SECTION 11 53 13

LABORATORY FUME HOODS

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\*\* NOTE TO SPECIFIER \*\* HEMCO Corporation; laboratory fume hoods.  
This section is based on the products of HEMCO Corporation, which is located at:711 S. Powell Rd.Independence, MO 64056Toll Free Tel: 800-779-4362Tel: 816-796-2900Fax: 816-796-3333Email: [request info (sales@hemcocorp.com)](https://arcat.com/rfi?action=email&company=HEMCO%252BCorporation&message=RE%253A%2520Spec%2520Question%2520(11610hem)%253A%2520&coid=33027&spec=11610hem&rep=&fax=816-796-3333)  
Web: <http://www.hemcocorp.com/>   
 [ [Click Here](https://arcat.com/company/hemco-corporation-33027) ] for additional information.  
HEMCO is the leading manufacturer of innovative laboratory equipment serving the Sciences and R&D Technology Industries since 1958. Located in Independence, Missouri, the heart of America, and the crossroads of North America a major center for transportation, communication, distribution, and manufacturing industries worldwide.  
HEMCO's modern manufacturing and distribution facilities combined with our many years of experience uniquely qualifies us to provide laboratory planning solutions. Our extensive engineering, design and manufacturing expertise can transform your laboratory ideas into reality.  
HEMCO offers a complete line of UniFlow laboratory fume hoods. Bench-mounted hoods in widths from 24" to 96". Floor-mounted (walk-in) hoods from 48" to 144" wide and up to 96" deep. UniFlow fume hoods are designed for performance, user protection, and save 50 percent on reduced energy cost.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Laboratory fume hoods, including the following types:
       1. SE AireStream Series.
       2. LE Series.
       3. CE Series.
       4. SE FM Series.
       5. SE Dual Entry Series.
       6. LE FM Series.
       7. LE Dual Entry Series.
       8. Perchloric Acid Fume Hoods.
       9. Acid Digestion Fume Hoods.
       10. Trace Metals Fume Hoods.
       11. Radioisotope Fume Hoods.
       12. Modular Fume Hoods (UniMax).
    2. Vented Enclosures (EnviroMax).
    3. Fume hood services and accessories.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section - .
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM E 84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
    2. ANSI/AIHA Z9.5-2012 - Standard on Ventilation for Laboratories.
    3. ANSI Z21.15 - Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves.
    4. ASHRAE 110-1995 - Method of Testing the Performance of Laboratory Fume Hoods.
    5. CAL/OSHA 5154.1 - Ventilation Requirements for Laboratory-Type Hood Operations.
    6. CSA-22.2 - Canadian Standard for Wire/Cable Requirements and Use.
    7. ISO 9001-2008 - Certified Company.
    8. OSHA 29-CFR-1910 - Occupational Safety and Health Standards.
    9. NFPA-45 - Standard on Fire Protection for Laboratories.
    10. SEFA 1-2003 - Recommended Practices for Laboratory Fume Hoods.
    11. UL 1805 - Standard for Laboratory Fume Hoods and Cabinets.
    12. UL 3101 - Electrical Equipment for Laboratory Use.
  1. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. 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.
     3. Shop Drawings: Include plans, elevations, sections and service run spaces.
        1. Service fittings, as related to the fume hood, shall illustrate location and type when required.
        2. Mechanical and electrical services, as related to the fume hood, shall be illustrated where required.
        3. Face opening, air volume and static pressure data of each fume hood shall be clearly noted in drawings or separate documentation.
     4. Submit manufacturer's test data and installation instructions for each type of fume hood. Provide data indicating compliance with UL 1805, ASHRAE 110-95 Standards and ISO 9001-2008.
     5. Verification Samples:

\*\* NOTE TO SPECIFIER \*\* Delete samples not required.

* + - 1. Interior fume hood liner material, 6 x 6 inch section.
      2. Countertops with dished formation, 6 x 6 inch section.
      3. Color samples of manufacturer's finish.
      4. Hardware and accessories including sample sash handle and/or pulls, cables, and pulleys.
  1. QUALITY ASSURANCE
     1. Sourcing: Laboratory fume hoods shall be the product of a single manufacturer.
     2. Manufacturer Qualifications: Minimum 5 years experience manufacturing similar products.
        1. Laboratory Fume Hoods manufactured and assembled entirely in the USA.
        2. ISO 9001-2008 Certified Company.
        3. Manufacturer must maintain a fume hood examination lab at plant location with ability to conduct ANSI/ASHRAE 110 testing.
     3. Installer Qualifications: Minimum 2 years experience installing similar products.

\*\* NOTE TO SPECIFIER \*\* Include a mock-up if the project size and/or quality warrant taking such a precaution. The following is one example of how a mock-up on a large project might be specified. When deciding on the extent of the mock-up, consider all the major different types of work on the project.

* + 1. 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 is approved by Architect.
       3. Rework mock-up area as required to produce acceptable work.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Deliver and store products in manufacturer's unopened packaging bearing the brand name and manufacturer's identification until ready for installation.
     2. Inspect crate for damage and possible concealed damage that may have occurred in transit.
     3. Handling: Handle materials to avoid damage.
  2. PROJECT CONDITIONS
     1. 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 recommended limits.
  3. SEQUENCING
     1. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  4. WARRANTY
     1. Warranty: Manufacturer's 5 year limited warranty. The manufacturer shall repair or replace any portion of the fume hood, under normal use, if examination discloses it to have been defective within the warranty period.

1. GENERAL
   1. MANUFACTURERS
      1. Acceptable Manufacturer: HEMCO Corporation, which is located at:711 S. Powell Rd.Independence, MO 64056Toll Free Tel: 800-779-4362Tel: 816-796-2900Fax: 816-796-3333Email: [request info (sales@hemcocorp.com)](https://arcat.com/rfi?action=email&company=HEMCO%252BCorporation&message=RE%253A%2520Spec%2520Question%2520(11610hem)%253A%2520&coid=33027&spec=11610hem&rep=&fax=816-796-3333);Web: <http://www.hemcocorp.com/>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. SE AIRESTREAM SERIES FUME HOODS
     1. Basis of Design: UniFlow SE AireStream Series by HEMCO Corporation.
     2. Components:
        1. Face Opening: Molded aerodynamic opening with upper and lower airfoils to minimize air flow turbulence and provide a constant volume of air flow.
        2. Baffle System: VaraFlow design with Vector slots:
           1. Material: HiPel composite resin.
           2. Fume hood shall effectively maintain safe, constant exhaust volume at any baffle position.
           3. Constructed of upper, middle, and lower sections.
           4. Positioned such that horizontal and vertical edge slots effectively create near laminar air flow through the fume chamber.
           5. Factory set such that the fume hood is at its optimum performance level.
           6. Lower Baffle: Staggered slotted array.
           7. Rounded edges to raw fumes smoothly through baffle system.
           8. Removable for cleaning.
        3. Exhaust Collar: Integral, bell shaped.
           1. Standard 12 inch round collars.
           2. Same HiPel material as hood structure.
           3. Chemically bonded to the fume chamber ceiling.
        4. Component Fume Chamber: One piece, molded.
           1. Liner: Non-conducting white HiPel, 3/16 inch nominal thickness. Molded one piece seamless with coved corners.

Chemical resistant.

Flame resistant. Meets UL 1805 and NFPA 45.

\*\* NOTE TO SPECIFIER \*\* Select liner material. HiPel is standard. Delete liner options not required.

* + - * 1. Liner: 304 Stainless Steel, 16 ga, No. 4 finish.
        2. Liner: 316 Stainless Steel, 16 ga, No. 4 finish.
        3. Liner: HDPE, 1/4 inch (6 mm) nominal thickness.
        4. Liner: PVC sheet, 1/4 inch nominal thickness.
        5. Liner: Polypropylene, white, 1/4 inch nominal thickness.
        6. Coved Corners.
        7. Smooth finish for ease of cleaning.
        8. Interior Vertical Clearance: 52 inches nominal.
      1. Constant Air Volume (CAV) Model: Automatic air bypass to provide a constant air volume.
         1. When the sash is closed, upper bypass and lower bypass is drawing 100 percent of the supply air.
         2. As the sash is raised, the upper bypass begins to close and is completely closed when the sash reaches the full open position.
      2. Variable Air Volume (VAV) Model: Restricted air bypass:
         1. With a design face velocity set, the air volume changes as the sash is raised or lowered.
         2. A minimum flow of 25 CFM per square foot of surface is recommended by the NFPA when the sash is closed.
      3. Superstructure and Mold Liner Material: Unitized composite construction for total chemical resistance, strength, durability and reduced weight:
         1. Material: HiPel, white thermosetting resin surface layers with fiberglass reinforced composite core, 3/16 inch thick.
         2. Side Walls: 5 inches wide, chemically bonded to liner.
         3. Materials are tested and classified by U.L. for Class A fire resistant, non-metallic materials used in laboratories.
      4. Fascia Posts: Aerodynamically angled to provide uniform air flow in the fume chamber. Continuation of the one piece HiPel liner.
      5. Removable Front Panel: Located above the sash allows access to electrical connections, light bulb change out, sash weights and duct connections.
      6. Exterior Side Panels: Unitized and chemically bonded to form homogeneous one piece superstructure. HiPel resin.
      7. Air Foil:
         1. Material: HiPel composite resin, non-conducting.
         2. Smooth color finish.

Color: \_\_\_\_\_.

* + - * 1. Air foil across lower sash to provide clean sweep of air over work surface.
        2. One inch air bypass inlet under air foil to insure uniform air flow at face and to sweep heavier than air vapors off work surface.
        3. Upper airfoil provides clean flow of air in upper area of the fume chamber to minimize turbulent air flow through the fume chamber.
      1. Sash: Picture frame sash.

\*\* NOTE TO SPECIFIER \*\* Select glazing option. Tempered Safety Glass is standard. Delete glazing options not required.

* + - * 1. Glazing: Clear tempered safety glass.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

Extended View Panel: Extended sash height allowing full visual display of fume hood interior.

* + - * 1. Glazing: Clear laminated safety glass.
        2. Glazing: Clear polycarbonate.

\*\* NOTE TO SPECIFIER \*\* Select sash assembly. Delete assembly options not required.

* + - 1. Sash Assembly: Full view, vertical rising.
         1. Frame, Track, and Pull: Chemical resistant PVC.
         2. Counterbalance System: PVC coated, 1/8 inch diameter stainless steel aircraft cable with attached single sash counter weight.

