nichrome wire element, side-mounted on blower housing to be vandal proof.
  19. Heater Safeguard: Automatic resetting thermostat to open when air flow is restricted and close when air flow is resumed.
  20. All metal parts coated according to Underwriters Laboratories, Inc. requirements.
  21. Mount dryers at heights indicated on Drawings.
  22. Mount surface mounted hand dryers at the following heights above floor surface:
    - a. Men's Toilets: 43 inches (1092 mm).
    - b. Women's Toilets: 41 inches (1041 mm).
    - c. Teenagers' Toilets: 39 inches (991 mm).
    - d. Young Children's Toilets: 33 inches (838 mm).
    - e. Toilets for Persons with Physical Disabilities: 35 inches (889 mm).
  23. Mount semi-recessed hand dryers at the following heights above floor surface:
    - a. Men's Toilets: 40 inches (1016 mm).
    - b. Women's Toilets: 38 inches (965 mm).
    - c. Teenagers' Toilets: 36 inches (914 mm).
    - d. Young Children's Toilets: 30 inches (762 mm).
    - e. Toilets for Persons with Physical Disabilities: 32 inches (813 mm).
- D. Hand Dryer: Warm air electric hand dryer; Lexan series; surface mounted; lightweight; entire dryer internally grounded.

1. Warranty Period: 5 years; limited warranty.
2. Controls: Push button, chrome-plated, on cover; sealed electronic timer with adjustable cycle, set for 30 seconds. (Hands On).
3. Controls: Automatic; activated by infrared optical sensor. Operates while hands are moving under blower. Shut-off in 90 seconds if hands not removed. (Hand Off).
4. Cover: One piece, molded Lexan 940; uniformly white throughout. Recessed instruction plate.
5. Wall Plate: Cast zinc alloy plate, with four 5/16 inch (8 mm) diameter holes for surface mounting to wall and three 7/8 inch (22 mm) diameter holes for electrical wiring; bottom hole suitable for surface conduit.
6. Air Intake: Inlet openings on bottom of cover.
7. Air Outlet: Chrome-plated, die-cast zinc grating; fixed to blower housing; designed to keep foreign objects out of dryer.
8. Nominal Size: 12 inches (305 mm) wide by 9-3/4 inches (248 mm) high by 8 inches (203 mm) deep. Weight: 13 pounds (5.9 kg).
9. Power Source: 110/120 volt, 15 amp, 60 Hz.
10. Power Source: 110/120 volt, 20 amp, 60 Hz.
11. Power Source: 208/230 volt, 10 amp, 60 Hz.
12. Power Source: 277 volt, 8 amp, 60 Hz.
13. Power Source: 220 volt, 10 amp, 50 Hz.
14. Power Source: 240 volt, 10 amp, 50 Hz.
15. Motor: 60 Hz. Capacitor-initiated; brushless, for longer life and quiet operation; 1/10 HP, 3,400 RPM; self-lubricating bearings; self-resetting thermal switch.
16. Motor: 50 Hz. Universal; 1/10 HP, 4,200 RPM at rated loads; sealed lubricated ball bearings; self-resetting thermal switch.
17. Blower Fan: Single inlet centrifugal, 180 cubic feet per minute (0.085 cubic meters per second); mounted on motor shaft; insulated with resilient rubber mounting to obtain maximum sound and vibration dampening.
18. Heater: Nichrome wire element, side-mounted on blower housing to be vandal proof.
19. Heater Safeguard: Automatic resetting thermostat to open when air flow is restricted and close when air flow is resumed.
20. Air Temperature: 130 degrees F (55 degrees C).
21. All metal parts coated according to Underwriters Laboratories, Inc. requirements.
22. Mount dryers at heights indicated on Drawings.
23. Mount at the following heights above floor surface:
  - a. Men's Toilets: 43 inches (1092 mm).
  - b. Women's Toilets: 41 inches (1041 mm).
  - c. Teenagers' Toilets: 39 inches (991 mm).
  - d. Young Children's Toilets: 33 inches (838 mm).
  - e. Toilets for Persons with Physical Disabilities: 35 inches (889 mm).

## PART 3 EXECUTION

### 3.1 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.

### 3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.

- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Coordinate requirements for blocking to ensure adequate means for support and installation of hand dryers.
- D. Coordinate requirements for power supply, conduit, disconnect switches and wiring.

### 3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Install dryers at specified heights.
- C. Install dryers securely to supporting substrate so that fixtures are level and aligned with each other. Use type and length of fastener as recommended by manufacturer for type of substrate.

### 3.4 PROTECTION

- A. Inspect installation to verify secure and proper mounting. Test each dryer to verify operation, control functions, and performance. Correct deficiencies.
- B. Protect installed driers until completion of project.
- C. Replace damaged products before Substantial Completion.

END OF SECTION