Symphony II Adaptable Table System

1.00 General

1.01 Conditions

1.02 Scope of work

1. This section covers all materials, equipment, tools and labor for the supply and installation of the laboratory **Symphony II Adaptable Table System** and all required accessories, as shown on drawings and as specified below.

2. **Work includes:**

    a. Table system
    b. Ceiling service panels
    c. Suspended and mobile cabinets
    d. Counter tops, backsplashes and shelves
    e. Plumbing fixtures
    f. Electrical and data raceways
    g. Shelving

3. **Work excludes:**
    a. All mechanical and electrical connections above ceiling to the ceiling service panels

1.03 References

1. **SEFA 8-1999** – Recommended Practices for Laboratory Grade Casework
2. **UL 962 Certification**

1.04 Shop Drawings

1. Shop drawings shall include
    a. Locations of all tables on plans and elevations
    b. Details of table construction and dimensions

c. Locations of integrated plumbing service fittings and electrical outlets to be supplied with the **Symphony II Adaptable Table System**
d. Location of mobile or suspended cabinets
e. Locations of all ceiling panels in the suspended ceiling grid plan

1.05 Qualifications

1. These specifications are based on **Bedcolab** products and shall be used as the minimum quality requirements.

2. The Lab Casework Manufacturer must be a recognized laboratory furniture manufacturer with a minimum of five (5) years experience in the industry. They shall have an **ISO-9001 Accreditation.** Their products must meet all recommended practices of the **Scientific Equipment & Furniture Association (SEFA).**

3. The contractor must demonstrate and prove their ability to produce and install projects of similar sizes and scope.

4. The table system must have the **UL 962 Certification** applicable to all system components including the table structure, shelving, plumbing service fittings, electrical services and all required pre-piping and pre-wiring.

5. All Lab Casework Manufacturers must obtain pre-qualification from the architect prior to bid based on Section 1.05. In addition, the Contractor will be required to supply the following:

    a. Typical double-sided table
    b. Product catalogue
    c. ISO- 9001-2000 Certificate
    d. UL962 Certificate

1.06 Warranty

1. The Lab Casework Manufacturer must certify in writing that all components of the laboratory furniture system included in this section are guaranteed for a period of three (3) years starting at the completion of the installation.

2. The Guaranty Document and a Maintenance Manual must be delivered to the owner within fifteen (15) days following the completion of the installation.

1.07 Product Handling

1. The Manufacturer must provide proper packaging of the products in order to ensure the integrity of the products up to the final destination.

2. The minimum packaging must correspond to the following:
    a. Each cabinet must be plastic wrapped and fixed to a wood pallet.
    b. Cabinets may be stacked at a maximum of two cabinets high.
    c. Each assembly covered with cardboard and plastic wrapped.
    d. All counter tops must be protected with cardboard after their installation and until final inspection of this work

2.0 PRODUCTS

2.01 Materials - Generalities

1. Commercial quality cold-rolled steel sheets as per **ASTM A366-85**, Class 1

2. Stainless steel sheets, Type 316 with # 4 satin finishes, as per **ASTM A167-96**

2.02 Symphony II Adaptable Table Construction

1. The table consists of 4-leg table that can be installed back to back and fixed together to become a double-sided assembly or as single-sided assemblies. The following options can be added to the system:
    a. Top removable Distribution Center with integration of plumbing, electrical and data services.
    b. Top removable Reagent Rack Distribution Center with integration of plumbing, electrical and data services.
    c. Top Single Service Upright with integration of electrical services.
    d. Top Single Service Upright with integration of electrical and data services.
    e. Top Single Service Upright with integration of up to four plumbing services
    f. Free standing support that can hold either the Distribution center or the reagent rack distribution center.
    g. 4-leg adjustable hydraulic tables in lieu of regular table
    h. Ceiling service panels
    i. Various types of counter top surfaces
    j. Painted steel adjustable shelving
    k. Integrated plumbing services with rigid pre-piping inside the distribution center or the reagent rack distribution center with top connections to flexible hoses and quick disconnect fittings.

l. Electrical/data raceways and outlets installed inside the distribution center or the reagent rack distribution center pre-wired to the top of the unit with cords and plugs for connection to the Ceiling service panels.
m. Mobile, suspended or floor mounted cabinets under the tables.