Cable Pulley System: 2 inch diameter nylon ball bearing.

* + - * 1. Full width finger sash pull.
        2. Lifting force of no more than 5 pounds.

Sash cable runs through bottom of sash to prevent.

* + - * 1. Adjustable turnbuckle for leveling counterweight/sash.
      1. Sash Assembly: Combination Sash.
         1. Vertical viewing with horizontal sliding doors.
         2. Sliding panels constructed of clear tempered safety glass set into a stainless steel frame.
         3. Allows for both horizontal and vertical movement options to the end user.
         4. Counterbalance System: Two PVC coated, 1/8 inch diameter stainless steel aircraft cable with attached single sash counter weight.

Cable Pulley System: 2 inch diameter nylon ball bearing.

* + - * 1. Lifting force of no more than 5 pounds.

Sash cable runs through bottom of sash to prevent.

* + - * 1. Adjustable turnbuckle for leveling counterweight/sash.
      1. Sash Assembly: Horizontal Sliding Sash.
         1. Anodized aluminum top rail and bottom track.
         2. Bottom supported.
         3. Sliding panels shall be framed with anodized aluminum frame on top and a bottom supported aluminum rolling frame.
         4. Standard clear tempered safety glass panels set into an aluminum track.
         5. Housed within the stainless steel frame.
      2. Illumination of Work Area: Area inside the superstructure from side to side, from face of baffle to inside face of sash, and from working surface to a height of 52 inches.
         1. Minimum Illumination: 80 foot candles.
         2. Fixtures: 2 tube LED fixture:

\*\* NOTE TO SPECIFIER \*\* Select fixture size. Delete fixture sizes not required.

48 inch hood: 24 inch.

60 inch hood: 36 inch.

72 inch hood: 48 inch.

96 inch hood: (2) 36 inch.

UL and CSA listed.

Mounted fixture with removable stainless steel light bracket with mirrored finish.

Clear tempered safety glass panel provides vapor-tight barrier and seal to separate the fixture from the hood interior.

\*\* NOTE TO SPECIFIER \*\* Explosion-proof fixtures are optional. Delete options not required.

Explosion-proof fixture: Class I Division II.

Explosion-proof fixture: Class I Division I.

* + 1. Materials:
       1. HiPel Composite: Two white surfaces chemically bonded to a fiberglass reinforced core layer of thermosetting resin. No exposed fiberglass.
          1. Nominal Thickness: 4.5 mm.
          2. Meets or exceeds NFPA 45.

\*\* NOTE TO SPECIFIER \*\* Select glazing option. Delete glazing options not required.

* + - 1. Sash Glass: 3/16 inch clear Tempered Safety Glass per ASTM C 1048.
      2. Sash Glass: 1/4 inch clear Laminated Safety Glass per ASTM C 1172.
      3. Sash Glass: 3/16 inch clear Polycarbonate Safety Glass.
      4. Sash Glass: 1/4 inch clear Polycarbonate Safety Glass.
    1. Fasteners:
       1. Interior Surfaces: PVC-capped No. 8 pan stainless steel screws and nylon bolts.
       2. Exterior Structural Members: No. 8 pan stainless steel screws and nylon bolts.
    2. Work Surfaces:

\*\* NOTE TO SPECIFIER \*\* Select work surface option. Delete options not required.

* + - 1. Epoxy Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Black.
      2. Phenolic Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Charcoal.
      3. 316 Stainless Steel: 6 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.
      4. 304 Stainless Steel: 16 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.
    1. Base Cabinets and Tables:

\*\* NOTE TO SPECIFIER \*\* Select base option required. Delete options not required.

* + - 1. Base Cabinet: Constructed of furniture grade steel. With adjustable shelf and levelers.
      2. Acid Cabinet: Interior lined with one-piece acid resistant white composite resin liner with all covered corners for superior corrosion resistance. With vents and fixed shelf.
      3. Flammable Cabinet: Provides safe storage of flammables. Constructed of welded double wall furniture grade steel. With adjustable shelf and locking hinged doors. Meets NFPA codes.
      4. Fume Hood Base Table: Heavy duty, all welded 2 inch square tube steel construction. Each leg has levelers with fitted black boots.

\*\* NOTE TO SPECIFIER \*\* Delete height not required.

* + - * 1. Bench Height: 35 inches.
        2. Sitting Height: 28 inches.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. LE SERIES FUME HOODS
     1. Basis of Design: UniFlow LE Series by HEMCO Corporation.
     2. Components:
        1. Face Opening: Molded aerodynamic opening with upper and lower airfoils to minimize air flow turbulence and provide a constant volume of air flow.
        2. Baffle System: VaraFlow design with Vector slots:
           1. Material: HiPel composite resin.
           2. Fume hood shall effectively maintain safe, constant exhaust volume at any baffle position.
           3. Constructed of upper, middle, and lower sections.
           4. Positioned such that horizontal and vertical edge slots effectively create near laminar air flow through the fume chamber.
           5. Factory set such that the fume hood is at its optimum performance level.
           6. Lower Baffle: Staggered slotted array.
           7. Rounded edges to raw fumes smoothly through baffle system.
           8. Removable for cleaning.
        3. Exhaust Collar: Integral, bell shaped.
           1. Standard round collars.
           2. Same HiPel material as hood structure.
           3. Chemically bonded to the fume chamber ceiling.

\*\* NOTE TO SPECIFIER \*\* Delete collar sizes not required.

* + - * 1. 36 inch hood: 1-8 inch diameter.
        2. 48 inch hood: 1-10 inch diameter.
        3. 60 inch hood: 1-10 inch diameter.
        4. 72 inch hood: 1-12 inch diameter.
        5. 96 inch hood: 2-10 inch diameter.
      1. Component Fume Chamber: One piece, molded.

\*\* NOTE TO SPECIFIER \*\* Select liner material. HiPel is standard. Delete liner options not required.

* + - * 1. Liner: Non-conducting white HiPel, 3/16 inch nominal thickness. Molded one piece seamless with coved corners.

Chemical resistant.

Flame resistant. Meets UL 1805 and NFPA 45.

* + - * 1. Liner: 304 Stainless Steel, 16 ga, No. 4 finish.
        2. Liner: 316 Stainless Steel, 16 ga, No. 4 finish.
        3. Liner: PVC sheet, 1/4 inch nominal thickness.
        4. Liner: Polypropylene, white, 1/4 inch nominal thickness.
        5. Coved Corners.
        6. Smooth finish for ease of cleaning.
        7. Interior Vertical Clearance: 44 inches nominal.
      1. Constant Air Volume (CAV) Model: Automatic air bypass to provide a constant air volume.
         1. When the sash is closed, upper bypass and lower bypass is drawing 100 percent of the supply air.
         2. As the sash is raised, the upper bypass begins to close and is completely closed when the sash reaches the full open position.
      2. Variable Air Volume (VAV) Model: Restricted air bypass:
         1. With a design face velocity set, the air volume changes as the sash is raised or lowered.
         2. A minimum flow of 25 CFM per square foot of surface is recommended by the NFPA when the sash is closed.
      3. Superstructure and Mold Liner Material: Unitized composite construction for total chemical resistance, strength, durability and reduced weight:
         1. Material: HiPel, white thermosetting resin surface layers with fiberglass reinforced composite core, 3/16 inch thick.
         2. Side Walls: 5 inches wide, chemically bonded to liner.
         3. Materials are tested and classified by U.L. for Class A fire resistant, non-metallic materials used in laboratories.
      4. Fascia Posts: Aerodynamically angled to provide uniform air flow in the fume chamber. Continuation of the one piece HiPel liner.
      5. Removable Front Panel: Located above the sash allows access to electrical connections, light bulb change out, sash weights and duct connections.
      6. Exterior Side Panels: Unitized and chemically bonded to form homogeneous one piece superstructure. HiPel resin.
      7. Air Foil:
         1. Material: HiPel composite resin, non-conducting.
         2. Smooth color finish.

Color: \_\_\_\_\_.

* + - * 1. Air foil across lower sash to provide clean sweep of air over work surface.
        2. One inch air bypass inlet under air foil to insure uniform air flow at face and to sweep heavier than air vapors off work surface.
        3. Upper airfoil provides clean flow of air in upper area of the fume chamber to minimize turbulent air flow through the fume chamber.
      1. Sash: Picture frame sash:

\*\* NOTE TO SPECIFIER \*\* Select glazing option. Tempered Safety Glass is standard. Delete glazing options not required.

* + - * 1. Glazing: Clear tempered safety glass.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

Extended View Panel: Extended sash height allowing full visual display of fume hood interior.

* + - * 1. Glazing: Clear laminated safety glass.
        2. Glazing: Clear polycarbonate.

\*\* NOTE TO SPECIFIER \*\* Select sash assembly. Delete assembly options not required.

* + - 1. Sash Assembly: Full view, vertical rising.
         1. Frame, Track, and Pull: Chemical resistant PVC.
         2. Counterbalance System: PVC coated, 1/8 inch diameter stainless steel aircraft cable with attached single sash counter weight.

Cable Pulley System: 2 inch diameter nylon ball bearing.

* + - * 1. Full width finger sash pull.
        2. Lifting force of no more than 5 pounds.

Sash cable runs through bottom of sash to prevent.

* + - * 1. Adjustable turnbuckle for leveling counterweight/sash.
      1. Sash Assembly: Combination Sash.
         1. Vertical viewing with horizontal sliding doors.
         2. Sliding panels constructed of clear tempered safety glass set into a stainless steel frame.
         3. Allows for both horizontal and vertical movement options to the end user.
         4. Counterbalance System: Two PVC coated, 1/8 inch diameter stainless steel aircraft cable with attached single sash counter weight.

Cable Pulley System: 2 inch diameter nylon ball bearing.

* + - * 1. Lifting force of no more than 5 pounds.

Sash cable runs through bottom of sash to prevent.

* + - * 1. Adjustable turnbuckle for leveling counterweight/sash.
      1. Sash Assembly: Horizontal Sliding Sash.
         1. Anodized aluminum top rail and bottom track.
         2. Bottom supported.
         3. Sliding panels shall be framed with anodized aluminum frame on top and a bottom supported aluminum rolling frame.
         4. Standard clear tempered safety glass panels set into an aluminum track.
         5. Housed within the stainless steel rail.
      2. Illumination of Work Area: Area inside the superstructure from side to side, from face of baffle to inside face of sash, and from working surface to a height of 35 inches.
         1. Minimum Illumination: 80 foot candles.
         2. Fixtures: 2 tube LED fixture:

\*\* NOTE TO SPECIFIER \*\* Select fixture size. Delete fixture sizes not required.

36 inch hood: 24 inch.

48 inch hood: 24 inch.

60 inch hood: 36 inch.

72 inch hood: 48 inch.

96 inch hood: (2) 36 inch.

UL and CSA listed.

Mounted fixture with removable stainless steel light bracket with mirrored finish.

Clear tempered safety glass panel provides vapor-tight barrier and seal to separate the fixture from the hood interior.

\*\* NOTE TO SPECIFIER \*\* Explosion-proof fixtures are optional. Delete options not required.

Explosion-proof fixture: Class I Division II.

Explosion-proof fixture: Class I Division I.

* + 1. Materials:
       1. HiPel Composite: Two white surfaces chemically bonded to a fiberglass reinforced core layer of thermosetting resin. No exposed fiberglass.
          1. Nominal Thickness: 4.5 mm.
          2. Meets or exceeds NFPA 45.

\*\* NOTE TO SPECIFIER \*\* Select glazing option. Delete glazing options not required.

* + - 1. Sash Glass: 3/16 inch clear Tempered Safety Glass per ASTM C 1048.
      2. Sash Glass: 1/4 inch clear Laminated Safety Glass per ASTM C 1172.
      3. Sash Glass: 3/16 inch clear Polycarbonate Safety Glass.
      4. Sash Glass: 1/4 inch clear Polycarbonate Safety Glass.
    1. Fasteners:
       1. Interior Surfaces: PVC-capped No. 8 pan stainless steel screws and nylon bolts.
       2. Exterior Structural Members: No. 8 pan stainless steel screws and nylon bolts.
    2. Work Surfaces:

\*\* NOTE TO SPECIFIER \*\* Select work surface option. Delete options not required.

* + - 1. Epoxy Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Black.
      2. Phenolic Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Charcoal.
      3. 316 Stainless Steel: 6 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.
      4. 304 Stainless Steel: 16 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.
    1. Base Cabinets and Tables:

\*\* NOTE TO SPECIFIER \*\* Select base option required. Delete options not required.

* + - 1. Base Cabinet: Constructed of furniture grade steel. With adjustable shelf and levelers.
      2. Acid Cabinet: Interior lined with one-piece acid resistant white composite resin liner with all covered corners for superior corrosion resistance. With vents and fixed shelf.
      3. Flammable Cabinet: Provides safe storage of flammables. Constructed of welded double wall furniture grade steel. With adjustable shelf and locking hinged doors. Meets NFPA codes.
      4. Fume Hood Base Table: Heavy duty, all welded 2 inch square tube steel construction. Each leg has levelers with fitted black boots.

\*\* NOTE TO SPECIFIER \*\* Delete height not required.

* + - * 1. Bench Height: 35 inches.
        2. Sitting Height: 28 inches.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. CE SERIES FUME HOODS
     1. Basis of Design: UniFlow CE Series by HEMCO Corporation.
     2. Components:
        1. Face Opening: Molded aerodynamic opening with upper and lower airfoils to minimize air flow turbulence and provide a constant volume of air flow.
        2. Baffle System: VaraFlow design with Vector slots:
           1. Material: HiPel composite resin.
           2. Fume hood shall effectively maintain safe, constant exhaust volume at any baffle position.
           3. Constructed of upper, middle, and lower sections.
           4. Positioned such that horizontal and vertical edge slots effectively create near laminar air flow through the fume chamber.
           5. Factory set such that the fume hood is at its optimum performance level.
           6. Lower Baffle: Staggered slotted array.
           7. Rounded edges to raw fumes smoothly through baffle system.
           8. Removable for cleaning.
        3. Exhaust Collar: Integral, bell shaped.
           1. Standard round collars.
           2. Same HiPel material as hood structure.
           3. Chemically bonded to the fume chamber ceiling.

\*\* NOTE TO SPECIFIER \*\* Delete collar sizes not required.

* + - * 1. 30 inch hood: 1-6 inch diameter.
        2. 36 inch hood: 1-6 inch diameter.
        3. 48 inch hood: 1-8 inch diameter.
        4. 72 inch hood: 1-10 inch diameter.
      1. Component Fume Chamber: One piece, molded.

\*\* NOTE TO SPECIFIER \*\* Select liner material. HiPel is standard. Delete liner options not required.

* + - * 1. Liner: Non-conducting white HiPel, 3/16 inch nominal thickness. Molded one piece seamless with coved corners.

Chemical resistant.

Flame resistant. Meets UL 1805 and NFPA 45.

* + - * 1. Smooth finish for ease of cleaning.
        2. Interior Vertical Clearance: 35 inches nominal.
      1. Air Bypass: Automatic air bypass to provide a constant air volume.
         1. When the sash is closed, upper bypass and lower bypass is drawing 100 percent of the supply air.
         2. As the sash is raised, the upper bypass begins to close and is completely closed when the sash reaches the full open position.
      2. Superstructure and Mold Liner Material: Unitized composite construction for total chemical resistance, strength, durability and reduced weight:
         1. Material: HiPel, white thermosetting resin surface layers with fiberglass reinforced composite core, 3/16 inch thick.
         2. Side Walls: 5 inches wide, chemically bonded to liner.
         3. Materials are tested and classified by U.L. for Class A fire resistant, non-metallic materials used in laboratories.
      3. Fascia Posts: Aerodynamically angled to provide uniform air flow in the fume chamber. Continuation of the one piece HiPel liner.
      4. Removable Front Panel: Located above the sash allows access to electrical connections, light bulb change out, sash weights and duct connections.
      5. Exterior Side Panels: Unitized and chemically bonded to form homogeneous one piece superstructure. HiPel resin.
      6. Air Foil:
         1. Material: HiPel composite resin, non-conducting.
         2. Smooth color finish.

Color: \_\_\_\_\_.

* + - * 1. Air foil across lower sash to provide clean sweep of air over work surface.
        2. One inch air bypass inlet under air foil to insure uniform air flow at face and to sweep heavier than air vapors off work surface.
        3. Upper airfoil provides clean flow of air in upper area of the fume chamber to minimize turbulent air flow through the fume chamber.
      1. Sash: Full view, vertical raising, picture frame sash:

\*\* NOTE TO SPECIFIER \*\* Select glazing option. Clear tempered safety glass is standard. Delete glazing options not required.

* + - * 1. Glazing: Clear tempered safety glass.
        2. Glazing: Clear laminated safety glass.
        3. Glazing: Clear polycarbonate.
        4. Frame, Track, and Pull: Chemical resistant PVC.
        5. Counterbalance System: PVC coated, 1/8 inch diameter stainless steel aircraft cable with two sash counter weights.

Cable Pulley System: 1-3/4 inch diameter black delrin pulley wheel.

* + - * 1. Full width finger sash pull.
        2. Lifting force of no more than 5 pounds.
        3. Sash cable runs through bottom of sash to prevent sash from dropping.
        4. Adjustable counterweight for tilting adjustment.
      1. Illumination of Work Area: Area inside the superstructure from side to side, from face of baffle to inside face of sash, and from working surface to a height of 35 inches.
         1. Minimum Illumination: 80 foot candles.
         2. Fixtures: Vapor proof threaded bulb 100 watt fixture:

UL and CSA listed.

Clear glass threaded globe accessed from inside the fume chamber for bulb change out.

\*\* NOTE TO SPECIFIER \*\* Explosion-proof fixtures are optional. Delete options not required.

Explosion-proof fixture: Class I Division II.

Explosion-proof fixture: Class I Division I.

* + 1. Materials:
       1. HiPel Composite: Two white surfaces chemically bonded to a fiberglass reinforced core layer of thermosetting resin. No exposed fiberglass.
          1. Nominal Thickness: 4.5 mm.
          2. Meets or exceeds NFPA 45.

\*\* NOTE TO SPECIFIER \*\* Select glazing option. Tempered Safety Glass is standard. Delete glazing options not required.

* + - 1. Sash Glass: 3/16 inch clear Tempered Safety Glass per ASTM C 1048.
      2. Sash Glass: 1/4 inch clear Laminated Safety Glass per ASTM C 1172.
      3. Sash Glass: 3/16 inch clear Polycarbonate Safety Glass.
      4. Sash Glass: 1/4 inch clear Polycarbonate Safety Glass.
    1. Fasteners:
       1. Interior Surfaces: PVC-capped No. 8 pan stainless steel screws and nylon bolts.
       2. Exterior Structural Members: No. 8 pan stainless steel screws and nylon bolts.
    2. Work Surfaces:

\*\* NOTE TO SPECIFIER \*\* Select work surface option. Delete options not required.

* + - 1. Composite Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Gray.
      2. Epoxy Resin: 1 inch thick, flat, not dished. Black.
      3. Phenolic Resin: 1 inch thick flat, not dished. Black.
      4. 304 Stainless Steel: 16 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.
    1. Base Cabinets and Tables:

\*\* NOTE TO SPECIFIER \*\* Select base option required. Delete options not required.

* + - 1. Base Cabinet: Constructed of furniture grade steel. With adjustable shelf and levelers.
      2. Acid Cabinet: Interior lined with one-piece acid resistant white composite resin liner with all covered corners for superior corrosion resistance. With vents and fixed shelf.
      3. Flammable Cabinet: Provides safe storage of flammables. Constructed of welded double wall furniture grade steel. With adjustable shelf and locking hinged doors. Meets NFPA codes.
      4. Fume Hood Base Table: Heavy duty, all welded 2 inch square tube steel construction. Each leg has levelers with fitted black boots.

\*\* NOTE TO SPECIFIER \*\* Delete height not required.