2. **Lower table section:**

a. Under counter table is constructed of an 11-gauge channel structure welded to two 14-gauge – 2" diameter tube front legs with 1.3/4" inner 14-gauge telescoping bottom part for height adjustment. Both legs are equipped with a 3/8" by sixteen (16) NC by 3 ½" leveller with non-marring floor glides.

b. The adjustable front legs are adjustable from 30" to 36" including the one (1) inch work surface and are capable of vertical adjustment in two (2) inch increments. Table is supplied with the proper front and back rails to support the Opus suspended cabinets. Two back legs 2" x 2 1/2" are mechanically attached to the structure to form a solid assembly.

c. Two table assemblies can be fixed together back to back to forms a complete double-sided assembly designed to fit the top distribution center or the reagent rack distribution center or the single service upright.

d. For anti-seismic requirements, a bolting device attached to the core structure levellers can be added to secure the table frame to the floor.

e. Work surface frames are designed to support optional Suspended Cabinets**.** ***Bedcolab*** suspended door or drawer cabinets are of the same construction as ***Bedcolab Forte*** cabinets, without toe kicks and supplied with a finished top and a finished back. All cabinets can be installed at any position between the table-legs. The cabinets can be added, moved laterally or be re-positioned without the use of tools or the need of installers

f. Suspended cabinet locking device

i. All suspended cabinet steel painted finished top will be equipped, on the front center with a **Security Bolt # GBOLTM-8X100U** from Selby Hardware, five-sixteenth (5/16) inch in diameter and four (4) inches in length
ii. The bolt will be fixed through a one-eighth inch (1/8") reinforced plate welded to the cabinet's top panel and, once secured, will not allow the

cabinet to be removed from the structural support rails while maintaining the ability to be moved laterally

iii. The locking device can be removed at anytime, without the necessity of tools, allowing the relocation of the cabinet elsewhere on the system

3. Top removable Service Distribution Center options:

a. The 48" high structure top Distribution Center consists of two (2) uprights connected with an upper and a lower horizontal 14-gauge cross rail and channel to form a complete rigid unit that can be installed over single or double-sided tables. One upright houses the required pre-piped plumbing fixtures and data cables. The other upright integrates the electrical wiring of the raceways and the outlets located directly on the upright below the work surface. Both uprights offer full access to the interior with an easy removable full-height access panel. The uprights are slotted to fit adjustable shelving on both sides of the structure. The top distribution center is mechanically fixed into the base table back legs to form a solid assembly.

b. The 18" high structure top Reagent Rack Distribution Center consists of two (2) uprights connected with an upper horizontal 14-gauge cross rail and channel to form a complete rigid unit that can be installed over single or double-sided tables. One upright houses the required pre-piped plumbing fixtures and data cables. The other upright integrates the electrical wiring of the raceways and the outlets located directly on the upright below the work surface. Both uprights offer full access to the interior with an easy removable full-height access panel. The uprights are slotted to fit adjustable shelving on both sides of the structure. The top distribution center is mechanically fixed into the base table back legs to form a solid assembly.

c. The 48" high top Single Service Upright can be installed over single or double-sided tables. The upright integrates the electrical wiring of the outlets located on the upright. It is supplied with an easy removable full-height access panel.

d. The Distribution Center uprights and the additional center upright for the sixty (60) inch, seventy-two (72) inch, eighty-four (84) inch and ninety-six (96) inch long tables are pre-punched to accommodate split shelving with one (1) inch vertical increments starting at nominal fifty-five (55) inches above the floor to top of upright.

e. The Reagent Rack Center uprights are pre-punched to accommodate one shelf on both sides of the structure.

f. The Single Service Upright cannot accommodate any shelving.

g. All uprights are fabricated from 11-gauge, cold-rolled steel, two (2) inch by five (5) inch exterior dimensions, oval formed tubing equipped with the required hardware to be mechanically fixed to the base tables.

4. **Shelving**
   a. Unless otherwise specified, all shelves are of double pan type, made of 18-gauge painted cold-rolled steel, and supplied with a welded two (2) inch high back rail that acts as a backstop
   b. All bookend shelf supports are 14-gauge painted cold rolled steel.