* + - * 1. Bench Height: 35 inches.
        2. Sitting Height: 28 inches.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. SE FM FLOOR MOUNT FUME HOODS
     1. Basis of Design: UniFlow SE FM Floor Mount (Walk-In) Series by HEMCO Corporation.
     2. Components:
        1. Face Opening: Molded aerodynamic opening with upper and lower airfoils to minimize air flow turbulence and provide a constant volume of air flow.
        2. Baffle System: VaraFlow design with Vector slots:
           1. Material: HiPel composite resin.
           2. Fume hood shall effectively maintain safe, constant exhaust volume at any baffle position.
           3. Constructed of upper, middle, and lower sections.
           4. Positioned such that horizontal and vertical edge slots effectively create near laminar air flow through the fume chamber.
           5. Factory set such that the fume hood is at its optimum performance level.
           6. Lower Baffle: Staggered slotted array.
           7. Rounded edges to raw fumes smoothly through baffle system.
           8. Removable for cleaning.
        3. Exhaust Collar: Integral, bell shaped.
           1. Standard 12 inch round collars.
           2. Same HiPel material as hood structure.
           3. Chemically bonded to the fume chamber ceiling.
        4. Component Fume Chamber: One piece, molded.
           1. Liner: Non-conducting white HiPel, 3/16 inch nominal thickness. Constructed with a modular design allowing hood to be assembled in the field.

Chemical resistant.

Flame resistant. Meets UL 1805 and NFPA 45.

* + - * 1. Smooth finish for ease of cleaning.
        2. Interior Vertical Clearance: 82 inches nominal.
      1. Constant Air Volume (CAV) Model: Automatic air bypass to provide a constant air volume.
         1. When the sashes are closed, upper bypass and lower bypass is drawing 100 percent of the supply air.
         2. As the upper sash is raised, the upper bypass begins to close and is completely closed when the sash reaches the full open position.
      2. Variable Air Volume (VAV) Model: Restricted air bypass:
         1. With a design face velocity set, the air volume changes as the sashes are raised or lowered.
         2. A minimum flow of 25 CFM per square foot of surface is recommended by the NFPA when the sash is closed.
      3. Superstructure and Mold Liner Material: Modular composite construction for total chemical resistance, strength, durability and reduced weight:
         1. Material: HiPel, white thermosetting resin surface layers with fiberglass reinforced composite core, 3/16 inch thick.
         2. Side Walls: 5 inches wide, chemically bonded creating a unitized right and left double wall superstructure.
         3. Materials are tested and classified by U.L. for Class A fire resistant, non-metallic materials used in laboratories.
      4. Fascia Posts: Aerodynamically angled to provide uniform air flow in the fume chamber.
      5. Removable Front Panel: Located above the sash allows access to electrical connections, light bulb change out, sash weights and duct connections.
      6. Exterior Side Panels: Unitized and chemically bonded to form homogeneous one piece side wall superstructure. HiPel resin.
         1. One inch air gap inlet under lower sash to insure uniform air flow at face and to sweep heavier than air vapors off floor.
         2. Upper airfoil provides clean flow of air in upper area of the fume chamber to minimize turbulent air flow through the fume chamber.
      7. Sash Height: 62 inches.
      8. Viewing Height: 70 inches.
      9. Interior Height: 82 inches.
      10. Sash:
          1. Glazing: Clear tempered safety glass.
          2. Counter balanced, connected with coated stainless steel cables.
          3. PVC framing track and aerodynamic sash lift.

\*\* NOTE TO SPECIFIER \*\* Select sash assembly. Horizontal Sliding Sash is only available for 96, 120, and 144 inch wide hoods. Delete assembly options not required.

* + - 1. Sash Assembly: Double Vertical.
      2. Sash Assembly: Horizontal Sliding Sash.
      3. Illumination of Work Area: Area inside the superstructure from side to side, from face of baffle to inside face of sash, and from working surface to a height of 52 inches.
         1. Minimum Illumination: 80 foot candles.
         2. Fixtures: 2 tube LED fixture:

\*\* NOTE TO SPECIFIER \*\* Select fixture size. Delete fixture sizes not required.

48 inch hood: 24 inch.

60 inch hood: 36 inch.

72 inch hood: 48 inch.

96 inch hood: (2) 36 inch.

UL and CSA listed.

Mounted fixture with removable stainless steel light bracket with mirrored finish.

Clear tempered safety glass panel provides vapor-tight barrier and seal to separate the fixture from the hood interior.

\*\* NOTE TO SPECIFIER \*\* Explosion-proof fixtures are optional. Delete options not required.

Explosion-proof fixture: Class I Division II.

Explosion-proof fixture: Class I Division I.

* + 1. Materials:
       1. HiPel Composite: Two white surfaces chemically bonded to a fiberglass reinforced core layer of thermosetting resin. No exposed fiberglass.
          1. Nominal Thickness: 4.5 mm.
          2. Meets or exceeds NFPA 45.

\*\* NOTE TO SPECIFIER \*\* Select glazing option. Delete glazing options not required.

* + - 1. Sash Glass: 3/16 inch clear Tempered Safety Glass per ASTM C 1048.
      2. Sash Glass: 1/4 inch clear Laminated Safety Glass per ASTM C 1172.
      3. Sash Glass: 3/16 inch clear Polycarbonate Safety Glass.
      4. Sash Glass: 1/4 inch clear Polycarbonate Safety Glass.
    1. Fasteners:
       1. Interior Surfaces: PVC-capped No. 8 pan stainless steel screws and nylon bolts.
       2. Exterior Structural Members: No. 8 pan stainless steel screws and nylon bolts.
    2. Work Surfaces:

\*\* NOTE TO SPECIFIER \*\* Select work surface option. Delete options not required.

* + - 1. Epoxy Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Black.
      2. Phenolic Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Charcoal.
      3. 316 Stainless Steel: 6 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.
      4. 304 Stainless Steel: 16 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.

\*\* NOTE TO SPECIFIER \*\* UniFlow SE Dual Entry Air By-Pass hoods are ideal for demonstrations or applications where observation and access is required from both sides of the fume hood. They can be positioned on an island on in peninsular locations. Dual Entry hoods can be located on a common wall of two rooms with accessibility from either room. Delete if not required.

* 1. SE DUAL ENTRY SERIES.
     1. Basis of Design: SE Dual Entry Series by HEMCO Corporation.
     2. Design: Superstructure to be modular composite chemical resistant FRP non-metal construction. Interior fume chamber to be glass-smooth with bell shaped exhaust collar. Picture frame sash opening constructed of clear tempered safety glass with chemical resistant framing and track. Vapor proof light fixture and control switch are wired to a single point junction box, 115/60Hz, AC. Electrical components are U.L. listed.
     3. Size:

\*\* NOTE TO SPECIFIER \*\* Delete hood depth and width not required.

* + - 1. Hood Depth: 30 inches (762 mm).
      2. Hood Depth: 36 inches (914 mm).
      3. Hood Depth: 48 inches (1219 mm).
      4. Hood Width: 48 inches (1219 mm).
      5. Hood Width: 60 inches (1524 mm).
      6. Hood Width: 72 inches (1829 mm).
      7. Hood Width: 96 inches (2438 mm)
    1. Illumination of Work Area: Area inside the superstructure from side to side, from face of baffle to inside face of sash, and from working surface to a height of 35 inches.
       1. Minimum Illumination: 80 foot candles.
       2. Fixtures: Vapor proof threaded bulb 100 watt fixture:
          1. UL and CSA listed.
          2. Clear glass threaded globe accessed from inside the fume chamber for bulb change out.

\*\* NOTE TO SPECIFIER \*\* Explosion-proof fixtures are optional. Delete options not required.

* + - * 1. Explosion-proof fixture: Class I Division II.
        2. Explosion-proof fixture: Class I Division I.
    1. Components:
       1. Unitized dual wall construction for chemical resistance, strength, and durability. Meets NFPA-45 classification with flame spread of less than 25 per ASTM E-84.
          1. Access Panel: Removable to access ducting connections, plumbing and electrical services from a single point electrical box, 115/60Hz AC operation.
       2. Sash: Picture frame sash:
          1. Glazing: 3/16 inch (4.8 mm) clear tempered safety glass.

\*\* NOTE TO SPECIFIER \*\* Select sash assembly. Select sash for each side. The standard sash for HEMCO dual entry fume hoods. The maximum sash opening for the horizontal sash is 1/2 that of the vertical sashes. The smaller opening, means less air exhausted resulting in energy savings. Delete assembly not required.

* + - 1. Sash Assembly: Horizontal Sliding Sash (Standard).
         1. 28 inches (711 mm) sash opening height for ease of access and viewing tall apparatus setup. Sash is tempered safety glass, with chemical resistant non-metallic PVC framing, track, and aerodynamic sash lift (horizontal sash). Sash handle for efficient air flow and ease of movement.
      2. Sash Assembly: Full view, vertical rising.
         1. 28 inches (711 mm) sash opening height for ease of access and viewing tall apparatus setup. Sash is tempered safety glass, with chemical resistant non-metallic PVC framing, track, and aerodynamic sash lift.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete side view window not required. Delete if not required.

* + - 1. Side View Windows: Installed on right or left sides.
         1. Side View Window 16 inches X 20 inches (406 mm X 508 mm).
         2. Side View Window 24 inches X 20 inches (610 mm X 508 mm).

\*\* NOTE TO SPECIFIER \*\* Optional. Delete air flow monitor with repeater if not required.

* + - 1. Air Flow Monitor with Repeater.
         1. Flush mounted air flow Monitor features a back lit display which displays the air flow velocity or air flow status.

\*\* NOTE TO SPECIFIER \*\* Optional. Select work surface option. Delete if not required.

* + 1. Work Surfaces:
       1. Epoxy Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Black.
       2. Phenolic Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Charcoal.

\*\* NOTE TO SPECIFIER \*\* Optional. Select base cabinet. Dual entry fume hoods are available with optional support cabinets. The 30 inches (762 mm) and 36 inches (914 mm) deep models require a standard cabinet with a finished rear panel assembly. 48 inches (1219 mm) deep model requires two cabinets back-to-back plus filler panels allowing cabinet access from both sides. Delete if not required.

* + 1. Base Cabinet: Standard cabinet with a finished rear panel assembly.
    2. Base Cabinet: Two cabinets back-to-back plus filler panels allowing cabinet access from both sides.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. LE FM SERIES FUME HOODS
     1. Basis of Design: UniFlow LE FM Distillation Series by HEMCO Corporation.
     2. Components:
        1. Face Opening: Molded aerodynamic opening with upper and lower airfoils to minimize air flow turbulence and provide a constant volume of air flow.
        2. Baffle System: VaraFlow design with Vector slots:
           1. Material: HiPel composite resin.
           2. Fume hood shall effectively maintain safe, constant exhaust volume at any baffle position.
           3. Constructed of upper, middle, and lower sections.
           4. Positioned such that horizontal and vertical edge slots effectively create near laminar air flow through the fume chamber.
           5. Factory set such that the fume hood is at its optimum performance level.
           6. Lower Baffle: Staggered slotted array.
           7. Rounded edges to raw fumes smoothly through baffle system.
           8. Removable for cleaning.
        3. Exhaust Collar: Integral, bell shaped.
           1. Standard 12 inch round collars.
           2. Same HiPel material as hood structure.
           3. Chemically bonded to the fume chamber ceiling.
        4. Component Fume Chamber: One piece, molded.
           1. Liner: Non-conducting white HiPel, 3/16 inch nominal thickness. Constructed with a modular design allowing hood to be assembled in the field.

Chemical resistant.

Flame resistant. Meets UL 1805 and NFPA 45.

* + - * 1. Smooth finish for ease of cleaning.
        2. Interior Vertical Clearance: 78 inches nominal.
      1. Constant Air Volume (CAV) Model: Automatic air bypass to provide a constant air volume.
         1. When the sashes are closed, upper bypass and lower bypass is drawing 100 percent of the supply air.
         2. As the upper sash is raised, the upper bypass begins to close and is completely closed when the sash reaches the full open position.
      2. Variable Air Volume (VAV) Model: Restricted air bypass:
         1. With a design face velocity set, the air volume changes as the sashes are raised or lowered.
         2. A minimum flow of 25 CFM per square foot of surface is recommended by the NFPA when the sash is closed.
      3. Superstructure and Mold Liner Material: Modular composite construction for total chemical resistance, strength, durability and reduced weight:
         1. Material: HiPel, white thermosetting resin surface layers with fiberglass reinforced composite core, 3/16 inch thick.
         2. Side Walls: 5 inches wide, chemically bonded creating a unitized right and left double wall superstructure.
         3. Materials are tested and classified by U.L. for Class A fire resistant, non-metallic materials used in laboratories.
      4. Fascia Posts: Aerodynamically angled to provide uniform air flow in the fume chamber.
      5. Removable Front Panel: Located above the sash allows access to electrical connections, light bulb change out, sash weights and duct connections.
      6. Exterior Side Panels: Unitized and chemically bonded to form homogeneous one piece superstructure. HiPel resin.
         1. One inch air gap inlet under lower sash to insure uniform air flow at face and to sweep heavier than air vapors off floor.
         2. Upper airfoil provides clean flow of air in upper area of the fume chamber to minimize turbulent air flow through the fume chamber.
      7. Sash Height: 62 inches.
      8. Viewing Height: 68 inches.
      9. Interior Height: 78 inches.
      10. Sash:
          1. Glazing: Clear tempered safety glass.
          2. Counter balanced, connected with coated stainless steel cables.
          3. PVC framing track and aerodynamic sash lift.

\*\* NOTE TO SPECIFIER \*\* Select sash assembly. Horizontal Sliding Sash is only available for 96, 120, and 144 inch wide hoods. Delete assembly options not required.

* + - 1. Sash Assembly: Double Vertical.
      2. Sash Assembly: Horizontal Sliding Sash.
      3. Illumination of Work Area: Area inside the superstructure from side to side, from face of baffle to inside face of sash, and from working surface to a height of 82 inches.
         1. Minimum Illumination: 80 foot candles.
         2. Fixtures: 2 tube LED fixture:

\*\* NOTE TO SPECIFIER \*\* Select fixture size. Delete fixture sizes not required.

48 inch hood: 24 inch.

60 inch hood: 36 inch.

72 inch hood: 48 inch.

96 inch hood: (2) 36 inch.

UL and CSA listed.

Mounted fixture with removable stainless steel light bracket with mirrored finish.

Clear tempered safety glass panel provides vapor-tight barrier and seal to separate the fixture from the hood interior.

\*\* NOTE TO SPECIFIER \*\* Explosion-proof fixtures are optional. Delete options not required.

Explosion-proof fixture: Class I Division II.

Explosion-proof fixture: Class I Division I.

* + 1. Materials:
       1. HiPel Composite: Two white surfaces chemically bonded to a fiberglass reinforced core layer of thermosetting resin. No exposed fiberglass.
          1. Nominal Thickness: 4.5 mm.
          2. Meets or exceeds NFPA 45.

\*\* NOTE TO SPECIFIER \*\* Select glazing option. Delete glazing options not required.

* + - 1. Sash Glass: 3/16 inch clear Tempered Safety Glass per ASTM C 1048.
      2. Sash Glass: 1/4 inch clear Laminated Safety Glass per ASTM C 1172.
      3. Sash Glass: 3/16 inch clear Polycarbonate Safety Glass.
      4. Sash Glass: 1/4 inch clear Polycarbonate Safety Glass.
    1. Fasteners:
       1. Interior Surfaces: PVC-capped No. 8 pan stainless steel screws and nylon bolts.
       2. Exterior Structural Members: No. 8 pan stainless steel screws and nylon bolts.
    2. Work Surfaces:

\*\* NOTE TO SPECIFIER \*\* Select work surface option. Delete options not required.

* + - 1. Epoxy Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Black.
      2. Phenolic Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Charcoal.
      3. 316 Stainless Steel: 6 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.
      4. 304 Stainless Steel: 16 gauge, No. 4 finish, dished construction with marine edge, dished section not less than 1/4 inch thick.

\*\* NOTE TO SPECIFIER \*\* UniFlow LE Dual Entry Air Bypass Hoods are ideal for demonstrations or applications where observation and access is required from both sides of the fume hood. They can be positioned on an island or in peninsular locations. Dual Entry Hoods can be also located on a common wall of two rooms with accessibility from either room. Delete if not required.

* 1. LE DUAL ENTRY SERIES
     1. Basis of Design: LE Dual Entry Series by HEMCO Corporation.
     2. Design: Superstructure to be modular composite chemical resistant FRP non-metal construction. Interior fume chamber to be glass-smooth with bell shaped exhaust collar. Picture frame sash opening constructed of clear tempered safety glass with chemical resistant framing and track. Vapor proof light fixture and control switch are wired to a single point junction box, 115/60Hz, AC. Electrical components are U.L. listed.
     3. Size:

\*\* NOTE TO SPECIFIER \*\* Delete hood depth and width not required.

* + - 1. Hood Depth: 30 inches (762 mm).
      2. Hood Depth: 36 inches (914 mm).
      3. Hood Depth: 48 inches (1219 mm).
      4. Hood Width: 48 inches (1219 mm).
      5. Hood Width: 60 inches (1524 mm).
      6. Hood Width: 72 inches (1829 mm).
      7. Hood Width: 96 inches (2438 mm)
    1. Illumination of Work Area: Area inside the superstructure from side to side, from face of baffle to inside face of sash, and from working surface to a height of 35 inches.
       1. Minimum Illumination: 80 foot candles.
       2. Fixtures: Vapor proof threaded bulb 100 watt fixture:
          1. UL and CSA listed.
          2. Clear glass threaded globe accessed from inside the fume chamber for bulb change out.

\*\* NOTE TO SPECIFIER \*\* Explosion-proof fixtures are optional. Delete options not required.

* + - * 1. Explosion-proof fixture: Class I Division II.
        2. Explosion-proof fixture: Class I Division I.
    1. Components:
       1. Unitized dual wall construction for chemical resistance, strength, and durability. Meets NFPA-45 classification with flame spread of less than 25 per ASTM E-84.
          1. Access Panel: Removable to access ducting connections, plumbing and electrical services from a single point electrical box, 115/60Hz AC operation.
       2. Sash: Picture frame sash:
          1. Glazing: 3/16 inch (4.8 mm) clear tempered safety glass.

\*\* NOTE TO SPECIFIER \*\* Select sash assembly. Select sash for each side. The standard sash for HEMCO dual entry fume hoods. The maximum sash opening for the horizontal sash is 1/2 that of the vertical sashes. The smaller opening, means less air exhausted resulting in energy savings. Delete assembly not required.

* + - 1. Sash Assembly: Horizontal Sliding Sash (Standard).
         1. 28 inches (711 mm) sash opening height for ease of access and viewing tall apparatus setup. Sash is tempered safety glass, with chemical resistant non-metallic PVC framing, track, and aerodynamic sash lift (horizontal sash). Sash handle for efficient air flow and ease of movement.
      2. Sash Assembly: Full view, vertical rising.
         1. 28 inches (711 mm) sash opening height for ease of access and viewing tall apparatus setup. Sash is tempered safety glass, with chemical resistant non-metallic PVC framing, track, and aerodynamic sash lift.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete side view window not required. Delete if not required.

* + - 1. Side View Windows: Installed on right or left sides.
         1. Side View Window 16 inches X 20 inches (406 mm X 508 mm).
         2. Side View Window 24 inches X 20 inches (610 mm X 508 mm).

\*\* NOTE TO SPECIFIER \*\* Optional. Delete air flow monitor with repeater if not required.

* + - 1. Air Flow Monitor with Repeater.
         1. Flush mounted air flow Monitor features a back lit display which displays the air flow velocity or air flow status.

\*\* NOTE TO SPECIFIER \*\* Optional. Select work surface option. Delete if not required.

* + 1. Work Surfaces:
       1. Epoxy Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Black.
       2. Phenolic Resin: 1-1/4 inches thick, molded to contain chemical spillage, dished section not less than 1/4 inch thick. Charcoal.

\*\* NOTE TO SPECIFIER \*\* Optional. Select base cabinet. Dual entry fume hoods are available with optional support cabinets. The 30 inches (762 mm) and 36 inches (914 mm) deep models require a standard cabinet with a finished rear panel assembly. 48 inches (1219 mm) deep model requires two cabinets back-to-back plus filler panels allowing cabinet access from both sides. Delete if not required.

* + 1. Base Cabinet: Standard cabinet with a finished rear panel assembly.
    2. Base Cabinet: Two cabinets back-to-back plus filler panels allowing cabinet access from both sides.

\*\* NOTE TO SPECIFIER \*\* UniFlow Perchloric Acid Fume Hoods feature either a type 316 stainless steel or PVC one-piece fume chamber with integral worksurface and are engineered for the safe handling of perchloric acids in laboratory procedures. Perchloric Acid Hoods are offered include a dedicated wash down and exhaust system. It is recommended to thoroughly wash down fume chamber and exhaust system after each use. Note: Perchloric Acid Hoods are for perchloric acid use only. Delete if not required.