5. **Plumbing Fixtures**

   a. One of the service uprights has the option to house up to four (4) plumbing services positioned between the work surface and the lower structural cross rail. Each service is clearly identified using color and mechanical coding.

   b. Plumbing lines within the table shall be nine thirty-second inch (9/32") ID for both single and double outlets using stainless steel Type 316 tubing lines.

   c. Each service connection is made between the uprights with a Staubli RBE keyed and double valve quick disconnect and the ceiling panel mounted RBE quick disconnect using a five sixteenths inch (5/16") ID flexible polyurethane coil hose.

   d. The coil hose is equipped with a stainless steel RBE keyed quick disconnect fixture. The coil hose is available in white or colors to match the service color code. All RBE sockets and plugs are color and mechanically coded.

   e. The RBE plugs of the coil hoses connect to the ceiling panel mounted RBE socket while the RBE socket of the coil hose connects to the RBE plug of the service upright.

   f. Double valves on RBE plugs and sockets require no manual shutoff.

6. **Electrical Raceways**

   a. A painted steel raceway is installed on the full width of the table core under the lower structural cross rail of the Distribution Center or the Reagent Rack Center.

   b. Each raceway will have two (2) – 20 AMP hospital grade duplex receptacles per table side for tables in width varying from forty-two (42) inches, forty-eight (48) inches and sixty (60) inches. Three (3) 20-AMP hospital grade duplex receptacles

per table side for tables of width varying from seventy-two (72) inches, eighty-four (84) inches and ninety-six (96) inches.

c. One (1) additional 20-AMP duplex receptacle is located in one of the back table leg under the work surface.

d. Each raceway can house up to a maximum of eight (8) - T6 data connections.

e. Wiring of the 20-AMP duplexes is in one upright with plumbing and data cables in the opposite upright support.

7. **Service Connections**

a. All power services of each side of the tables shall have either a 20-AMP twist lock plug with a cord extension above the top of the upright or multi-pin plugs for double sided tables with a maximum of three (3) circuits on the same plug.

b. The outlet located on the upright under the work surface shall be connected with one of the raceway side

c. Data line shall have a male plug extending above the upright.

8. 2.03 Ceiling Service Panel

a. Ceiling panels made of 16-gauge painted cold-rolled steel are designed to house the required plumbing, electrical and data female connections. They are designed in sizes to fit the ceiling grid as per architectural requirements and to be independently secured to the building structure.

b. The ceiling service panel shall integrate all required female connectors to fit the **Symphony II Adaptable Table System** plumbing, electrical and data services. Final connection to the ceiling service panels shall be the responsibility of the Mechanical subcontractors.

c. Gas services outlets shall be keyed quick-disconnect inlet plugs. Keyed quick disconnects shall be compatible with the specified gas service hose as specified.

d. Electrical devices shall be provided with a twist lock preventing plugs from becoming loose.

e. Tele/Data devices shall be provided as indicated on drawings

2.04 Load Rating

1. The table shall be designed and tested to meet or exceed **SEFA 8 Standards**. The table shall also be tested to **UL 962 Standards** to **4 times** the following claimed load capacity.
    a. Work Surface: one hundred twenty-five (125) pounds per linear foot to a maximum of seven hundred fifty (750) pounds.

    b. Shelves: forty (40) pounds per linear foot to a maximum total weight of four hundred fifty (450) pounds per table

2.05 Symphony II Adaptable Table System and Ceiling Service Panel Finish

1. When fabrication of unit is completed, all surfaces shall be free of scratches, spot weld marks or material imperfections. Welds will be ground smooth where necessary. The unit will be washed using a three stage iron phosphate process for proper surface preparation, and subsequently dried in a dry off oven to remove all traces of humidity.

2. A high quality chemical resistant polyurethane paint will then be applied to all surfaces using an electrostatic spray process. The parts will pass through a baking oven for duration and at a temperature as recommended by the paint manufacturer. Painted surfaces will conform to A.A.M.A. 2603.

3. The painted surfaces will meet or exceed the SEFA 8 specification for chemical resistance as specified by the "Scientific Equipment and Furniture Association" and will contribute to LEED credits

4. **Technical Performance :**

    a. Adhesion to substrate: 100% 5B (ASTM D3359)
    b. Hardness: 3H (ASTM D3363)
    c. Gloss: 60 +/- 5 units on 60°
    d. Flexibility: ¼'' Conical Mandrel (ASTM D522)
    e. Impact resistance: 100 in-lb direct: 100 in-lb reverse (ASTM D2794)
    f. Corrosion resistance: 1000 hrs less 1/16'' in creepage over B-1000 treated test panels (ASTM B117)
    g. Humidity resistances: 1000 hrs no blistering over B-1000 treated test panels (ASTM D2247)

5. **Colors**: Twenty colors are available as per the ***Bedcolab*** color chart.