* 1. PERCHLORIC ACID FUME HOODS
     1. Basis of Design: Perchloric Acid Fume Hood Series by HEMCO Corporation.
     2. Design: Seamless fume chamber with integral work surface and drainage trough with baffle and exhaust collar. Hood has built-in wash down system with spray nozzles and piping to front mounted control valve. Picture frame sash opening with counterbalanced clear tempered safety glass sash with chemical resistant PVC framing, track, and aerodynamic sash lift. Explosion-proof light fixture Cat. No. 50034, installed but not wired, 115/230V, 50/60Hz AC. Class I Div II Groups A B C D, Class II Div II Groups. F and G, all electrical components UL listed.
     3. Size:

\*\* NOTE TO SPECIFIER \*\* Delete hood depth and width not required.

* + - 1. Hood Depth: 30 inches (762 mm).
      2. Hood Depth: 36 inches (914 mm).
      3. Hood Width: 48 inches (1219 mm).
      4. Hood Width: 60 inches (1524 mm).
      5. Hood Width: 72 inches (1829 mm).
    1. Components:
       1. Constructed of unitized dual wall construction for superior chemical resistance, strength, and durability. Rear drain trough is integral to superstructure. Dedicated wash down with integral piping spray nozzles and remote control on right column. One-piece interior fume chamber and baffle. Meets NFPA-45 classification with flame spread of less than 25 per ASTM E-84.

\*\* NOTE TO SPECIFIER \*\* Delete material not required.

* + - * 1. Superstructure Material: HiPel composite resin.
        2. Interior Fume Chamber Material: PVC.
        3. Interior Fume Chamber Material: 316 stainless steel.

\*\* NOTE TO SPECIFIER \*\* Delete work surface not required.

* + - 1. Work Surface: Integral PVC work surface.
      2. Work Surface: Integral 316 stainless steel work surface.
      3. Access Panel: Removable to access ducting connections, plumbing and electrical services from a single point electrical box, 115/230V, 50/60Hz AC operation.
      4. Energy efficient explosion proof light fixture with light switch on left column, all factory installed.
      5. Sash: Picture frame sash:
         1. Glazing: 3/16 inch (4.8 mm) clear tempered safety glass.

\*\* NOTE TO SPECIFIER \*\* Fume Hood Face Velocity: Sash in full open position should be for setup of apparatus and maintenance service only. If opening is at 1/2 open at 120 FPM (feet per minute), face velocity at full open would be approximately 60 FPM. The recommended face velocity for perchloric acid fume hood efficiency and safety is 120 FPM. Lower face velocity may compromise user safety.

* + - 1. Sash Assembly: Full view, vertical rising.
         1. 28 inches (711 mm) sash opening height provides ease of access for apparatus set-up in fume chamber. 44 inches (1118 mm) interior working height. Sash is counter balanced, tempered safety glass, coated stainless steel cable with stainless steel pulley assembly. Framed in nonmetallic PVC framing, track, and aerodynamic sash lift for ease of movement and air flow efficiency.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete glass stop if not required.

* + - * 1. Sash Stop: Located at 1/2 open position to reduce air flow 50 percent.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete air flow monitor with repeater if not required.

* + - 1. Air Flow Monitor with Repeater.
         1. Flush mounted air flow Monitor features a back lit display which displays the air flow velocity or air flow status.
    1. Perchloric Acid Exhaust Blowers:
       1. Blowers are constructed of fluoropolymer coated steel, belt driven, includes explosion proof motor, non-sparking wheel, spray wash nozzle and drain in the blower housing. Engineering based on 120 FPM face velocity.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - 1. Provide stainless steel stack outlet with wash down nozzles.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + 1. Base Cabinet: Standard cabinet constructed of furniture grade steel with adjustable shelf and levelers.

\*\* NOTE TO SPECIFIER \*\* UniFlow HDPE Acid Digestion Fume Hoods feature a one-piece fume chamber with integral reinforced work surface, and baffles constructed of High Density Polyethylene. Digestion hoods feature a dedicated wash down and exhaust system. Delete if not required.

* 1. ACID DIGESTION FUME HOODS
     1. Basis of Design: Acid Digestion Fume Hood Series by HEMCO Corporation.
     2. Design: Seamless HDPE fume chamber with integral work surface and drainage trough, all coved corners with baffle and exhaust collar. Hood has built-in wash down system with spray nozzles and piping to front mounted control valve. Picture frame sash opening with counterbalanced clear polycarbonate sash with chemical resistant PVC framing and track and aerodynamic sash lift. Vapor proof LED light fixture and control switch are wired to a single point junction box, 115/60Hz, AC. All electrical components are U.L. listed.
     3. Size:

\*\* NOTE TO SPECIFIER \*\* Delete hood depth and width not required.

* + - 1. Hood Depth: 30 inches (762 mm).
      2. Hood Depth: 36 inches (914 mm).
      3. Hood Depth: 48 inches (1219 mm).
      4. Hood Width: 48 inches (1219 mm).
      5. Hood Width: 60 inches (1524 mm).
      6. Hood Width: 72 inches (1829 mm).
      7. Hood Width: 96 inches (2438 mm)
    1. Components:
       1. Superstructure: HiPel resin exclusive unitized dual wall construction for superior chemical resistance (NO RUST), strength, and durability. Vent outlet is integral to superstructure and is available in HDPE lined hoods..
          1. Access Panel: Removable to access ducting connections, plumbing and electrical services from a single point electrical box, 115/60Hz AC operation.
       2. Fume Chamber and Baffle: Constructed with HDPE liner. The one-piece liner is engineered to resist reactions from corrosive chemicals that don't require high temperatures.
       3. Work Surface: Welded integral to the fume hood superstructure and dished to contain spillage and includes welded in rear drain trough. A sink if indicated and required the work surface would allow the HDPE sink to be welded in.
       4. Access Panel: Removable to access ducting connections and electrical services from a single point electrical box, 115/60Hz AC
       5. Vapor proof LED light fixture and control switch shall be wired to a single point junction box, 115/60Hz, AC. Electrical components are U.L. listed.
       6. Sash: Picture frame sash:
          1. Glazing: 1/4 inch (6 mm) polycarbonate sheet.
       7. Sash Assembly: Full view, vertical rising.
          1. 28 inches (711 mm) sash opening height provides ease of access for apparatus set-up in fume chamber. 44 inches (1118 mm) interior working height. Sash is counter balanced, tempered safety glass, coated stainless steel cable with stainless steel pulley assembly. Framed in nonmetallic PVC framing, track, and aerodynamic sash lift for ease of movement and air flow efficiency.

\*\* NOTE TO SPECIFIER \*\* Sash should only set to full open position for the setup of tall apparatus. Personal safety protection should be worn as recommended by the Lab Safety Officer. Delete sash stop if not required.

* + - 1. Sash Stop: Located at 1/2 open position to reduce air flow 50 percent.
      2. Exhaust Blower: Polypro belt driven, include TEFC motors and a spray wash nozzle and drain in the blower housing.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete wash down and trough if not required.

* + - 1. Wash Down System: Hood shall be equipped with spray nozzles, piping, valve and rear drain trough for rinsing wash down after usage.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete air flow monitor if not required.

* + - 1. Air Flow Monitor:
         1. Continuously monitors face velocity air flow, meets ANSI and OSHA requirements.

\*\* NOTE TO SPECIFIER \*\* Optional. Select base cabinet. Delete if not required.

* + 1. Base Cabinet: Standard cabinet constructed of furniture grade steel with adjustable shelf and levelers.

\*\* NOTE TO SPECIFIER \*\* UniFlow Polypro Trace Metals Fume Hoods are designed for applications where no metal can be present. These hoods feature a totally non-metallic construction. .Delete if not required.

* 1. TRACE METALS FUME HOODS
     1. Basis of Design: Trace Metals Fume Hood Series by HEMCO Corporation.
     2. Design: Welded one piece polypro fume chamber with integral work surface, baffle and exhaust collar. Picture frame sash opening with horizontal sliding with chemical resistant PVC framing and track and aerodynamic sash lift. Vapor-proof light fixture and switch pre-wired to single point PVC junction box, 115/60Hz AC. Electrical components U.L. listed.
     3. Size:

\*\* NOTE TO SPECIFIER \*\* Delete hood depth and width not required.

* + - 1. Hood Depth: 30 inches (762 mm).
      2. Hood Depth: 36 inches (914 mm).
      3. Hood Width: 48 inches (1219 mm).
      4. Hood Width: 60 inches (1524 mm).
      5. Hood Width: 72 inches (1829 mm).
      6. Hood Width: 96 inches (2438 mm)
    1. Components:
       1. Superstructure: Welded one-piece polypropylene fume chamber with integral worksurface with baffle and exhaust collar, creating a chemical resistant, dual wall construction. Meets NFPA 45 requirements for flame spread.
          1. Access Panel: Removable to access ducting connections, plumbing and electrical services from a single point electrical box, 115/60Hz AC operation.
       2. Fume Chamber: Constructed with polypropylene surface is chemical resistant white, glass smooth for ease of cleaning and light reflectivity.
       3. Baffle System: VaraFlow constructed of polypropylene, maintains uniform air flow thru the fume chamber to exhaust collar outlet.
       4. Work Surface: Welded integral to the fume hood superstructure and dished to contain spillage and includes welded in rear drain trough. A sink if indicated and required the work surface would allow the HDPE sink to be welded in.
       5. Access Panel: Removable to access ducting connections and electrical services from a single point electrical box, 115/60Hz AC.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - 1. Vapor proof non-metallic light fixture with light switch on left column, with PVC conduit and junction box.
      2. Sash: Picture frame sash:
         1. Glazing: 3/16 inch (4.8 mm) clear tempered safety glass.

\*\* NOTE TO SPECIFIER \*\* Fume Hood Face Velocity. The Trace Metals Fume Hood incorporates four horizontal sliding sashes on two tracks, the maximum opening is 50 percent, which corresponds to a 50 percent savings in CFM. Should the entire front opening need to be accessed the horizontal sliding panels may be removed for equipment set up.

* + - 1. Sash Assembly: Horizontal Sliding Sash.
         1. 28 inches (711 mm) sash opening height for ease of access and viewing tall apparatus setup. Sash is tempered safety glass, with chemical resistant non-metallic PVC framing, track, and aerodynamic sash lift (horizontal sash). Sash handle for efficient air flow and ease of movement.

\*\* NOTE TO SPECIFIER \*\* Fume Hood Face Velocity. The recommended face velocity for efficiency and safety is 100 FPM. Lower face velocity may compromise user safety.

* + - 1. Trace Metals Exhaust Blower: High efficiency impellers produce low power consumption, reduced operating costs and quiet operation. 20 forward curved blades in fire retardant polypropylene. Non-static and oil resistant V-belt, cast iron pulleys, adjustable pulleys available, adjustment for tensioning and belt replacement. Chemical resistant for hostile or hazardous environments .115V single phase or three phase.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete air flow monitor if not required.

* + - 1. Air Flow Monitor:
         1. Continuously monitors face velocity air flow, meets ANSI and OSHA requirements.

\*\* NOTE TO SPECIFIER \*\* Optional. Select base cabinet. Delete if not required.

* + 1. Base Cabinet: Standard cabinet.
       1. Base Cabinets constructed of chemical resistant polypropylene with welded seams and overlapping doors.
       2. Cabinets equipped with a lower lip to contain chemical spills.

\*\* NOTE TO SPECIFIER \*\* UniFlow Radioisotope Fume Hoods with interior fume chamber is constructed of welded type 304 stainless steel to prevent absorption of radioactive and corrosive materials. Stainless steel baffle is removable for ease of cleaning. Work surface is welded integral to the fume chamber and reinforced to support heavy isotope shielding materials. Delete if not required.

* 1. RADIOISOTOPE FUME HOODS.
     1. Basis of Design: Radioisotope Fume Hood Series by HEMCO Corporation.
     2. Design: Seamless type 304 stainless steel fume chamber with integral work surface all coved corners with baffle and exhaust collar. Picture frame sash opening with counterbalanced clear tempered safety glass sash with chemical resistant stainless steel framing, track, and aerodynamic sash lift. Vapor proof LED light fixture and control switch are wired to a single point junction box, 115/60Hz, AC All electrical components are U.L. listed.
     3. Size:

\*\* NOTE TO SPECIFIER \*\* Delete hood width not required.

* + - 1. Hood Depth: 30 inches (762 mm).
      2. Hood Width: 48 inches (1219 mm).
      3. Hood Width: 60 inches (1524 mm).
      4. Hood Width: 72 inches (1829 mm).
    1. Components:
       1. Superstructure: non-metallic FRP composite construction for total chemical resistance, superior durability and long life. Interior fume chamber to be glass-smooth with VaraFlow baffle system and bell shaped exhaust collar. Meets NFPA 45 requirements for flame spread.
          1. Air foil and work surface shall be constructed of type 304 stainless steel.
          2. Access Panel: Removable to access ducting connections, plumbing and electrical services from a single point electrical box, 115/60Hz AC operation.
       2. Fume Chamber: Constructed 304 stainless steel, No. 4 satin finish.
       3. Baffle System: VaraFlow constructed of Type 304 stainless steel, maintains uniform air flow thru the fume chamber to exhaust collar outlet.
       4. Work Surface: Welded integral to the fume hood superstructure and dished to contain spillage.
       5. Access Panel: Removable to access ducting connections and electrical services from a single point electrical box, 115/60Hz AC.
       6. Sash: Picture frame sash:
          1. Glazing: 3/16 inch (4.8 mm) clear tempered safety glass.
       7. Sash Assembly: Full view, vertical rising.
          1. 28 inches (711 mm) sash opening height provides ease of access for apparatus set-up in fume chamber. 44 inches (1118 mm) interior working height. Sash is counter balanced, tempered safety glass, coated stainless steel cable with stainless steel pulley assembly. Framed in Type 304 stainless steel framing, track, and aerodynamic sash lift for ease of movement and air flow efficiency.

\*\* NOTE TO SPECIFIER \*\* Fume Hood Face Velocity. The recommended face velocity for efficiency and safety is 80-100 FPM. Lower face velocity may compromise user safety. Sash in full open position should be for setup of apparatus and maintenance service only. Design opening is at 1/2 open at 100 FPM (feet per minute), face velocity at full open would be approximately 50 FPM.

* + - 1. Radioisotope Exhaust Blower: V-belt drive stainless steel blower with adjustable shelves, thermal overload protection, and weather cover. The design is based on 100 FPM face velocity.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete if not required.

* + - 1. HEPA Filter Bag-In/Bag-Out Filter: Contained within a type 304 stainless steel housing with bag-in/bag-out attachment and pre-filter. HEPA is 99.99 percent efficient and the pre-filter is 30 percent efficient. Filter is rated at 1000 CFM. One filter required for 48 inches (1219 mm) and 60 inches (1524 mm) hoods; 2 filters required for 72 inches (1829 mm) hoods.

\*\* NOTE TO SPECIFIER \*\* Advise factory of specific contaminant and volume so proper carbon can be supplied. Delete if not required.

* + - 1. Carbon Filter Bag-In/Bag-Out Filter: Contained within a type 304 stainless steel housing with bag in, bag out attachment and pre-filter. Filter rated at 1000 CFM. One filter required for 48 inches (1219 mm) and 60 inches (1524 mm) hoods; 2 filters required for 72 inches (1829 mm) hoods.

\*\* NOTE TO SPECIFIER \*\* Optional. Delete air flow monitor if not required.

* + - 1. Air Flow Monitor: Continuously monitors face velocity air flow, meets ANSI and OSHA requirements.

\*\* NOTE TO SPECIFIER \*\* Optional. Select base cabinet. Delete if not required.

* + 1. Base Cabinet: Standard cabinet constructed of furniture grade steel with adjustable shelf and levelers.

\*\* NOTE TO SPECIFIER \*\* The unique modular construction of UniMax floor mounted hoods features 2 inch thick walls that have chemical resistant composite resin or stainless steel surface panels. This also allows the hood to ship knockdown and be moved through standard lab entry doors. Delete if not required.

* 1. MODULAR FUME HOODS
     1. Basis of Design: UniMax Fume Hood Series by HEMCO Corporation.
     2. Design: Floor mounted, modular, walk-in fume hood.
     3. Size:

\*\* NOTE TO SPECIFIER \*\* Delete size options not required.

* + - 1. Unit Width: 6 feet (1829 mm).
      2. Unit Width: 8 feet (2438 mm).
      3. Unit Width: 10 feet (3048 mm).
      4. Unit Width: 12 feet (3658 mm).
      5. Unit Width: 16 feet (4877 mm).
      6. Unit Width: 20 feet (6096 mm).
      7. Unit Width: 24 feet (7315 mm).
      8. Unit Depth: 48 inches (1219 mm) outside, 42 inches (1067 mm) inside.
      9. Unit Depth: 72 inches (1829 mm) outside, 66 inches (1676 mm) inside.
      10. Unit Depth: 96 inches (2438 mm) outside, 90 inches (2286 mm) inside.
      11. Unit Height: 8 feet (2438 mm).
      12. Unit Height: 10 feet (3048 mm).
      13. Unit Height: 12 feet (3658 mm).
    1. Components:
       1. Wall Panels: 2 inches (51 mm) thick.

\*\* NOTE TO SPECIFIER \*\* Select surface panel material required. Delete option not required.

* + - * 1. Surface Panel: Chemical and fire resistant composite resin.
        2. Surface Panel: Stainless steel.

\*\* NOTE TO SPECIFIER \*\* Select lighting required. Delete options not required.

* + - 1. Lighting: Vapor proof fluorescent.
      2. Lighting: Vapor proof LED.
      3. Lighting: Explosion proof, Class I, Div I.
      4. Lighting: Explosion proof, Class I, Div II.

\*\* NOTE TO SPECIFIER \*\* Select electrical service option required. Delete option not required.

* + - 1. Electrical Service: 115V.
      2. Electrical Service: 220V.

\*\* NOTE TO SPECIFIER \*\* Select door option required. Delete options not required.

* + - 1. Door Type: FG, Framed glass door with overhead suspension.
      2. Door Type: FS, Framed glass door with floor sliding track.
      3. Door Type: SC, Strip curtains.

\*\* NOTE TO SPECIFIER \*\* Select floor surface option required. Delete options not required.

* + - 1. Floor Surface: ER-WS, Epoxy resin.
      2. Floor Surface: PR-WS, Phenolic resin.
      3. Floor Surface: SS-304, Stainless steel.
      4. Floor Surface: HazMax containment basin.

\*\* NOTE TO SPECIFIER \*\* Select distillation apparatus grid option required. Delete options not required.

* + - 1. Distillation Apparatus Grids: Aluminum rod assembly.
      2. Distillation Apparatus Grids: Stainless steel assembly.
      3. Distillation Apparatus Grids: Aluminum rod assembly.
      4. Exhaust Blowers: Sized to meet required application.
      5. Fume Scrubbers and Filtration: Provide excellent air pollution control for water soluble fumes and odors.

\*\* NOTE TO SPECIFIER \*\* Below components are optional. Delete options not required.

* + - 1. HEPA Filter Bag-In/Bag-Out Filter: Contained within a type 304 stainless steel housing with bag-in/bag-out attachment and pre-filter. HEPA is 99.99 percent efficient and the pre-filter is 30 percent efficient. Filter is rated at 1000 CFM. One filter required for 48 inches (1219 mm) and 60 inches (1524 mm) hoods; 2 filters required for 72 inches (1829 mm) hoods.

\*\* NOTE TO SPECIFIER \*\* UniMax hoods can be factory assembled or assembled on site. Delete option not required.

* + 1. Assembly: Field assembled.
    2. Assembly: Factory assembled.

\*\* NOTE TO SPECIFIER \*\* Designed to protect personnel from potentially hazardous fumes, vapors and odors. The enclosure can connect to in-house exhaust system or a dedicated exhaust blower, to provide the internal negative pressure needed to safely remove hazardous fumes from the work area. Air supply into the enclosure is supplied from the surrounding lab environment. Delete if not required.

* 1. VENTED ENCLOSURES

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* + 1. Basis of Design: EnviroMax Vented Enclosures by HEMCO Corporation.
       1. Size:

\*\* NOTE TO SPECIFIER \*\* Delete size options not required.

* + - * 1. Unit Width: 48 inches (1219 mm).
        2. Unit Width: 60 inches (1624 mm).
        3. Unit Width: 72 inches (1829 mm).
        4. Unit Width: 96 inches (2438 mm).
        5. Unit Width: 120 inches (3048 mm).
        6. Unit Width: 144 inches (3658 mm).
        7. Unit Width: \_\_\_\_\_.
        8. Unit Depth: 30 inches (762 mm).
        9. Unit Depth: 36 inches (914 mm).
        10. Unit Depth: 48 inches (1219 mm).
        11. Unit Depth: 60 inches (1624 mm).
        12. Unit Depth: \_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* 48 inch height is standard for non-HEPA models. 60 inch height is standard for HEPA models. Delete options not required.

* + - * 1. Unit Height: 48 inches (1219 mm).
        2. Unit Height: 60 inches (1624 mm).
        3. Unit Height: \_\_\_\_\_.
      1. Components:
         1. Superstructure: Welded steel framework with chemical resistant white powder coated finish.

\*\* NOTE TO SPECIFIER \*\* Select wall material required. Delete option not required.

* + - * 1. Side and Rear Walls: Clear acrylic.
        2. Side and Rear Walls: Tempered glass.

\*\* NOTE TO SPECIFIER \*\* Select sash option required. Delete options not required.

* + - * 1. Front Sash: Horizontal sliding shatter-proof clear viewing panels, 4 panels on 2 tracks to allow access at any position.
        2. Front Sash: Hinged sash, vertical rising.
        3. Front Sash: Hinged sash, horizontal opening.
        4. Front Sash: Counter balanced vertical sash.

\*\* NOTE TO SPECIFIER \*\* Select access option required. Delete options not required.

* + - * 1. Access: As indicated on Drawings.
        2. Access: Front only.
        3. Access: \_\_\_\_\_.
        4. Ceiling: Clear tempered safety glass, slotted ceiling baffle.

\*\* NOTE TO SPECIFIER \*\* Select lighting required. Delete options not required.

* + - * 1. Lighting: Vapor proof fluorescent.
        2. Lighting: Vapor proof LED.
        3. Lighting: Explosion proof, Class I, Div I.
        4. Lighting: Explosion proof, Class I, Div II.

\*\* NOTE TO SPECIFIER \*\* HEPA filter system is optional. Delete if not required.

* + - * 1. HEPA Filters: Ceiling mounted in enclosure and designed to maintain a minimum of class 100 environment. Module with integral fan, prefilter, and speed control.
      1. Bench:

\*\* NOTE TO SPECIFIER \*\* Select worksurface material required. Delete option not required.

* + - * 1. Worksurface: Epoxy resin, 1 inch (25 mm) thick.
        2. Worksurface: Phenolic resin, 1 inch (25 mm) thick.
        3. Worksurface: Plastic laminate, 1-1/2 inch (38 mm) thick.
        4. Worksurface: Stainless steel.
        5. Worksurface: Optical breadboard.

\*\* NOTE TO SPECIFIER \*\* Delete size options not required.

* + - * 1. Width: 48 inches (1219 mm).
        2. Width: 60 inches (1624 mm).
        3. Width: 72 inches (1829 mm).
        4. Width: 96 inches (2438 mm).
        5. Width: \_\_\_\_\_.
        6. Depth: 30 inches (762 mm).
        7. Depth: 36 inches (914 mm).
        8. Depth: \_\_\_\_\_.
        9. Height: Adjustable, 28 to 34 inches (711 to 864 mm).
        10. Legs: Telescoping 2 inch (51 mm) square steel, color: Lab White.

\*\* NOTE TO SPECIFIER \*\* Shelf is optional. Delete if not required.

* + - * 1. Shelf: Lower shelf.

\*\* NOTE TO SPECIFIER \*\* Casters are optional. Delete options not required.

* + - * 1. Casters: Standard swivel locking casters.
        2. Casters: Roll and set casters.

\*\* NOTE TO SPECIFIER \*\* Containment Control Systems provide enclosures for safe dispensing of powders to meet COSSH and GPM requirements. The C.C.S. can be designed to eliminate potential hazardous vapors or particulate where recirculation is not an option. Delete if not required.

* + 1. Basis of Design: Containment Control Systems by HEMCO Corporation.
       1. Designed to eliminate potentially hazardous vapors or particulate in a non-recirculation exhaust system.

\*\* NOTE TO SPECIFIER \*\* Delete size options not required.

* + - 1. Size: 6 x 4 feet (1829 x 1219 mm).
      2. Size: 6 x 6 feet (1829 x 1829 mm).
      3. Size: 8 x 4 feet (2438 x 1219 mm).
      4. Size: 8 x 6 feet (2438 x 1829 mm).
      5. Size: \_\_\_\_\_.
      6. Components:
         1. Superstructure: Welded steel framework with chemical resistant white powder coated finish.

\*\* NOTE TO SPECIFIER \*\* Select wall material required. Delete option not required.

* + - * 1. Side and Rear Walls: Solid wall panel, 2 inch (51 mm) thick with foam core and faced on both sides with chemical and fire resistant composite resin.
        2. Side and Rear Walls: Clear acrylic.
        3. Side and Rear Walls: Tempered glass.
        4. HEPA Filters: HEPA filtered air supply and exhaust air.
        5. Curtain: Clear vinyl strip curtain, with air gap at bottom.
        6. Extraction Fans: Automatically controlled to ensure near constant air flow.

\*\* NOTE TO SPECIFIER \*\* Select lighting required. Delete options not required.

* + - * 1. Lighting: Vapor proof fluorescent.
        2. Lighting: Vapor proof LED.
        3. Lighting: Explosion proof, Class I, Div I.
        4. Lighting: Explosion proof, Class I, Div II.

\*\* NOTE TO SPECIFIER \*\* EnviroMax enclosures can be factory assembled or assembled on site. Delete option not required.

* + 1. Assembly: Unitized, pre-assembled.
    2. Assembly: Modular, site assembled.

\*\* NOTE TO SPECIFIER \*\* Gauges are optional. Delete options not required.

* + 1. Gauge: Minihelic gauge.
    2. Gauge: Magnehelic gauge.
    3. Gauge: Mini photohelic gauge.
    4. Gauge: Digihelic gauge.

\*\* NOTE TO SPECIFIER \*\* Delete if not required.

* 1. ACCESSORIES
     1. Service Fittings and Fixtures: Manufactured by the Water Saver Fixture Company or approved equal.
        1. Indicate proper service using color coding, as follows:

\*\* NOTE TO SPECIFIER \*\* Delete services not required.

* + - * 1. Carbon Dioxide (CO2): Pink.
        2. Gas (GAS): Blue.
        3. Distilled Water (DS): White.
        4. Air (AIR): Orange.
        5. Hydrogen (HYD): Pink.
        6. Vacuum (VAC): Yellow.
        7. Nitrogen (NIT): Brown.
        8. Steam (STM): Black.
        9. Oxygen (OXY): Light Green.
        10. Cold Water (CW): Green.
        11. Hot Water (HW): Red.
        12. Deionized Water (DI): White.
        13. \_\_\_\_\_\_\_.
      1. Finish of Service Fittings Inside the Hood: Epoxy finish, color coded to service index color.

\*\* NOTE TO SPECIFIER \*\* Select handle finish. Delete finish not required.

* + - 1. Handle Finish: White nylon handle and guide flange with a full-view screw-on colored index button.
      2. Handle Finish: Forged brass handle with a full-view screw-on colored index button.
    1. Electrical Services:
       1. All electrical receptacles, duplexes, and switches prewired to a single junction box for electrical connection.

\*\* NOTE TO SPECIFIER \*\* Select receptacle option. Delete receptacles not required.

* + - * 1. Receptacles: 3-wire, 15 amp duplex, 115 VAC.
        2. Receptacles: 3-wire, 20 amp duplex, 115 VAC.
        3. Receptacles: 3-wire, 15 amp duplex, 230 VAC.
        4. Receptacles: 3-wire, 20 amp duplex, 230 VAC.
        5. Receptacles: \_\_\_\_\_.

\*\* NOTE TO SPECIFIER \*\* Select light switch option. Delete light switches not required.

* + - * 1. Light Switch: 3-wire, polarized grounded, 15 amp, 125 VAC.
        2. Light Switch: \_\_\_\_\_.
        3. Plates: Nylon.
        4. UL and CSA listed.
    1. Plumbing Services:
       1. Conforms to ANSI Z21.15.

\*\* NOTE TO SPECIFIER \*\* Delete materials required.

* + - 1. Epoxy Resin Sink: Laboratory sink made of chemical and corrosion resistant epoxy resin. Drop-in sink. Includes sink stopper and drain outlet.
         1. Location: \_\_\_\_\_.
      2. Polypropylene Sink: Laboratory sink made of chemical resistant heavy duty polypropylene. Drop-in sink. Includes drain outlet.
         1. Location: \_\_\_\_\_.
      3. Polypropylene Sink: Laboratory sink made of one-piece, type 304 stainless steel and polished to a No. 4 satin finish. Drop-in sink. Sound deadened to reduce drumming. Includes drain outlet.
         1. Location: \_\_\_\_\_.
      4. Cup Sink, 6 inch diameter: Polyolefin cup sink with 1-1/2 inch IPS tailpiece and outlet strainer.
      5. Oval Cup Sink, 3 x 6 inches: Polyolefin drop-in cup sink with 1-1/2 inch IPS tailpiece and outlet strainer.
      6. Oval Cup Sink, 3 x 9 inches: Polyolefin drop-in cup sink with 1-1/2 inch IPS tailpiece and outlet strainer.
      7. Oval Wall Cup Sink, 3 x 6 inches: Polyolefin cup sink with 1-1/2 inch IPS tailpiece and outlet strainer.
      8. Jar P Trap: Includes adjustable 1-1/2 inch IPS tailpiece and removable jar.
      9. P Trap: Polypropylene with 1-1/2 inch IPS tailpiece.
    1. Instruction Plate: Corrosion resistant or plastic plate attached to the fume hood exterior with condensed information covering recommended locations for apparatus and accessories, use of sash, and recommended safe operation procedures.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. INSTALLATION
      1. Clean surfaces thoroughly prior to installation.
      2. Install in accordance with manufacturer's instructions, approved submittals and in proper relationship with adjacent construction. Secure work surfaces to casework securely. Test for proper operation and adjust until proper operation is achieved.
   3. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION