Optima•Stantron

An **Elma** Company

VERTICAL CABINET ENCLOSURES

- Industrial, EMC Shielded
- Seismic, Mil-Rugged, Harsh Environment

CONSOLES / DESKS

- Command, Mil-Rugged Consoles
- Electronic Desk Systems
- Modular Desk Systems

DESKTOP / WALLMOUNT ENCLOSURES

www.optimastantron.com • (770) 496-4000

Optima Stantron provided a solution taht protects sensitive testing electronics being used in a mobile, rugged environment.

DIAGNOSTIC/TEST SET SYSTEM

- ❑ Rugged electronic testing platform
- ❑ EMI protection
- ❑ Heavy duty construction for harsh environments
- ❑ Dual bay capability for complete diagnostic setup

Optima Stantron

Optima Stantron is the cabinet division of Elma Electronic Inc. The company designs and manufactures custom and standard vertical cabinets, racks, consoles and desks, desktop/portable cases and wallmount enclosures to house electronic equipment. Highly modular, aluminum extrusion based enclosures are offered under the Optima name, where steel framed cabinets mostly for broadcast and data applications are sold under the brand name of Stantron.

Optima Stantron combines a wealth of versatile accessory options with EMC, rugged/seismic, cooling, and power considerations. The company offers a fast, flexible response to customer needs and extensive practical knowledge in designing solutions to specific applications.

Optima Stantron History

- 1962   Optima spun out from Scientific Atlanta
- 1966   RA/RC range of vertical cabinets introduced
- 1981   Instrumate range introduced
- 1987   SA/SC range EMC cabinets introduced
- 1994   Gained ISO 9001 recognition
- 1995   Introduced M1/M2 seismic (NEBS GR-63-CORE) cabinets
- 2004   Optima EPS acquired by Elma Electronic, Inc.
- 2008   M Series passes MIL-STD 810F and MIL-STD 901-D, class B
- 2010   Moved to a new state of the art manufacturing facility
- 2011   MS Series passes MIL-STD 461D, EMC testing
- 2012   Acquisition of Stantron and APW Mayville cabinets
- 2013   Company renamed Optima Stantron
- 2014   M Series achieves AREMA and CENELEC Railway certification

About Elma Electronic

Elma Electronic Inc. is a leading manufacturer of enclosures, cases, cabinets, and backplanes, and a supplier and designer of application-ready boards, complex computing sub-systems and rugged COTS platforms.

Elma's component products offer a wide selection of top quality extrusions, switches, knobs and LED arrays. The company has been a worldwide supplier of dependable, high performance products since 1960. The company operates four facilities in the continental United States, with global locations in Switzerland, Germany, France, the United Kingdom, Romania, Israel, Singapore and China.

WHY CHOOSE OPTIMA STANTRON?

Flexibility | Fast adaptation to customer needs - solutions from initial concept to volume production.

Modularity | Tailored solutions for individual applications based on standard, proven designs. This reduces the customer's time requirement, costs and risks.

Expertise | Focus on precision design with unparalleled expertise for high-performance applications.

Global resources | With manufacturing in the USA, Europe and China, customers benefit from local service backed by global resources.

Reliability | Target market applications require the utmost in reliability, precision, and durability.

Reduced Risk | Optima Stantron's long history, solid foundation, global resources, and field-proven designs mitigates your risk.

FACILITIES:

With over 65,000 sq. ft. of design and manufacturing space, Optima Stantron has the capability to design and build a cabinet platform to suit your needs.

SQUARE FOOTAGE ———— 65,000 sq. feet

ENGINEERING DESIGN ——— PTC Creo 3D Solid Modeling / 2D AutoCAD

MANUFACTURING ———— Laser, punch and press fabrication equipment

Weld TIG/MIG/SPOT

Powder coat paint line

ASSEMBLY ———— Electro-mechanical

Component integration

Detailed ISO quality assurance inspection

SPECIAL SERVICES ——— Tool making

Silk-screening, digital printing, vinyl graphics

Environmental testing, simulated structural analysis

Agency certification

Versatility...

Optima Stantron offers a comprehensive selection of cabinets for Military, Industrial, Broadcasting, Lab, Datacenter, and Telecom applications. Available with premium features for providing solutions to meet; EMC applications, seismic, shock/vibration, MIL-STD, thermal and cabling demands of the most critical electronics.

Modularity...

The modularity of the Optima Stantron system provides the added flexibility to make modifications as your requirements evolve saving time, effort and reducing program risk. Each of Optima Stantron's industry specific cabinet families are available in a wide range of standard sizes, with extensive choices of: top, bottom, side panel, base, door and color options, allowing you to customize your unique enclosure system.

Compatibility...

Optima Stantron Electronic Cabinets are compatible in design and appearance with Optima Electronic Desks and Optima 19" Instrument Cases. They are all part of a unique packaging system designed to provide an integrated look to your operation center or laboratory environment.

Functionality...

A complete offering of accessories such as: shielding kits, panels, shelves, slides, shock isolators, cooling fans, joining brackets and power products insure that Optima Stantron has the solution to your application needs. As well as the design expertise targeted to specific applications which may also require testing and certification.
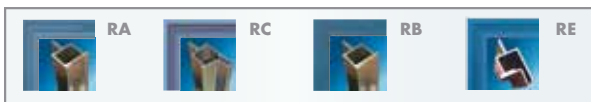
R-SERIES (INDUSTRIAL CABINETS)

Optima Stantron's standard cabinet offering for industrial applications, the R-Series is designed to meet industry standards for test instrumentation, industrial controls & electronic applications. Using a field proven extrusion-based frame design the R-Series has the flexibility to create custom configurations from standard options. The most versatile and cost effective of the Optima Stantron Series has four extrusions designed to be pneumatically crimped and fastened. The cabinet can be customized by adding a welded gusset to increase the rugged attributes.

RA, RC, RB, RE SERIES FRAME (BEZEL) DESIGN

- Industrial, versatile cabinet for wide range of applications
- Multiple bezel types in aesthetic, channeled, and gasket-ready versions
- Superior weight to strength ratio
- Allows for easily produced custom sizes either sigle cabinet or mutiple cabinet configurations

RA	RC	RB	RE

S-SERIES (INDUSTRIAL CABINETS)

For applications requiring EMC protection, Optima Stantron offers the SA and SC Series of modular cabinets. Nearly identical in both frame construction and appearance to the RA and RC series, the SA and SC provide an FCC shielded alternative for test instrumentation; Industrial controls & electronic applications. (Basic • Advanced • Mil Standard)
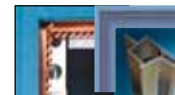
SC / SA SERIES FRAME (BEZEL) DESIGN

- Same construction characteristics as the RC cabinet with the addition of copper gasketing and shielded ventilation

SA Bezel Gasketing   *SC Panel Gasketing*

M-SERIES (REINFORCED, SEISMIC)

Optima Stantron's M-Series (M1, M2) Seismic Ready Cabinets have been lab and field tested to ensure that mission critical equipment remains up and running during the shock and vibration of mobile, and earthquake/seismic zone events. The high strength- to-weight ratio design of the M-Series cabinet supports and protects the equipment during the full force of a seismic event. Optima Stantron Seismic Ready Cabinets are custom designed to meet NEBS Level 3 Zone 4 and other stringent, earthquake zone applications. They have been tested to and passed **GR-64 CORE**, **MIL-STD-810F** and **901D** for shock and vibration and **MIL-STD 461** for EMC for COTS applications.

M1 & M2 SERIES FRAME (BEZEL) DESIGN

- Rugged aluminum extrusion with internal solid "L" shaped corner keys (not visible) for increased strength and rigidity
- Modular construction with welded corner sockets in critical areas to ensure maximum strength resistance to bending and vibration stresses, along with cross bracing, and heavy duty stiffeners
- Superior design for Seismic, rugged, or mobile applications

M2 Design incorporates a rugged double cavity aluminum extrusion with internal solid "L" shaped corner keys (not visible) to provide increased strength and rigidity.

Corner extrusions are welded in critical areas to ensure maximum strength resistance to bending and vibrational stresses.
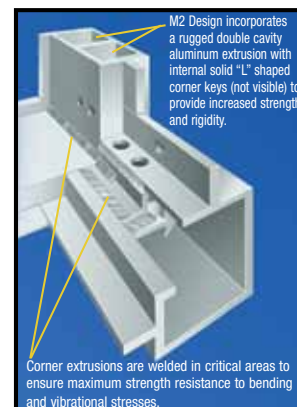
MS-Series (Welded 12 gauge CRS / MIL Compliant)

Hostile environments often require rugged cabinets that meet or exceed **MIL-STD: 810F**, **167**, **901D**, and **461D**. Optima Stantron's M-series Cabinet System is a unique modular construction designed to exceed military standards. It easily adapts to the equipment-mounting and protection needs of virtually any electronic system. It accommodates customer-specific requirements for EMC shielding, shock and vibration, thermal management, power distribution/conditioning and I/O cabling. Custom designs are based on proven design concepts so the cost, schedule and performance risks are substantially reduced.

MS Welded Frame Design
- 3-dimensional steel support braces at each corner intersection provide added resistance to compressive and torsional loads
- Universal recess adjustment feature for variable mounting rails depths
- Structural integrity of all-welded 12 gauge steel frame is supplemented with concealed screws and cage nuts
- Steel construction, all welded design, with EMI filtering

F-Series, (Harsh Environment, NEMA, EMC, Fire Protection)

For protection against water, dust, moisture, fire, and harsh elements, Optima Stantron's F series cabinet is the solution. The standard range of product is available in three versions: non-gasketed, **NEMA 12/UL 508** and Shielded **EMC/NEMA**, depending on the demands of the environment. With tested compliance to agency certification standards, the F-Series is proven to perform in harsh environments such as industrial control, factory automation, or lab use. Custom options include outdoor enclosures and fire protection.

F4 Frame
- Standard cabinet (no gasketing)

F5 Frame Gasket, Shielded EMC / NEMA
- Gasket material: two layers of double-knit, tin-plated, copper-clad fabric or steel mesh mounted to NEMA 12/UL 508 gasket
- Dynamic mechanical properties yield a high deflection range and eliminate compression set.
- Excellent electrical conductivity

F6 Frame Gasket, NEMA 12 / UL508
- Material: EPDM (Ethylene-Propylene-Diene)
- Resistant to: UV, ozone, weathering, seawater, compression set and abrasion
- Temperature range: -40 to 120 Deg C. Successfully tested to UL 508

F8 Fire Protection
- Steel cabinet with ceramic installation; Doors feature compression locks.
- Available fire suppression system with/wirhout cooling.

7
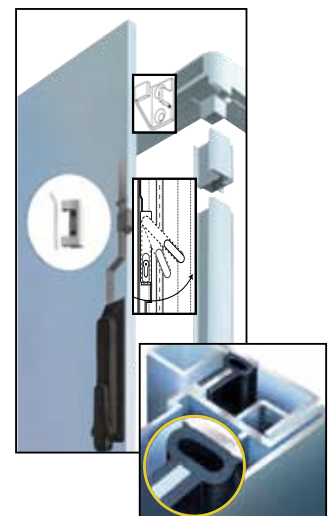
Standard Configuration

Each of Optima Stantron industry specific cabinet families are available in a wide range of standard sizes, with extensive choices of: top, bottom, side panel, base, door and color options. This allows you to customize your unique enclosure system.

STEP 1 → **Cabinet frame style**
Height, Width, Depth

STEP 2 → **Basic frame configuration** (Scope of supply)
Mounting rails (2 Pair) / Position / Rail Type
Base: Solid / Cable Egress / Casters / Levelers
Top panel: Solid / Perforated / Pagoda / Fan Cut-Out / Quick Release

STEP 3 → **Frame components** (Enhanced scope of supply)
Bottom panel: Solid / Perforated / Cable Egress
Side panel: Fixed / Quick Release
Front door: Solid, Vented, EMI/RFI, Perforated, Glazed (Acrylic), short with IO panel
Rear door: Solid, Vented, EMI/RFI, Perforated, Glazed (Acrylic), short with IO panel

STEP 4 → **Shielding options**
Basic / Advanced / MIL Standard / Not required

STEP 5 → **Body and/or trim color**

STEP 6 → **Accessories & enhancements**
Air Flow / Cooling / Thermal Requirements
   Fans / Blowers / Air Conditioning / Grilles / Filters
Cable Management
Drawers / Shelves / Slides / Writing Surface
Hardware:
   Casters / Handles / Gaskets / Panels / Support Angles / Shock Isolators
Power Options:
Outlet Strips / PDU's / UPS
Silkscreening / Digital Printing
   Identity / Logo / Panel Layout
Testing / Certification
   EMC / Shock & Vibration / NEMA

KEYING

R	A	G	A	B	2	3	F	1	1	3	J	B	1	1	1	X**
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17**

*** Defines Installed Accessories*

1,2 > FRAME STYLE

RC > RC Series
RA > RA Series
RB > RB Series
RE > RE Series (radius edge)
SC > SC Series (shielded)
SA > SA Series (shielded)
M1 > MAT Series (seismic)
M2 > MAT Series (rugged,seismic)
MS > MIL-Spec.
F4 > F4 Series (standard)
F5 > F5 Series (EMC shielded)
F6 > F6 Series (NEMA 12)
TS > T Series (IT / Server)
ZZ > Custom

3 > FRAME HEIGHT

A > 12U = (21.12" / 536mm)
B > 16U = (28.12" / 714mm)
C > 20U = (35.12" / 892mm)
D > 24U = (42.12" / 1069mm)
E > 30U = (52.12" / 1336mm)
F > 35U = (61.38" / 1559mm)
G > 40U = (70.12" / 1781mm)
H > 44U = (77.12" / 1958mm)
Z > Custom

4 > FRAME WIDTH

A > 19"/560mm
         (17.81"/ 452.4mm)
C > 24"/687mm
         (22.81" / 579.4mm)
D > 19"/600mm ✪
         (17.81"/ 452.4mm)
Z > Custom

5 > FRAME DEPTH

A > 24" = (609.6mm)
B > 30" = (762.0mm)
C > 36" = (914.4mm)
D > 42" = (1066.8mm)
Z > Custom

6 > MOUNTING RAIL POSITION

1 > Standard
2 > Recessed front
3 > Recessed rear
4 > Recessed front & rear
X > Not installed
Z > Custom

7 > MOUNTING RAILS

1 > U shape – 14GA, std. (SR)
2 > U shape – 11GA, (UTR)
3 > L shape – 11GA, (PR)
4 > L shape – 11GA, (TR)
5 > Telco – 40U & 44U (TIR)
6 > Reducer rail (RED)
7 > IEC 60297-2, 12 gauge
X > Not installed
Z > Custom

8 > BASE

A > Standard (BS)
B > Standard w/casters
C > Standard w/levelers
D > Standard w/both C&L
E > Cable egress (CE)
F > Cable egress - levelers
G > Cable egress - casters
H > Cable egress - both C&L
I > Caster plate - castors
J > Standard - stabilizer
X > Not installed (XB)
Z > Custom

9 > TOP PANEL

A > Solid (TS)
B > Perforated (PT)
C > Pagoda (PG)
D > Cable egress
E > Fan (TF)
X > Not installed (XT)
Z > Custom

10 > BOTTOM PANEL

A > Solid
B > Perforated
C > Cable egress
X > Not installed
Z > Custom

11 > SIDE PANEL

1 > L only (fixed)
2 > R only (fixed)
3 > L & R (fixed)
4 > L only (lift off)
5 > R only (lift off)
6 > L & R (lift off)
X > Not installed
B > Custom

12 > FRONT DOOR

A > Solid RH
B > Vented top RH
C > Vented bottom RH
E > Vented top/bottom RH
F > Solid LH
G > Vented top LH
H > Vented bottom LH
I > Vented top/bottom LH
J > Acrylic RH
K > Acrylic LH
L > Acrylic vented RH
M > Acrylic vented LH
N > Perforated insert (PV)
X > Not installed
Z > Custom

13 > REAR DOOR

A > Solid RH
B > Vented top RH
C > Vented bottom RH
E > Vented top/bottom RH
F > Solid LH
G > Vented top LH
H > Vented bottom LH
I > Vented top/bottom LH
J > Acrylic RH
K > Acrylic LH
L > Acrylic vented RH
M > Acrylic vented LH
N > Perforated insert (PV)
X > Not installed
Z > Custom

14 > SHIELDING

1 > Basic (BeCu)
2 > Advanced EMC
3 > MIL Level
X > Not installed
Z > Custom

15,16 > BODY/TRIM COLOR

1 > Black (207)
2 > Sky blue (210)
3 > White (931)
4 > Deep charcoal (209)
5 > Light gray (201)
6 > Beige (205)
Z > Custom

✪ *NOTE: 600m width cabinets have unique external/internal deminsions and are different than those shown in the configurator and/or drawings*

STANDARD COLORS:

NOTE: *Body and Trim may also be configured in a two color scheme please consult factory.*
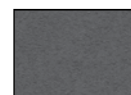
| 210 SKY BLUE | 205 BEIGE | 931 WHITE | 209 DEEP CHARCOAL | 201 LIGHT GRAY | 207 BLACK |
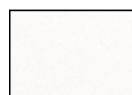
Custom colors are available.

FOR DETAILED DESCRIPTION: Mounting Rails / Base / Top Panel options; Refer to (Pages 23 - 26)

ITEMS TO BE ORDERED SEPARATELY: Bottom Panel, Side Panels, Doors, (Pages 27-30) Shielding, (Page 31), and Accessories; (Page 33)

Description:

Using an extrusion-based frame system, Optima Stantrons R-Series of industrial cabinets delivers a professional appearance while delivering functionality and durability. Designed to perform in the most demanding applications, the bezels are rated to 6600 lbs static load and corrosion resistance painted with a powder coat method electrostatically applied and thermally set to a hard, durable coating. A wide selection of doors, side panels, top and bottom covers combined with a family of accessory items complete the range.

Features:
- Modular extruded, aluminum frame (6063-T5 AL)
- Solid billeted aluminum corners (four way crimped)
- Bezel tested to 6,600 lbs static load (2,000 lb rated)
- Standard Sizes:
  - Widths: 19", 23" and 24"
  - Heights: 12U, 16U, 20U, 24U, 30U, 35U, 40U, 44U (custom available)
  - Depths: 24", 30", 36", 42"
- Independent, removable side, top panel, bottom panel and doors (Aluminum)
- Integrated cable management, power conditioning & cooling options
- Pre-treating and durable powder paint coating
- Wide range of standard body and trim color options

Scope of Supply:
- Basic cabinet includes: 1 x frame, 2 x mounting rails (pairs, with 10A clip nuts and panel screws), 1 x base, 1 x top panel, painted and assembled

Application/Ordering Examples:

Pagoda Top
- ❏ RA Series cabinet
- ❏ 30U, 24" wide, 24" depth
- ❏ Top / Bottom vented door
- ❏ Quick release side panels

RC with Increased Cooling
- ❏ RC cabinet
- ❏ 44U, 19" wide, 24" depth
- ❏ Custom fan inserted in basic door

Test Equipment (2-Bay)
- ❏ RB Series cabinet
- ❏ 35 U, 64" wide, 34" depth
- ❏ Internal panel divider
- ❏ 19" dividing rails
- ❏ Recessed mounting rail
- ❏ Cable management

Optima•Stantron
An Elma Company

ADVANTAGES:

RC Series

- Attractive, professional bezel designs: "shadow box" (RC) or "flush" (RA)
- Modular design reduces installation, upgrade and service time
- Custom design options, standard platform and cost
- Wide range of industry standard sizes and options
- Selection of contemporary color choices, (custom color matching also available)
- Superior strength-to-weight ratio
- Proven paint adhesion provides durable aesthetics
- Designed to meet EIA RS310-D
- Free assembly. Optima Stantron expertly assembles your cabinet at no charge
- "RE" type extrusion available with rounded edge for increased aesthetics
- "RB" type extrusion for "Flat" steel appearance

DIMENSIONS:

| Front / Rear — 19" Width | Front / Rear — 24" Width | Side View |

FRONT VIEW

REAR VIEW

SIDE VIEW
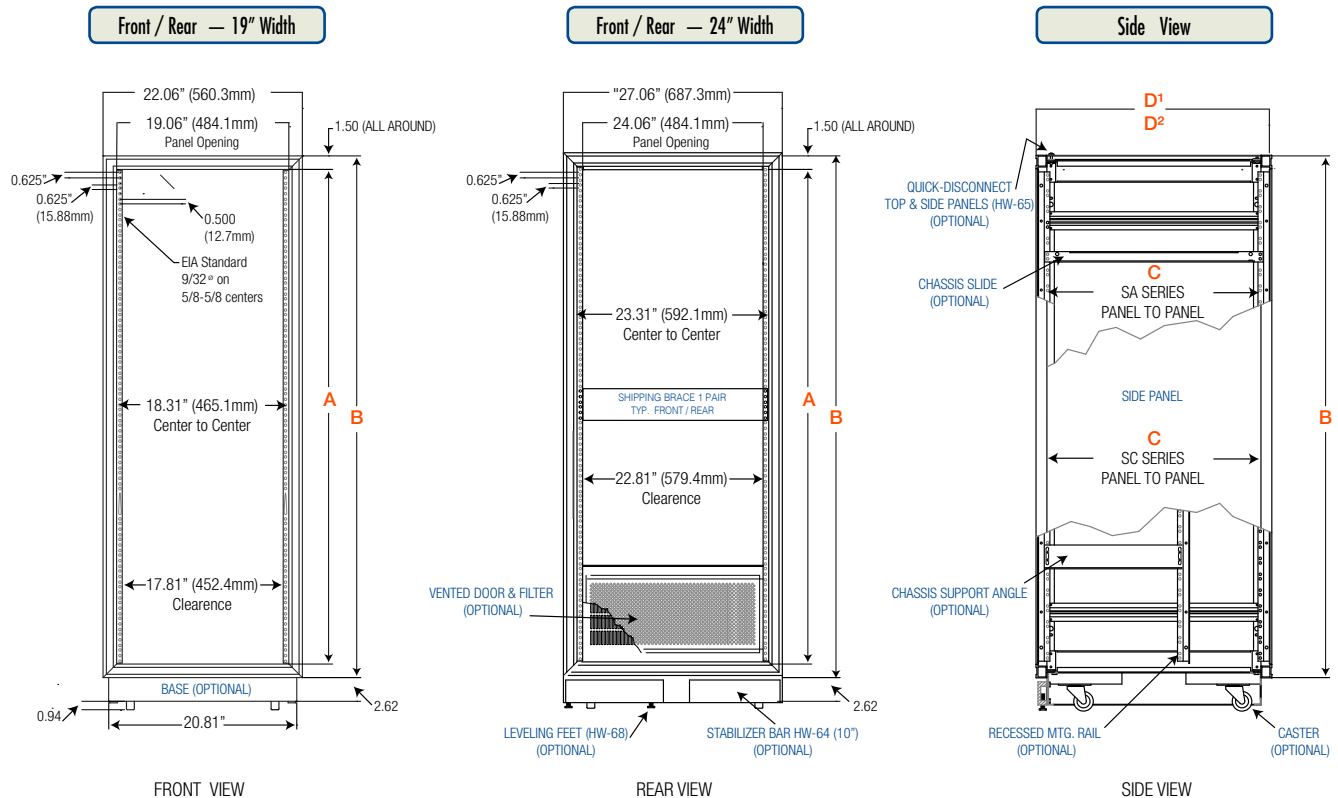
U	A		B		C	D1	D2
	inch	mm	inch	mm	Inch / mm	RC Only	RA Only
12	21.12	536.45	24.12	612.65	24.00"	26.40"	24.40"
16	28.12	714.25	31.12	790.45	(609.60mm)	(670.56mm)	(619.76mm)
20	35.12	892.05	38.12	968.25			
24	42.12	1069.85	45.12	1146.05	30.00"	32.40"	30.40"
30	52.62	1336.55	55.62	1412.75	(762.00mm)	(822.96mm)	(772.16mm)
35	61.38	1559.05	64.38	1635.25			
40	70.12	1781.05	73.12	1857.25	36.00"	38.40"	36.40"
44	77.12	1958.85	80.12	2035.05	(914.40mm)	(975.36mm)	(924.56mm)

Note: ± .03 tolerance for all dimensions above.

DESCRIPTION:

Optima Stantron's S-Series of industrial cabinets meets or exceeds FCC class A and B requirements for equipment protection. Using an extrusion based frame system, integrated with BeCu gaskets and shielded ventilation, the cabinets deliver superior EMC performance. Designed to perform in the most demanding applications, the bezels are rated to 6600 lbs static load and corrosion resistance painted with a powder coat method electrostatically applied and thermally set to a hard, durable coating. A wide selection of doors, side panels, top and bottom covers combined with a family of accessory items complete the range.

FEATURES:
- Modular extruded, aluminum frame (6063-T5 AL)
- 46dB shielding effectiveness (30MHz to 1,000 MHz — basic shielding level)
- BeCu gasketing applied to all seams and joints. (spring and sawtooth) to insure paint-free electrical contact areas with optional clear chromate
- Shielded mesh ventilation. (honeycomb optional)
- Shielded accessories to include: panels, drawers and writing surfaces
- Solid billeted aluminum corners. (four way crimped)
- Bezel tested to 6,600 lbs static load. (2,000 lb rated)
- Standard Sizes:
  - o Widths: 19", 23" and 24"
  - o Heights: 12U, 16U, 20U, 24U, 30U, 35U, 40U, 44U (custom available)
  - o Depths: 24", 30", 36", 42"
- Independent, removable side, top panel, bottom panel and doors (Aluminum)
- Integrated cable management, power conditioning & cooling options
- Wide range of standard body and trim color options

SCOPE OF SUPPLY:
- Basic cabinet includes: 1 x frame, 2 x mounting rails (pairs, with 10A clip nuts and panel screws), 1 x base, 1 x top panel, gasketing kit , painted and assembled

APPLICATION/ORDERING EXAMPLES:

AIRBORNE COMMUNICATIONS
- ❑ SA-Series cabinet
- ❑ 12U/22U stacked configuration
- ❑ Advanced EMC shielding
- ❑ Soft shield gaskets
- ❑ Exceeds 60dB up to 1Ghz

SEMICONDUCTOR TEST
- ❑ SC cabinet
- ❑ 16U / 30" depth
- ❑ Vented plenum side panels
- ❑ Honeycomb filtered doors with bottom vents

LABORATORY TEST
- ❑ SC-Series cabinet
- ❑ 40U / 24" depth
- ❑ Swing handle for multi-point latching to achieve superior compression
- ❑ Beryllium copper gaskets at all panel door seams and interfaces

Optima•Stantron
An Elma Company

ADVANTAGES:

- Superior shielding effectiveness: FCC Part 15, Subpart J (class A & B)
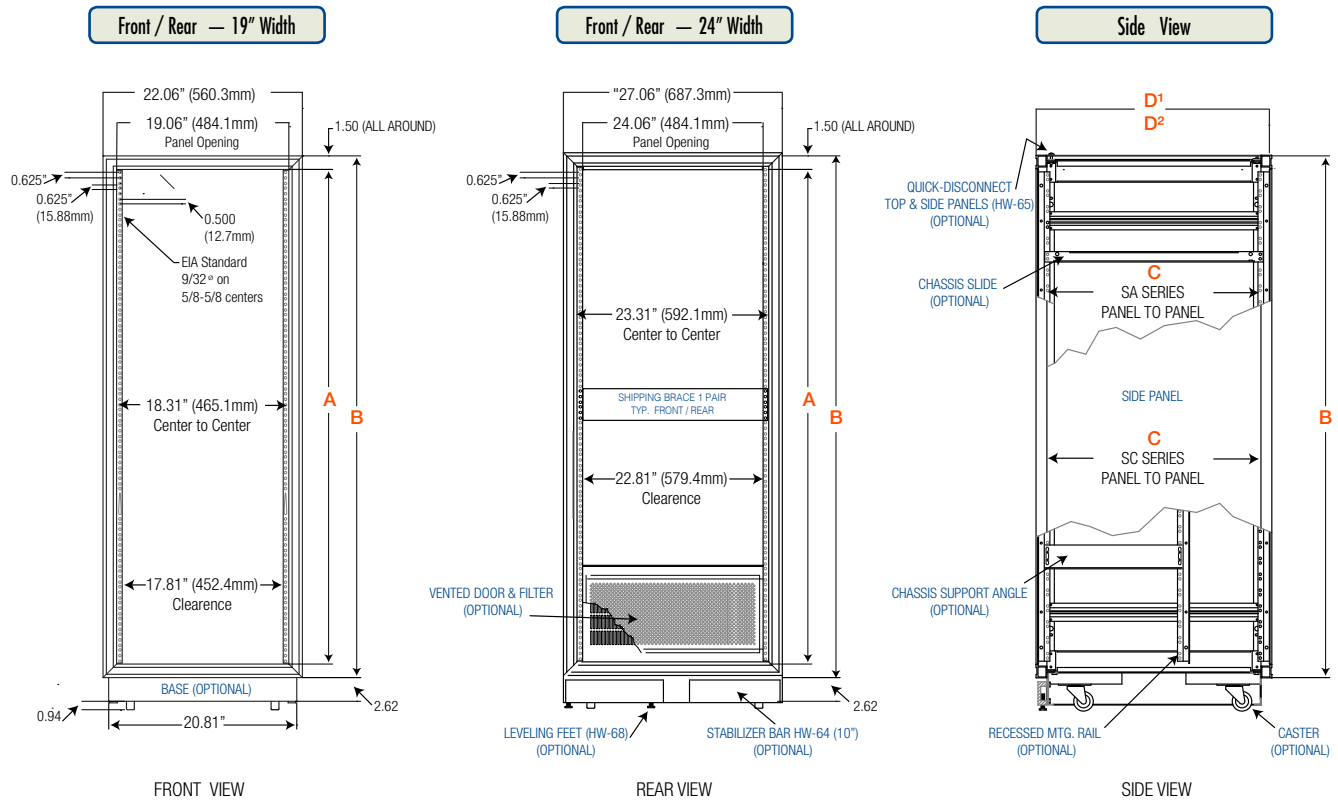- Attractive, professional bezel designs: "shadow box" (SC) or "flush" (SA)
- Modular design reduces installation, upgrade and service time
- Custom design options, standard platform and cost
- Wide range of industry standard sizes and options
- Selection of contemporary color choices, (custom color matching also available)
- Superior strength-to-weight ratio
- Proven paint adhesion provides durable aesthetics
- Custom design options, standard platform and cost
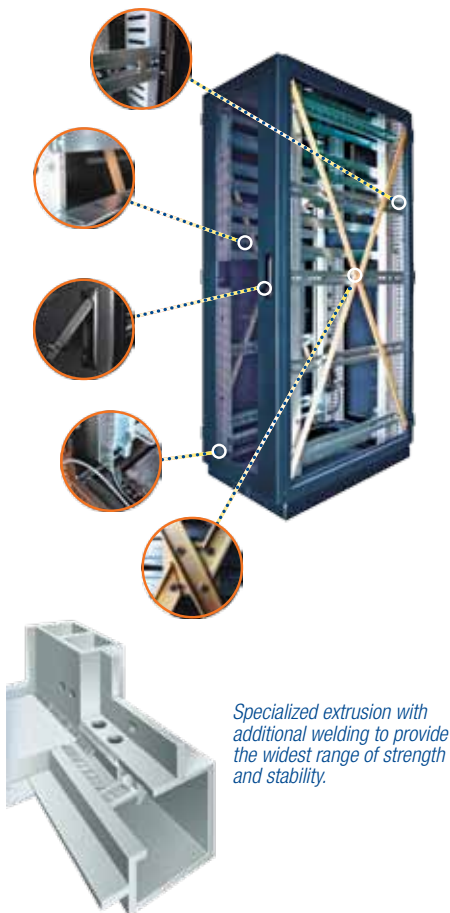- Free assembly. Optima Stantron expertly assembles your cabinet at no charge

DIMENSIONS:

Front / Rear — 19" Width	Front / Rear — 24" Width	Side View

Front / Rear — 19" Width

22.06" (560.3mm)
19.06" (484.1mm) Panel Opening
1.50 (ALL AROUND)
0.625"
0.625" (15.88mm)
0.500 (12.7mm)
EIA Standard 9/32 ° on 5/8-5/8 centers
18.31" (465.1mm) Center to Center
A
B
17.81" (452.4mm) Clearence
BASE (OPTIONAL)
0.94
20.81"
2.62

FRONT VIEW

Front / Rear — 24" Width

"27.06" (687.3mm)
24.06" (484.1mm) Panel Opening
1.50 (ALL AROUND)
0.625"
0.625" (15.88mm)
23.31" (592.1mm) Center to Center
SHIPPING BRACE 1 PAIR TYP. FRONT / REAR
A
B
22.81" (579.4mm) Clearance
VENTED DOOR & FILTER (OPTIONAL)
2.62
LEVELING FEET (HW-68) (OPTIONAL)
STABILIZER BAR HW-64 (10") (OPTIONAL)

REAR VIEW

Side View

D1
D2
QUICK-DISCONNECT TOP & SIDE PANELS (HW-65) (OPTIONAL)
CHASSIS SLIDE (OPTIONAL)
C
SA SERIES PANEL TO PANEL
SIDE PANEL
B
C
SC SERIES PANEL TO PANEL
CHASSIS SUPPORT ANGLE (OPTIONAL)
RECESSED MTG. RAIL (OPTIONAL)
CASTER (OPTIONAL)

SIDE VIEW

U	A		B		C	D1	D2
	inch	mm	inch	mm	Inch / mm	SC Only	SA Only
12	21.12	536.45	24.12	612.65	24.00"	26.40"	24.40"
16	28.12	714.25	31.12	790.45	(609.60mm)	(670.56mm)	(619.76mm)
20	35.12	892.05	38.12	968.25			
24	42.12	1069.85	45.12	1146.05	30.00"	32.40"	30.40"
30	52.62	1336.55	55.62	1412.75	(762.00mm)	(822.96mm)	(772.16mm)
35	61.38	1559.05	64.38	1635.25			
40	70.12	1781.05	73.12	1857.25	36.00"	38.40"	36.40"
44	77.12	1958.85	80.12	2035.05	(914.40mm)	(975.36mm)	(924.56mm)

Note: ± .03 tolerance for all dimensions above.

Description:

All M-Series Optima Stantron cabinets are designed and tested to withstand the shock and vibration of several mobile, seismic and mil-aero applications. This includes meeting earthquake Seismic Zone 4 event as defined in GR-63-CORE, without displaying any permanent deformation which impairs performance or operation. The M1 (single wall extrusion) meets NEBS Level 3 requirements and its modular construction makes it ideal for customizing to specific needs. For server applications requiring seismic performance in excess of industry standards the M2's double cavity, aluminum extrusion provides a substantial increase in seismic performance. Each application requires engineering review for equipment loads and rack position. Doors, side panels, top covers and bottom are available and designed to remain in place during a seismic event.

Features:
- Heavy duty single or double walled extrusions
- Internal reinforcing corner keys, four way crimped and welded
- Corner sockets & corner members welded to meet: ANSI 329, BellcoreTR-63
- 7 gauge welded steel base with 11 gauge rails (10 gauge rails optional)
- Universal hard mounting to floor – bolt down base (ceiling or wall bracing optional)
- Vibration resistant hardware
- Standard Sizes:
    o Widths: 19", 23" and 24"
    o Heights: 12U, 16U, 20U, 24U, 30U, 35U, 40U, 44U (custom available)
    o Depths: 24", 30", 36", 42"
- Independent, removable side, top panel, bottom panel and doors
- Integrated cable management, power conditioning & cooling options

Scope of Supply:
- Basic cabinet includes: 1 x frame, 2 x mounting rails (pairs, with 10A clip nuts and panel screws), anodized cross-braces, 1 x base, 1 x top panel, painted and assembled

Specialized extrusion with additional welding to provide the widest range of strength and stability.

Application/Ordering Examples:

Mobile Computing
- ❏ M2-Series 2-Bay cabinet
- ❏ 36U, 60 (2 x 30") wide, 42" depth
- ❏ Double french doors
- ❏ Acrylic (front), perforated (rear)

Seismic / Satellite Tracking
- ❏ M2-Series cabinet
- ❏ 40U / 30" depth
- ❏ Custom cutouts in side panels for connector panels
- ❏ Perforated door

Military - Mobile Rugged
- ❏ M1-Series cabinet
- ❏ 35U / 24" W / Special 34" D
- ❏ Yellow alodine for extra corrosion protection
- ❏ Tray assembly
- ❏ Shock isolation w/mounting plate
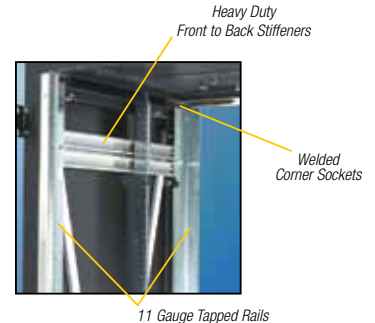
Optima•Stantron
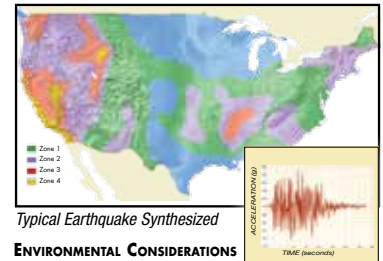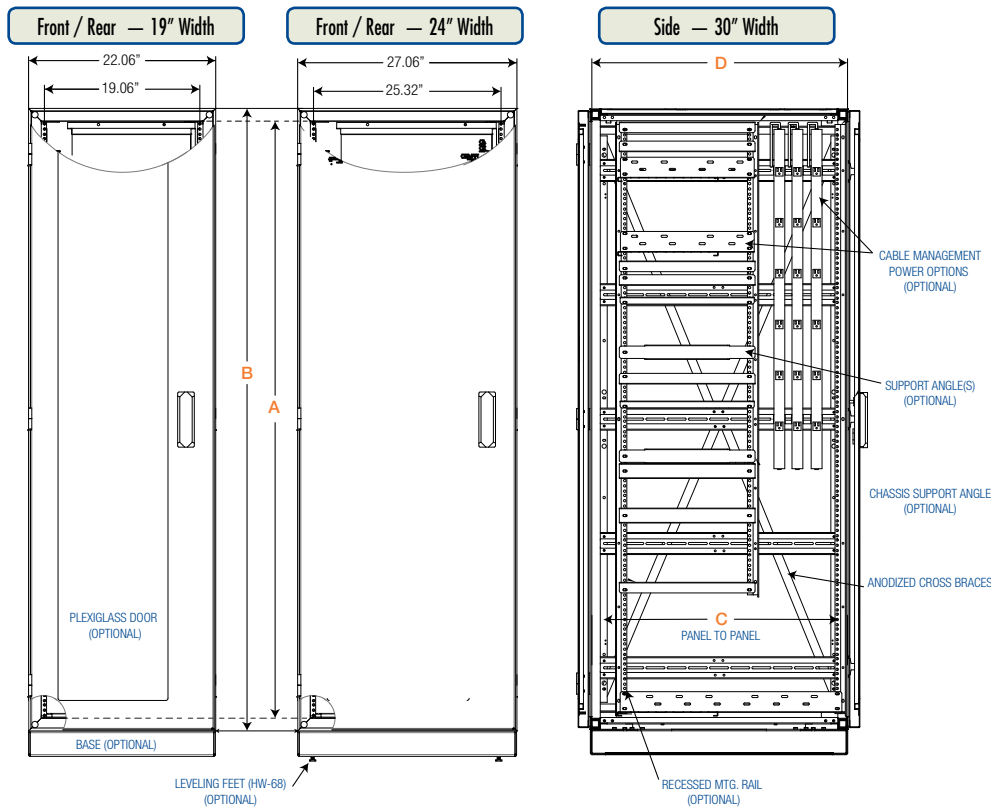An Elma Company

ADVANTAGES:

Side to side shaker lab test

- Meets seismic zone 4 per GR-63-CORE
- Customized engineering review based on customer specific load requirements
- EMC and NEMA (Type 3) rated versions (optional)
- Modular design reduces installation, upgrade and service time
- Wide range of industry standard sizes, cabling, cooling and power options
- Selection of contemporary color choices (custom color matching also available)
- Proven paint adhesion provides durable aesthetics

Heavy Duty Front to Back Stiffeners

Welded Corner Sockets

11 Gauge Tapped Rails

DIMENSIONS:

Front / Rear — 19" Width
22.06"
19.06"

Front / Rear — 24" Width
27.06"
25.32"

Side — 30" Width
D

B
A

PLEXIGLASS DOOR (OPTIONAL)

BASE (OPTIONAL)

LEVELING FEET (HW-68) (OPTIONAL)

CABLE MANAGEMENT POWER OPTIONS (OPTIONAL)

SUPPORT ANGLE(S) (OPTIONAL)

CHASSIS SUPPORT ANGLE (OPTIONAL)

ANODIZED CROSS BRACES

C
PANEL TO PANEL

RECESSED MTG. RAIL (OPTIONAL)

Typical Earthquake Synthesized

Zone 1
Zone 2
Zone 3
Zone 4

ACCELERATION (g)
TIME (seconds)

ENVIRONMENTAL CONSIDERATIONS FOR SEISMIC-HARDENING

Earthquake-prone areas such as regions of California (along the San Andreas and other faults) are specified as Zone 4. Zone 3 regions are the next most active. Zones 2 and 1 represent the lowest-risk regions.

Accelerations AUCX CDG
2.00
1.00
-1.00
0.50
-0.50
-1.00
0.00 0.10 0.20 0.30 0.40 0.50 0.60 0.70
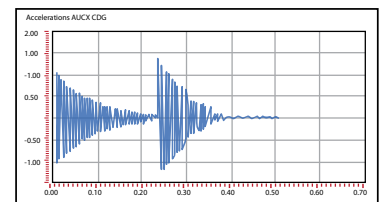
MIL-STD 901-D SHOCK GRAPH

Optima's M-Series cabinet enclosure passing MIL-STD-810-F and MIL-STD-901D tests for shock and vibration. Optima's M series MIL-SPEC Cabinet System has a unique modular construction designed to exceed military standards and can adapt to the equipment-mounting and protection needs of virtually any electronic system. The enclosure employs thicker gauge aluminum, reinforced corner members, cross-bracing, spot welding, and a reinforced base to withstand Seismic Zone 4 and MIL/rugged applications.

U	A		B		C	D
	inch	mm	inch	mm	Inch / mm	Inch / mm
12	21.12	536.45	24.12	612.65	24.00"	26.40"
16	28.12	714.25	31.12	790.45	(609.60mm)	(670.56mm)
20	35.12	892.05	38.12	968.25		
24	42.12	1069.85	45.12	1146.05	30.00"	32.40"
30	52.62	1336.55	55.62	1412.75	(762.00mm)	(822.96mm)
35	61.38	1559.05	64.38	1635.25		
40	70.12	1781.05	73.12	1857.25	36.00"	36.40"
44	77.12	1958.85	80.12	2035.05	(914.40mm)	(924.36mm)

Note: ± .03 tolerance for all dimensions above.

Description:

The modular designOptima Stantrons M-Series MIL-STD Cabinet System for military systems offers a high level of performance and integrity. Beyond the cabinets all-welded 12 gauge steel frame construction are eight, 3-dimensional support braces (12 gauge), one at each corner intersection, providing added resistance to demanding compressive and torsion loads routinely experienced in MIL environments. The cabinets ship standard with crane lifting eyes mounted directly through the top corner support braces.

Each application requires engineering review for environmental specifications and equipment loads. The design includes a wide selection of options for doors, side panels, top covers, bottom panels, cooling, I/O cabling, floor mounting and casters.

Construction Features:
- 12 gauge all welded frame construction
- 3-Dimensional support braces (12 gauge)
- Crane lifting eyes, floor mounting and shock isolators tied directly through corner braces
- Removable top and side panels (16 gauge, with concealed screws and cage nuts).
- Adjustable mounting rails (12 gauge)
- Heavy-duty, zinc die-cast door hinge with ¼" stainless steel pivot pins
- Single-handed, 4-point latching system
- Honeycomb air intake filters
- EMI/RFI suppression via tin coated, copper-clad steel wire mesh knitted over a double silicon elastomer core

Scope of Supply:
- Fully integrated and assembled cabinet per customer specific requirements

Application/Ordering Examples:

Shipboard Communications
- ❏ MS-Series cabinet
- ❏ I/O panel cut-out
- ❏ Fan cut-out rear
- ❏ Perforated front door

Scientific Instrumentation
- ❏ MS-Series cabinet
- ❏ 2 Bay / 40U
- ❏ Filter fans rear
- ❏ Forklift base

Ground Based Radar
- ❏ MS-Series cabinet
- ❏ 2 Bay / 40U
- ❏ MIL STD 461D
- ❏ Tin coating and gaskets for enhanced shielding
- ❏ Special latching for greater gasket compression

Optima•Stantron
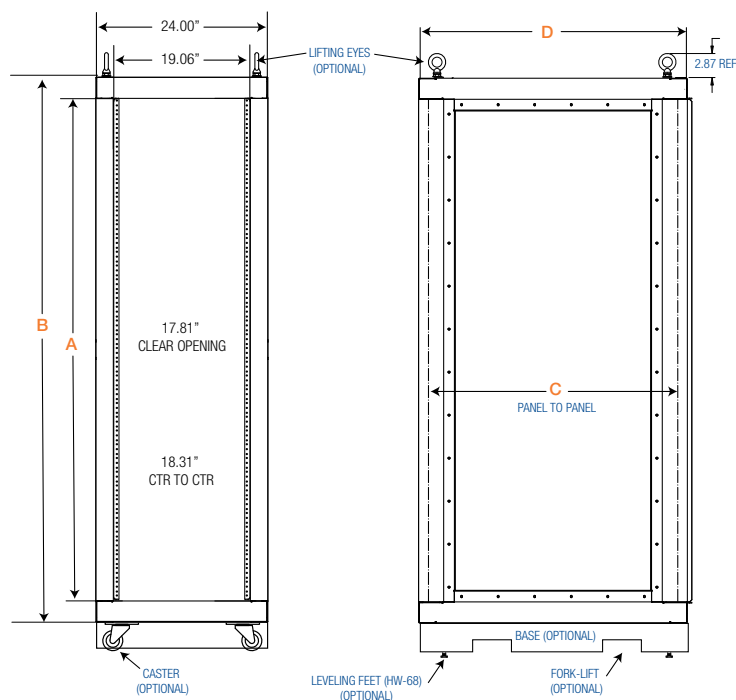An **Elma** Company

ADVANTAGES:

- Designed to meet MIL-STD: 461D, 810F, 167, 901D
- Custom engineering support
- 4 x crane lifting eyes rated to 1,000lbs each
- Optional castors, fixed floor or shock isolation mounts
- Fork lift provisions
- Removable I/O panels standard
- Optional shielded plexiglass doors and windows
- Integrated cooling, cabling and power management

DIMENSIONS:

| Front / Rear — 19" Width | Side View — 36" Width | Top & Front, Weld Details |

Front / Rear — 19" Width
24.00"
19.06"
LIFTING EYES (OPTIONAL)
17.81" CLEAR OPENING
18.31" CTR TO CTR
B
A
CASTER (OPTIONAL)

Side View — 36" Width
D
2.87 REF
C
PANEL TO PANEL
LEVELING FEET (HW-68) (OPTIONAL)
BASE (OPTIONAL)
FORK-LIFT (OPTIONAL)

Top & Front, Weld Details
PLUG WELD CORNER SUPPORTS FIRST TO HOLD FLUSH WITH OTHER PIECES
FILLET WELD
FILLET WELD
BUTT WELD AND GRIND FLUSH
FILLET WELD

Structural integrity of all-welded 12 gauge steel frame is supplemented with concealed screws and cage nuts

U	A		B		C	D
	inch	mm	inch	mm	Inch / mm	Inch / mm
12	21.12	536.45	26.82	681.23	24.00"	25.50"
16	28.12	714.25	33.82	859.03	(533.40mm)	(647.70mm)
20	35.12	892.05	40.82	1036.83		
24	42.12	1069.85	47.82	1214.63	30.00"	31.50"
30	52.62	1336.55	58.32	1481.33	(685.80mm)	(800.10mm)
35	61.38	1559.05	67.08	1703.83		
40	70.24	1784.09	76.00	1930.40	36.00"	37.50"
44	77.12	1958.85	82.82	2103.83	(838.20mm)	(952.50mm)

Note: ± .03 tolerance for all dimensions above.

Description:

The F-Series is based on a modular extrusion frame design available in 3 versions. The F4 is a basic cabinet without gasketing. For applications requiring only dust and moisture control ; F6 is the appropriate choice. When the environment calls for both particle and EMC suppression, the F5 must be used. All versions feature an aluminum frame with integrated gasketing, corner castings, heavy duty door stiffening frame, multi-point locking system, windstops, and key locking door.   With the choice of frame size, mounting rails, base, top/bottom , side panel, doors, color and accessories the cabinet can be built with any desired features and appearance.

Features:
- Modular extruded, aluminum frame (6063-T5 AL)
- Corner die casting (380 AL)
- NEMA 12 gasket: EPDM (Ethylene-Propylene-Diene)
- EMC gasket overlay: Two layers of double-knit, tin-plated, copper-clad, steel mesh
- Multi-point locking system (2 x 21"-42", 4 x 52"-77")
- Standard Sizes: (custom available on request)
    o Widths: 19", 23" and 24"
    o Heights: 12U, 16U, 20U, 24U, 30U, 35U, 40U, 44U
    o Depths: 24", 30", 36"
- Independent, removable side, top panel, bottom panel and doors
- Concealed hinges with 112 degree swing (external 210 degree hinge optional)
- Key lock door standard
- Flammability rating: UL94, Fireproof version (F8)
- Integrated cable management, power conditioning and cooling options
- Outdoor cabinets available upon request

Scope of Supply:
- Basic cabinet to include: 1 x frame, 2 x mounting rails (pairs, with 10A clip nuts and panel screws), 1 x base, 1 x top panel, gasketing kit , painted and assembled

MATERIAL SPECIFICATION
- *Corner die casting - Aluminum 380 alloy.*
- *Extrusions - Aluminum 6063-T5 alloy.*

Application/Ordering Examples:

Network Server
- ❏ F5 Series cabinet
- ❏ 40U / 24" depth
- ❏ EMC shielded
- ❏ Acrylic door
- ❏ 4 point locking

Nema Moisture & Dust Protection
- ❏ F6 Series cabinet
- ❏ 40U / 36" depth
- ❏ Mushroom top, drip resistant
- ❏ 4 point locking

Fire Protection
- ❏ F8 Series cabinet
- ❏ 44U / 36" depth, 27" width
- ❏ Double wall with 1½" ceramic installation and ceramic gasketing
- ❏ Fire suppression unit

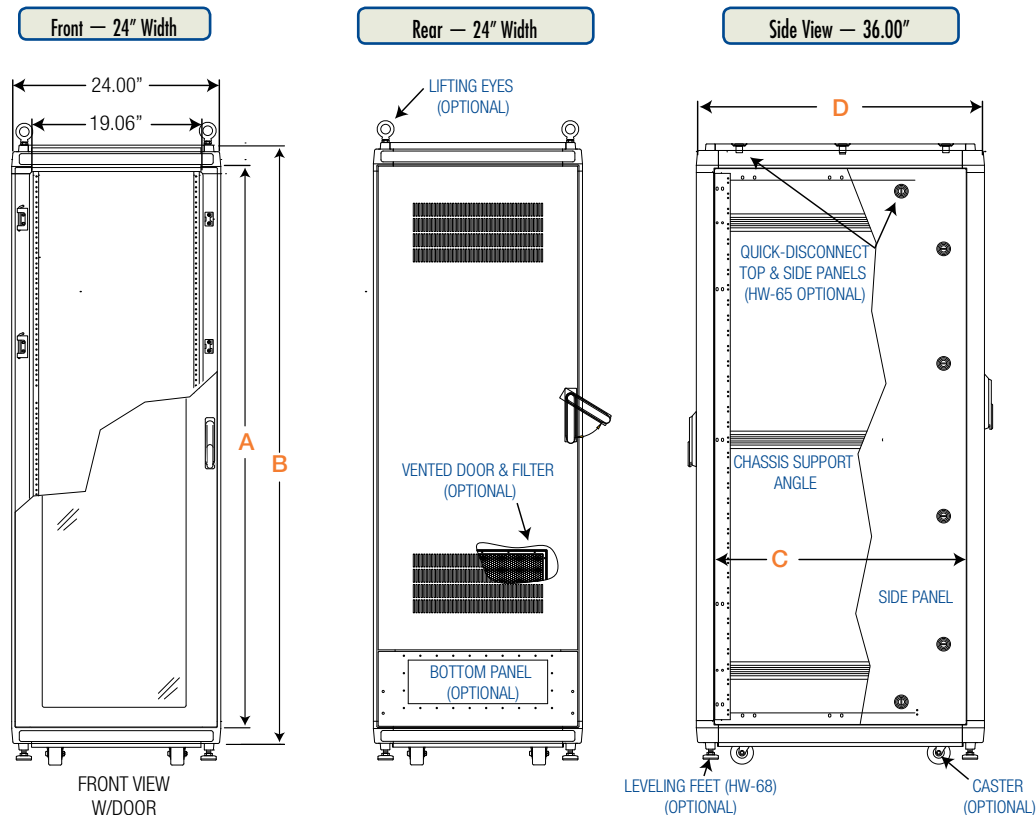**Optima•Stantron**
An Elma Company

ADVANTAGES:

- Tested to meet harsh environment protection: NEMA 12/UL508, EMC FCC Class A,
- MILSTD, CISPR
- Three levels of protection: F4 (No-gasket), F5 (NEMA), F6 (EMC/NEMA).
- 51dB shielding effectiveness, 30 to 1,000MHz.
- Wide range of industry standard sizes and options.
- Modular design reduces installation, upgrade and service time.
- Wide range of industry standard sizes and options.
- Custom design options with a standard platform and cost.
- Selection of contemporary color choices, (custom color matching also available).
- Free assembly. Optima Stantron expertly assembles your cabinet at no charge.
- Tested performance to: UL, CSA, FCC, MIL-STD, and CISPR.

DIMENSIONS:

Front — 24" Width

24.00"
19.06"

A
B

FRONT VIEW
W/DOOR

Rear — 24" Width

LIFTING EYES
(OPTIONAL)

VENTED DOOR & FILTER
(OPTIONAL)

BOTTOM PANEL
(OPTIONAL)

Side View — 36.00"

D

QUICK-DISCONNECT
TOP & SIDE PANELS
(HW-65 OPTIONAL)

CHASSIS SUPPORT
ANGLE

C

SIDE PANEL

LEVELING FEET (HW-68)
(OPTIONAL)

CASTER
(OPTIONAL)

F5 FRAME GASKET, SHIELDED EMC / NEMA
- Gasket Material: Two layers of double-knit, tin-plated, copper-clad, steel or fabric mesh mounted to NEMA 12/UL 508 gasket.
- Dynamic mechanical properties yield a high deflection range and eliminate compression set.
- Excellent electrical conductivity.

F6 FRAME GASKET, NEMA 12 / UL508
- Material: EPDM (Ethylene-Propylene-Diene).
- Resistant to: UV, Ozone, weathering, seawater, compression set and abrasion.
- Temperature Range: -40 to 120 Deg C.
- Successfully tested to UL 508.

EMI/RFI FILTER VERSION
- Plenum spot-welded to door.
- 16 Ga.CRS, perforated.
- 187" diameter holes on 45° staggered centers.

NEMA 12/UL 508 FILTER VERSION
- Air filters are removable and washable in detergent.
- Filter material: polyester urethane; UL 94-HF1 rated.1/2" thick core; 30 pores per inch.
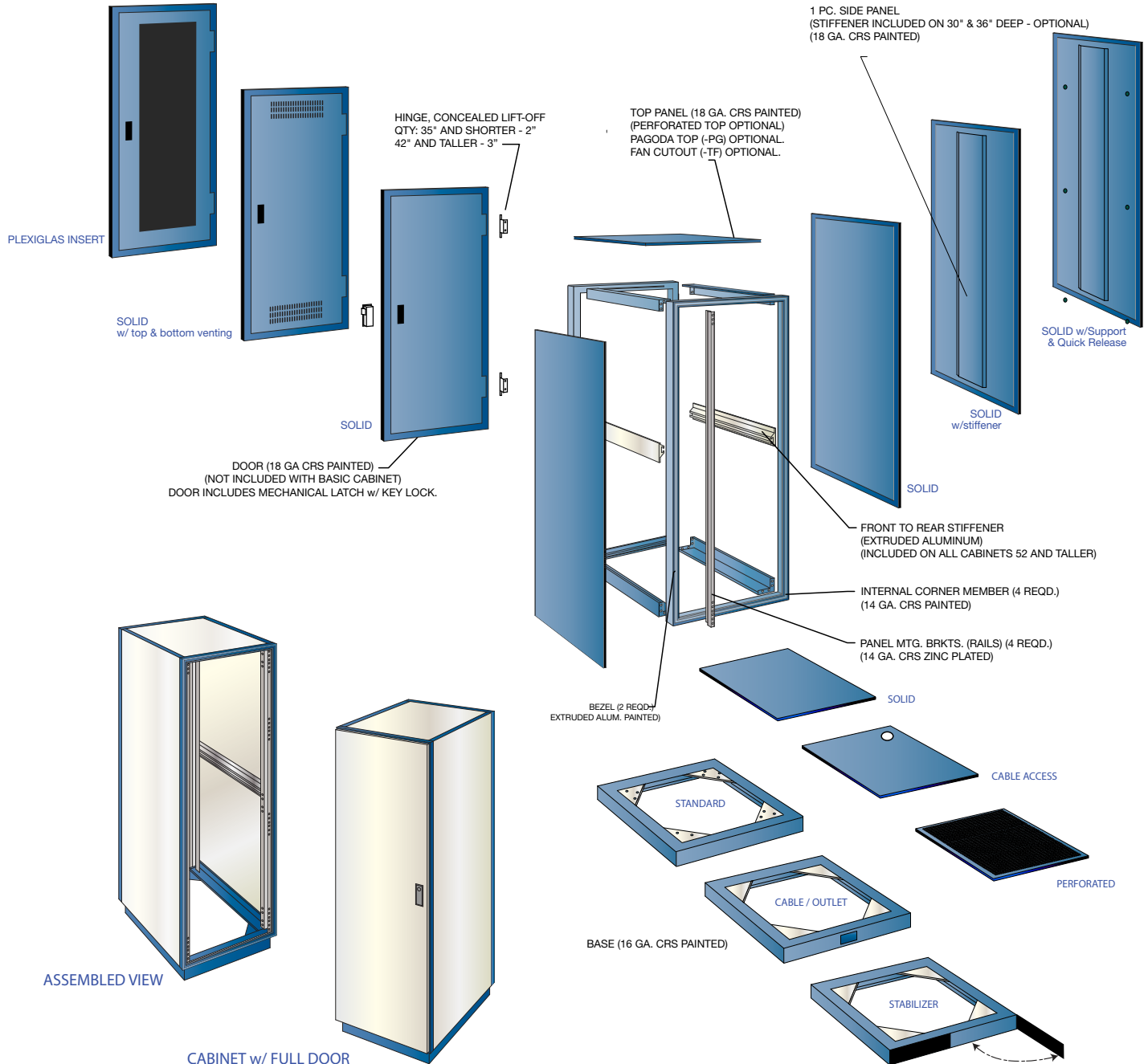- Frame material: 18 Ga. CRS.

U	A		B		C	D
	inch	mm	inch	mm	Inch / mm	Inch / mm
12	21.12	536.45	27.68	703.07	24.00"	27.08"
16	28.12	714.25	34.68	880.87	(609.60mm)	(687.83mm)
20	35.12	892.05	41.68	1058.67		
24	42.12	1069.85	48.68	1236.47	30.00"	33.08"
30	52.62	1336.55	59.18	1503.17	(762.00mm)	(840.23mm)
35	61.38	1559.05	67.94	1725.67		
40	70.12	1781.05	76.68	1947.67	36.00"	39.08
44	77.12	1958.85	83.68	2125.47	(914.40mm)	(992.63mm)

Note: ± .03 tolerance for all dimensions above.

EXPLODED CABINET VIEW:

PLEXIGLAS INSERT

SOLID
w/ top & bottom venting

HINGE, CONCEALED LIFT-OFF
QTY: 35" AND SHORTER - 2"
42" AND TALLER - 3"

SOLID

DOOR (18 GA CRS PAINTED)
(NOT INCLUDED WITH BASIC CABINET)
DOOR INCLUDES MECHANICAL LATCH w/ KEY LOCK.

TOP PANEL (18 GA. CRS PAINTED)
(PERFORATED TOP OPTIONAL)
PAGODA TOP (-PG) OPTIONAL.
FAN CUTOUT (-TF) OPTIONAL.

1 PC. SIDE PANEL
(STIFFENER INCLUDED ON 30" & 36" DEEP - OPTIONAL)
(18 GA. CRS PAINTED)

SOLID w/Support
& Quick Release

SOLID
w/stiffener

SOLID

FRONT TO REAR STIFFENER
(EXTRUDED ALUMINUM)
(INCLUDED ON ALL CABINETS 52 AND TALLER)

INTERNAL CORNER MEMBER (4 REQD.)
(14 GA. CRS PAINTED)

PANEL MTG. BRKTS. (RAILS) (4 REQD.)
(14 GA. CRS ZINC PLATED)

BEZEL (2 REQD.
EXTRUDED ALUM. PAINTED)

SOLID

CABLE ACCESS

STANDARD

PERFORATED

CABLE / OUTLET

BASE (16 GA. CRS PAINTED)

STABILIZER

ASSEMBLED VIEW

CABINET w/ FULL DOOR

EXAMPLE SHOWN R-SERIES:

FRAME OPTIONS:

Optima•Stantron
An Elma Company

ORDERING INFORMATION:

| 1 | 2 | – | 3 | 4 | 5 | 6 |

1,2 > FRAME STYLE

RC	> RC Series
RA	> RA Series
RB	> RB Series
RE	> RE Series (radius edge)
SC	> SC Series (shielded)
SA	> SA Series (shielded)
M1	> MAT Series (seismic)
M2	> MAT Series (rugged, seismic)
MS	> MIL-Spec.
F4	> F4 Series (standard)
F5	> F5 Series (EMC shielded)
F6	> F6 Series (NEMA 12)
TT	> T Series (IT/Broadcast)
ZZ	> Custom

3 > FRAME HEIGHT

A	> 12U = (21.12" / 536mm)
B	> 16U = (28.12" / 714mm)
C	> 20U = (35.12" / 892mm)
D	> 24U = (42.12" / 1069mm)
E	> 30U = (52.12" / 1336mm)
F	> 35U = (61.38" / 1559mm)
G	> 40U = (70.12" / 1781mm)
H	> 44U = (77.12" / 1958mm)
Z	> Custom

4 > FRAME WIDTH

A	> 19"/560mm (17.81"/ 452.4mm)
C	> 24"/687mm (22.81" / 579.4mm)
D	> 19"/600mm ✹ (17.81"/ 452.4mm)
Z	> Custom

5 > FRAME DEPTH

A	> 24" = (609.6mm)
B	> 30" = (762.0mm)
C	> 36" = (914.4mm)
D	> 42" = (1066.8mm)
Z	> Custom

6 > MOUNTING RAIL POSITION

1	> Standard
2	> Recessed front
3	> Recessed rear
4	> Recessed front & rear
X	> Not installed
Z	> Custom

✹ NOTE: 600m width cabinets have unique external/internal deminsions and are different than those shown in the configurator and/or drawings

RC / RA / RB SERIES
Industrial, versatile cabinet for wide range of applications

Bezel designs in aesthetic channeled, and gasket-ready

SC / SA SERIES
Industrial, shielded cabinet for wide range of applications

Modular construction with EMC and ruggedization options

M1 & M2 SERIES
Rugged design for Seismic, rugged, or mobile applications

Modular construction with reinforced corner members, bracing, & stiffeners

Versions meet GR-64-CORE,

MIL-STD-810-F, MIL-STD-461,

MIL-STD 901D

MS SERIES
Designed for MIL, heavy-rugged applications

Steel construction, all welded design, with EMI filtering, MIL 469D and Tempest

Meets MIL-STD-810- for shock & vibration

F SERIES
Outdoor, NEMA 4, NEMA 12 type and Fire protection applications

For harsh environments including, temperature, dust, liquid, and EMC considerations

Modular designs accepts gasketing in various styles

FOR DETAILED DESCRIPTION: Mounting Rails / Base / Top Panel options; Refer to (Pages 23 - 26)

ITEMS TO BE ORDERED SEPARATELY: Bottom Panel, Side Panels, Doors, (Pages 27-30) Shielding, (Page 31), and Accessories; (Page 33)

ORDERING INFORMATION:

R– 1 2 3 4

1,2 > HEIGHT

21	> 12U (21.12" / 536mm)
28	> 16U (28.12" / 714mm)
35	> 20U (35.12" / 892mm)
42	> 24U (42.12" / 1069mm)
52	> 30U (52.12" / 1336mm)
61	> 35U (61.38" / 1559mm)
70	> 40U (70.12" / 1781mm)
77	> 44U (77.12" / 1958mm)
ZZ	> Custom

3,4 > MOUNTING RAIL TYPE

SR	> U shape – 14GA, std. (SR)
UT	> U shape – 11GA, HD tapped (UTR)
HD	> L shape – 11GA, HD punched (PR)
HT	> L shape – 11GA, HD tapped (TR)
TI	> Telco – 40U & 44U (TIR)
RE	> Reducer rail (RED)
EU	> IEC 60297-2 (EU) - 11GA, HD
XT	> Not installed
ZZ	> Custom

14 Gauge Punched | 11 Gauge Tapped | 11 Gauge Punched | 11 Gauge Tapped
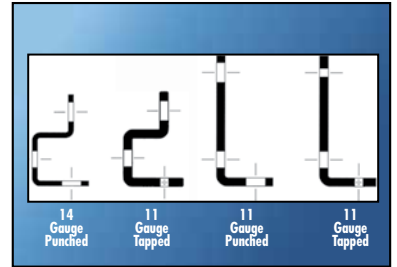
STANDARD OPTIONS: R, S, SEISMIC

A) Standard (SR) 14 gauge (.075" THK.) CRS

B) Heavy-duty tapped 10-32 (UT) 11 gauge (.119" THK.) CRS

C) Heavy-duty punched (HD) 11 gauge (.119" THK.) CRS

D) Heavy-duty tapped 10-32 (HT) 11 gauge (.119" THK.) CRS

E) Telecom Industry (TI) 11 gauge (.119" THK.) CRS
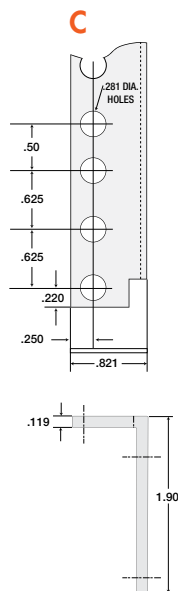
F) IEC 60297-2 (Square hole) 11/14 gauge
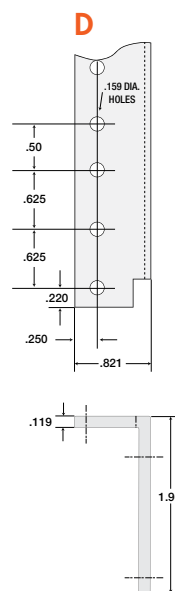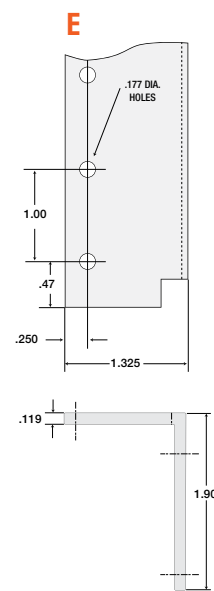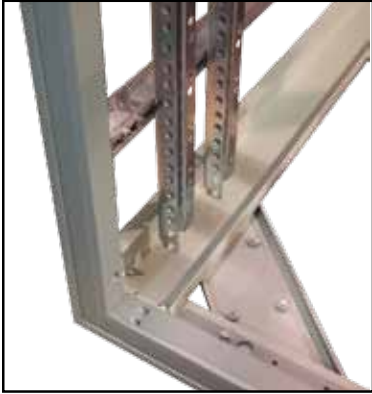
Finish: ASTM-B633 Type III Bright Zinc.

A
.281 DIA. HOLES
.50
.625
.625
.220
.250
.821
.075
.78
1.33
.60
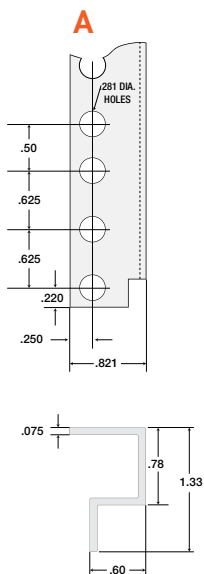
Standard (SR)
14 gauge (.075" THK.) CRS
11 gauge Heavy Duty also available.

B
.159 DIA. HOLES
.50
.625
.625
.220
.250
.821
.119
1.90
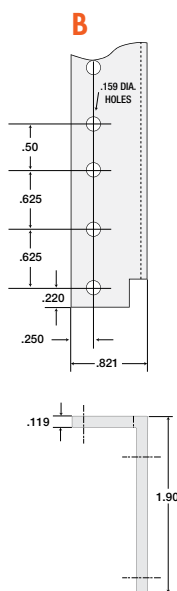
Heavy-duty Tapped (UT)
11 gauge (.119" THK.) CRS

C
.281 DIA. HOLES
.50
.625
.625
.220
.250
.821
.119
1.90

Heavy-duty Punched (HD)
11 gauge (.119" THK.) CRS

D
.159 DIA. HOLES
.50
.625
.625
.220
.250
.821
.119
1.90

Heavy-duty Tapped (HT)
11 gauge (.119" THK.) CRS

E
.177 DIA. HOLES
1.00
.47
.250
1.325
.119
1.90

Telecom Industry (TI)
11 gauge (.119" THK.) CRS
(22.31" mounting centers for 24" wide cabinets only)

F
.281 DIA. HOLES
.50
.625
.625
.310
.250
.821
.119
1.90
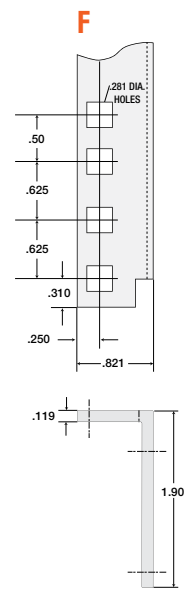
IEC 60297-2 (EU)
Square 11/14 ga
(L-shape)

Optima • Stantron
An Elma Company

RECESSED PANEL MOUNTING RAIL OPTION:

- Mounting rails may be located in fixed position on vertical supports or in adjustable position, recessed on front-to-rear stiffener
- Standard, heavy-duty punched, heavy-duty tapped, and telecom industry mounting rails can be recessed
- Infinite location adjustment

CUSTOM OPTIONS:

Custom rail configurations are also available (sample[s] shown). For more information please consult Sales

ORDERING INFORMATION: INDIVIDUAL RAILS [PAIRS]

MOUNTING RAILS – PANEL/CHASSIS MOUNTING (pairs):

Additional 14 ga. rails and 11 ga. rails are available. Installation requires two additional pair of front-to-back stiffeners (not provided). Required hardware is included with rails.

Silkscreen Numbering Bright Zinc Rail.

FRAME SIZE:			STANDARD (U-shape)	HEAVY-DUTY Tapped (U-shape)	HEAVY-DUTY Punched (L-shape)	HEAVY-DUTY Tapped (L-shape)	IEC 60297-2 Square 11/14 ga (L-shape)
INCHES	MM	U	MODEL NO.	MODEL NO.	MODEL NO.	MODEL NO.	MODEL NO.
21.00	533.40	12	R-21SR	R-21UT	R-21HD	R-21HT	R-21EU
22.75	577.85	13	R-22SR	R-22UT	R-22HD	R-22HT	R-22EU
28.00	711.20	16	R-28SR	R-28UT	R-28HD	R-28HT	R-28EU
35.00	889.00	20	R-35SR	R-35UT	R-35HD	R-35HT	R-35EU
42.00	1066.80	24	R-42SR	R-42UT	R-42HD	R-42HT	R-42EU
52.50	1333.50	30	R-52SR	R-52UT	R-52HD	R-52HT	R-52EU
61.25	1555.75	35	R-61SR	R-61UT	R-61HD	R-61HT	R-61EU
70.00	1778.00	40	R-70SR	R-70UT	R-70HD	R-70HT	R-70EU
77.00	1955.80	44	R-77SR	R-77UT	R-77HD	R-77HT	R-77EU

Note: When using L-shaped rails, adapter brackets are required for installation of accessories to the rails.

HW-77 hardware is required.

TELEPHONE INDUSTRY (L-shape) TI:

INCHES	MM	U
70.00	1778.00	40
77.00	1955.80	44

REDUCER RAIL (L-shape) TI:

INCHES	MM	U
70.00	1778.00	40
77.00	1955.80	44

Reducer Rail Bright Zinc or painted as shown

RECESSED RAIL KIT: 2x stiffeners and hardware for recessing front and rear rails

PART #	SIZE
RR-24-K	24"
RR-30-K	30"
RR-36-K	36"

ORDERING INFORMATION:

[1] [2] – [3] [4] [5] [6] – [7]

1,2 > BASE TYPE	5,6 > WIDTH	7,8 > DEPTH	9 > COLOR
BS > Standard	**19** > 19" (17.81"/ 452.4mm)	**24** > 24" (609.6mm)	**1** > Black (207)
CE > Cable egress	**24** > 24" (22.81" / 579.4mm)	**30** > 30" (762.0mm)	**2** > Sky blue (210)
PC > Caster plate	**ZZ** > Custom	**36** > 36" (914.4mm)	**3** > White (931)
ZZ > Custom		**42** >42" (1066.8mm)	**4** > Deep charcoal (209)
		ZZ > Custom	**5** > Light gray (201)
			6 > Beige (205)
			Z > Custom

A

B

C

STANDARD OPTIONS R, S, AND M SERIES:

BASE (16 GA. CRS PAINTED)

- A) Solid
- B) Cable egress
- C) 10" anti-tilt stabilizer extensions

CUSTOM OPTIONS:

- Bolt-Down provision - Base (BD); 11 Ga. CRS (.119 THK)
- Painted (NEMA)
- Painted over zinc plating (RFI)
- Non-gasketed & NEMA 12/UL 508 version
- Shock isolators; below or above
- Fork-lift (side or front)

*Custom examples of forklift
and shock isolator configurations*

BASE OPTIONS ORDERED SEPARATELY:

- Caster plate
- Casters
  NOTE: Casters increase cabinet height by 1.72" and caster brackets restrict access through bottom panel.
- Levelers
- Levelers and casters

TOP PANELS (BASIC FRAME CONFIGURATION - SCOPE OF SUPPLY)

Optima•Stantron
An Elma Company

ORDERING INFORMATION:

| 1 | 2 | – | 3 | 4 | 5 | 6 | – | 7 |

1,2 > TOP PANEL TYPE

TS	> Solid (TS)
PT	> Perforated (PT)
PG	> Pagoda (PG)
TE	> Cable egress
TF	> Fan (TF)
XT	> Not installed (XT)
ZZ	> Custom

3,4 > WIDTH

19	> 19" (17.81"/ 452.4mm)
24	> 24" (22.81" / 579.4mm)
ZZ	> Custom

5,6 > DEPTH

24	> 24" (609.6mm)
30	> 30" (762.0mm)
36	> 36" (914.4mm)
42	>42" (1066.8mm)
ZZ	> Custom

7 > COLOR

1	> Black (207)
2	> Sky blue (210)
3	> White (931)
4	> Deep charcoal (209)
5	> Light gray (201)
6	> Beige (205)
Z	> Custom

A

B

C
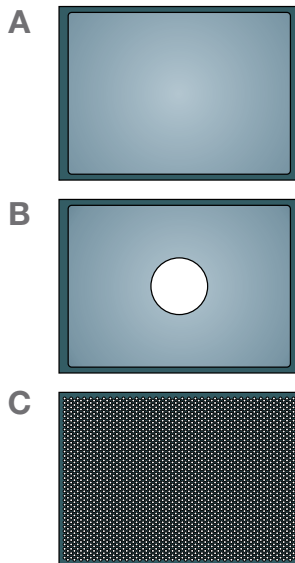
STANDARD OPTIONS:

Independent, removable side panels are designed for labor-saving assembly and service. .

A   Solid
B   Solid with cut-out for fan
C   Perforated
D   Pagoda

D
Pagoda style cabinet

E

F

G
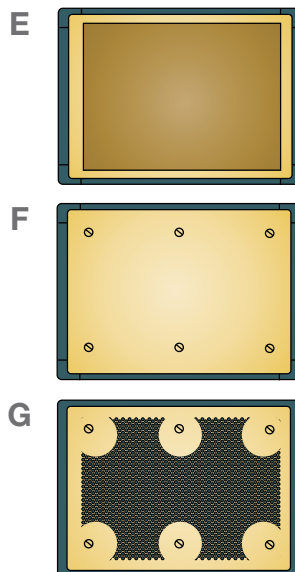
QUICK-RELEASE TOP PANELS:

E   Fixed
F   Solid quick release
G   Perforated quick-release top (PQ)
H   Mushroom Top (MT) ventilated drip-resistant (NEMA 12/UL 508 version)

H
F Series style cabinet

25

ORDERING INFORMATION:

| 1 | 2 | 3 | 4 | – | 5 | 6 | 7 | 8 | – | 9 |

1,2 > BOTTOM PANEL TYPE	3,4 > VENTING	5,6 > WIDTH	7,8 > DEPTH	9 > COLOR
RO > Unshielded	**PS** > Solid	**19** > 19" (17.81"/ 452.4mm)	**24** > 24" (609.6mm)	**1** > Black (207)
SO > Shielded	**PP** > Perforated	**24** > 24" (22.81" / 579.4mm)	**30** > 30" (762.0mm)	**2** > Sky blue (210)
MU > Unshielded, seismic	**CE** > Cable Egress	**ZZ** > Custom	**36** > 36" (914.4mm)	**3** > White (931)
MS > Shielded, seismic	**ZZ** > Custom		**42** >42" (1066.8mm)	**4** > Deep charcoal (209)
F4 > F4 Series (standard)			**ZZ** > Custom	**5** > Light gray (201)
F5 > F5 Series (EMC shielded)				**6** > Beige (205)
F6 > F6 Series (NEMA 12)				**Z** > Custom
ZZ > Custom				

A

B

C

D
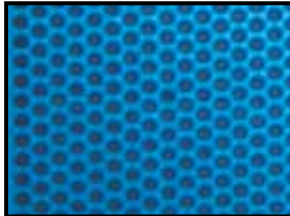
STANDARD OPTIONS R, S, SEISMIC:

A) Solid (shielded and unshielded).

B) Cable egress. (NEMA 12/UL 508 version)

   NOTE: Shielded cable egress bottom is custom , consult factory.

C) Perforated.

D) Solid with cable exit.

SIDE PANELS (FRAME COMPONENTS - ENHANCED SCOPE OF SUPPLY)

Optima•Stantron
An Elma Company

ORDERING INFORMATION (PAIRS):

[1] [2] [3] [4] — [5] [6] [7] [8] — [9]

1,2 > SIDE PANEL TYPE	3,4 > STYLE	5,6 > HEIGHT	7,8 > DEPTH	9 > COLOR
RO > Unshielded	SF > Fixed	21 > 12U (21.12" / 536mm)	24 > 24" (609.6mm)	1 > Black (207)
SO > Shielded	SL > Lift Off	28 > 16U (28.12" / 714mm)	30 > 30" (762.0mm)	2 > Sky blue (210)
MU > Unshielded, seismic	QD > Quick Disconnect	35 > 20U (35.12" / 892mm)	36 > 36" (914.4mm)	3 > White (931)
MS > Shielded, seismic		42 > 24U (42.12" / 1069mm)	42 >42" (1066.8mm)	4 > Deep charcoal (209)
F4 > F4 Series (standard)		52 > 30U (52.12" / 1336mm)	ZZ > Custom	5 > Light gray (201)
F5 > F5 Series (EMC shielded)		61 > 35U (61.38" / 1559mm)		6 > Beige (205)
F6 > F6 Series (NEMA 12)		70 > 40U (70.12" / 1781mm)		Z > CUSTOM
ZZ > Custom		77 > 44U (77.12" / 1958mm)		
		ZZ > Custom		

B

STANDARD OPTIONS:

Independent, removable side panels are designed for labor-saving assembly and service.

A) Fixed side.
B) Lift off.
C) Server lift off with lock.

D,E

QUICK DISCONNECT FASTENERS:

D) NEMA 12/UL 508, polyamide, black finish.
E) Non-Gasketed, polyamide, black finish.
F) EMI/RFI, zinc die-cast, chrome finish with ground nut.
G) Unshielded, zinc die-cast, chrome finish with ground nut.

G

INTERIOR FASTENER DESIGN:

H) Zinc die cast, chrome finish with rubber washer.

H

27

ORDERING INFORMATION: (INDIVIDUAL DOORS)

`1  2 – 3  4  5  6 – 7  8 – 9  10 – 11`

1,2 > DOOR TYPE

R SERIES (RC / RA / RB)

DA	> Unshielded, RA Series (DA)
DX	> Unshielded, RC Series (D)
AP	> Unshielded, RA acrylic (DAP)
DP	> Unshielded, RC acrylic (DP)

S SERIES (SC / SA)

AS	> Shielded, SA Series (SDAS or SDAP)
CS	> Shielded, SC Series (SDAS or SDAP)
AH	> Honeycomb SA Series (SDAH)
CH	> Honeycomb SC Series (SDCH)
AB	> HC, Blower SA Series (SDAB)
CB	> HC, Blower SC Series (SDCB)

M SERIES
MS SERIES

MU	> Unshielded, seismic
MS	> Shielded, seismic

F SERIES

F4	> No gasket
F5	> EMC, shielded
F6	> NEMA
FB	> Glazed, NEMA
FC	> Glazed EMC
ZZ	> Custom

3,4 > HEIGHT

21	> 12U (21.12" / 536mm)
28	> 16U (28.12" / 714mm)
35	> 20U (35.12" / 892mm)
42	> 24U (42.12" / 1069mm)
52	> 30U (52.12" / 1336mm)
61	> 35U (61.38" / 1559mm)
70	> 40U (70.12" / 1781mm)
77	> 44U (77.12" / 1958mm)
ZZ	> Custom

5,6 > WIDTH

19	> 19" (17.81"/ 452.4mm)
24	> 24" (22.81" / 579.4mm)
ZZ	> Custom

7,8 > HINGE SIDE

LH	> Left hinged
RH	> Right hinged

9, 10 > VENTILATION

XX	> Solid
TV	> Vented top
BV	> Vented bottom
FV	> Vented Top & Bottom
PV	> Perforated insert

11 > COLOR

1	> Black (207)
2	> Sky blue (210)
3	> White (931)
4	> Deep charcoal (209)
5	> Light gray (201)
6	> Beige (205)
Z	> Custom

* SA frame configured to mount front and rear doors. Consult factory for no door or single door option.

SOLID DOORS: (shielded and unshielded)

- All unshielded doors include concealed hinges and retractable flush mount handle with key lock
- Shielded doors feature lift-off hinges, 3 point locking system (on doors 42" & taller) and handle with key lock
- NEMA 12/UL 508 - 14 gauge CRS (.075" THK)
- Non-gasketed - 14 gauge CRS (.075" THK)
- 14 gauge CRS (.075" THK) ASTM-B633 Type III bright zinc plated

---
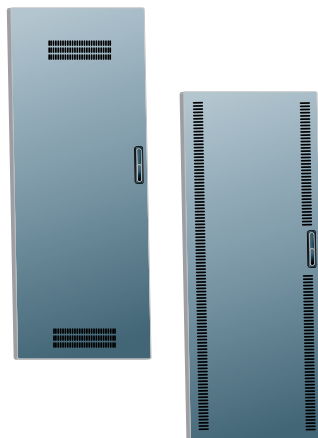
VENTED DOORS: (shielded and unshielded)

- Top or bottom vented doors include 2 rows of slots providing 24 sq. inches of open area
- Fully top & bottom vented doors have a graduated number of slot rows, depending on the height of the door. Slots are 1.5" high x .15" wide, each row containing 54 slots.

Door Panel Height	No. Rows of Slots	Sq. Inch Opening
21" – 28"	2 top & 2 bottom	48"
35" – 42"	3 top & 3 bottom	72"
52" – 77"	4 top & 4 bottom	96"

- Full length side venting top to bottom

Optima•Stantron
An **Elma** Company

EMI/RFI Version:

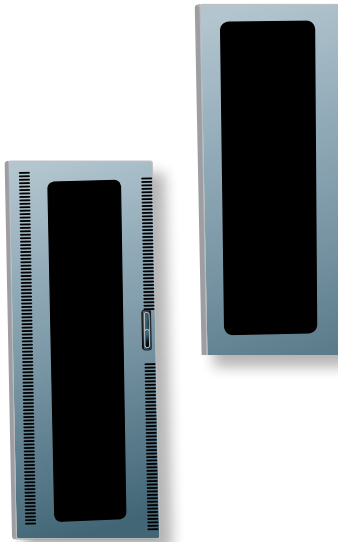- Plenum spot-welded to door
- 16 gauge CRS, perforated
- .187" diameter holes on 45° staggered centers

With Blower:

- Bottom (blower with honeycomb)
- Fully (bottom blower and honeycomb vents top and bottom)

Perforated Doors:

- Fully vented door for maximum ventilation
- Screen insert
- Open area maximized for airflow

Glazed (Acrylic) Doors: (shielded and unshielded)

Glazing Material: – EMI/RFI

- .062 & .187" thick acrylic panes with mesh insert (54" opening only)
- Conductive media blackened copper 100 OPI
- Color: clear
- UL 94 HB rated
- Fully laminated design
- Window clamped into position
- UL 94 V0 available upon request

Glazing Material: – NEMA 12/UL 508

- 3/16" thick acrylic
- Color: 103-2 grey
- UL 94 HB rated
- Bonded to door frame using VHB tape
- UL 94 V0 available upon request

    Note: On unshielded glazed door lock is a standard push button.

Short Doors with I/O Panels: (shielded and unshielded)

- Sized to suit your specific cable exit/entry requirements
- Custom punching available
- Multiple I/O panel configurations possible: top-mounted, bottom-mounted or both
- May be vented, glazed or combination of both
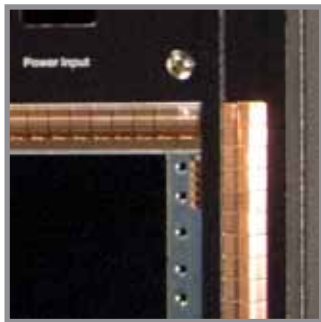- EMI/RFI and NEMA 12/UL 508 integrity is maintained

ORDERING INFORMATION:

1

| 1 > Basic (BeCu) |
| 2 > Advanced EMC |
| 3 > MIL Level |
| X > Not installed |
| Z > Custom |

NOTE: See Accessories page 47 for specific styles, thickness

FEATURES --STANDARD:

- Finish:
  Iron phosphate coating, masking & paint
- Gasket:
  Beryllium copper (sawtooth or spring) fingers between — side panels doors, top and bottom panels
- Ventilation:
  Standard perforated plenum behind standard vents
- Effectiveness:
  Designed to meet 40dB, 30Mhz – 1000Mhz

End Profile View

Full View

FEATURES --ADVANCED:

- Finish:
  Aluminum parts undergo chemical conversion per MIL-DTL-5541 before masking and painting. Steel parts are zinc plated per ASTM-B633, type III, SC1 before masking and printing (Or equivalent processes)
- Gasket:
  Soft shield gasket between — side panels, doors, top and bottom panels
- Ventilation:
  Standard perforated plenum behind standard vents (optional honeycomb)
- Effectiveness:
  Designed to meet 60dB, up 1Ghz (higher attenuations possible)
 75Db - 90Db with optional honeycomb

FEATURES --MIL STANDARD:

- Finish:
  Aluminum parts undergo chemical conversion per MIL-DTL-5541 before masking and painting. Steel parts are zinc plated per ASTM-B633, type III, SC1 before masking and printing (Or equivalent processes)
- Gasket:
  MIL grade, tin coated, copper clad, steel wire mesh knitted over double silicon elastomer core or silver plated aluminum particles embedded in silicon between — side panels, doors, top and bottom panels
- Ventilation:
  Standard honeycomb filters over all openings
- Effectiveness:
  Designed to meet MIL-STD 461

SHIELDING / TESTING & CERTIFICATION

Optima•Stantron
An Elma Company

SUPERIOR SHIELDING EFFECTIVENESS (SC & SA)

The numbers tell the story. When an FCC recognized independent lab tested Optima Stantron vertical cabinets, the results showed a nominal 46 dB shielding effectiveness throughout the 30 to 1,000 MHz frequency range. Attenuation values at varied frequencies ranged up to 67 dB. This meets and exceeds the shielding standards set forth in FCC Docket #20780, Part 15, Subpart J. Design features like the examples shown here and Optima Stantron's experience in building quality enclosures for over forty years are proof of this superior design.
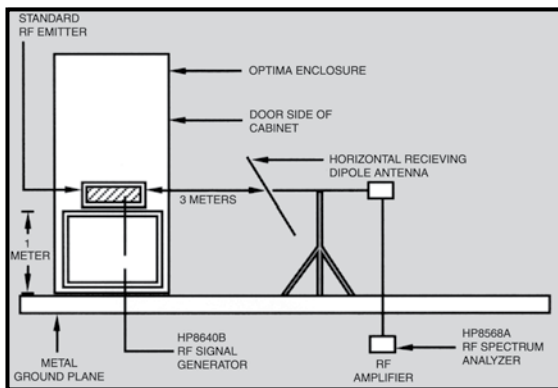
TEST METHOD HIGHLIGHTS (SC & SA)

Shielding effectiveness was calculated by subtracting RF levels measured with an RF emitter inside the cabinet from the RF levels recorded with emitter in the open field. RF signals from emitter were measured and recorded at various levels utilizing a calibrated dipole receiving antenna and a spectrum analyzer. A copy of the complete Product Qualification Approval Report (#63082) is available upon request.

E.M.I. Cabinet Attenuation
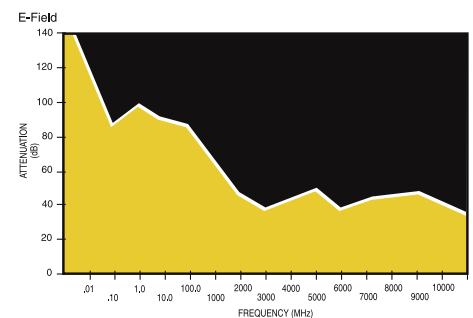
Independent Lab Tested Results
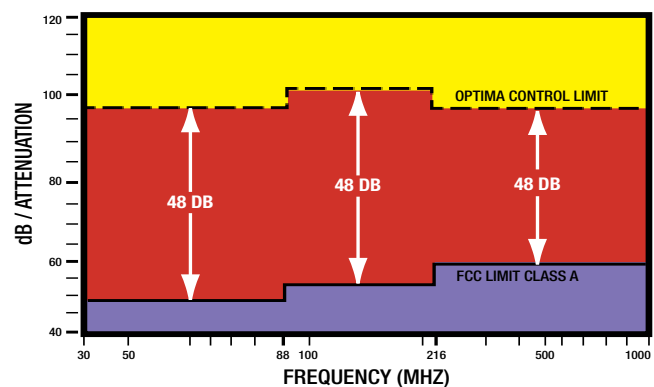
M1-SERIES: EMI/RFI test data avaliable upon request, please contact Optima Stantron sales.
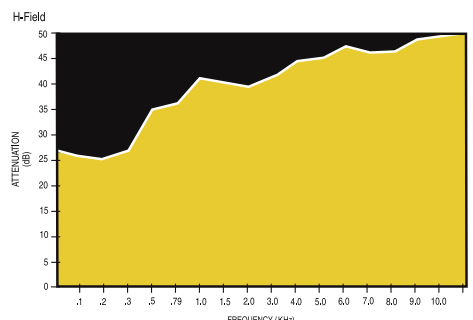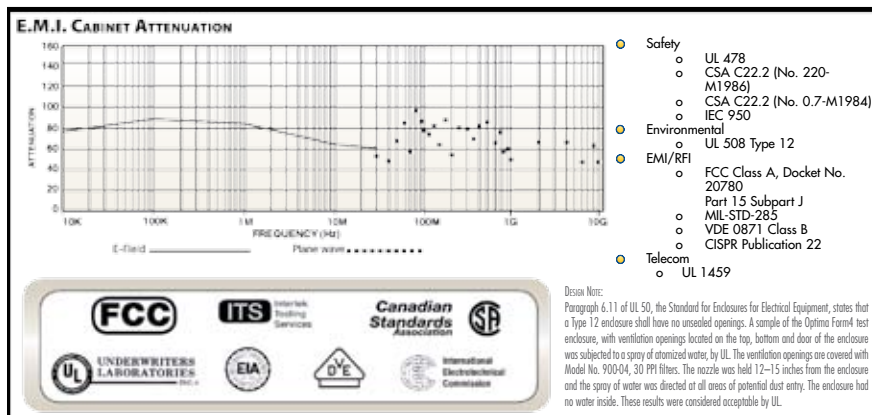

MS-SERIES:

Independant Lab Tested at NTS. MS-701930, including front and rear doors, and a connector panel. Additional test data available for testing to MIL-461, (2010/2011). Contact Optima Stantron sales.

F-SERIES:

Safety
- UL 478
- CSA C22.2 (No. 220-M1986)
- CSA C22.2 (No. 0.7-M1984)
- IEC 950

Environmental
- UL 508 Type 12

EMI/RFI
- FCC Class A, Docket No. 20780 Part 15 Subpart J
- MIL-STD-285
- VDE 0871 Class B
- CISPR Publication 22

Telecom
- UL 1459

DESIGN NOTE:
Paragraph 6.11 of UL 50, the Standard for Enclosures for Electrical Equipment, states that a Type 12 enclosure shall have no unsealed openings. A sample of the Optima Form4 test enclosure, with ventilation openings located on the top, bottom and door of the enclosure was subjected to a spray of atomized water, by UL. The ventilation openings are covered with Model No. 900-04, 30 PPI filters. The nozzle was held 12–15 inches from the enclosure and the spray of water was directed at all areas of potential dust entry. The enclosure had no water inside. These results were considered acceptable by UL.

31

Optima Stantron's vast selection of accessories enhances the versatility of our modular products. These include thermal, power, and cable management components as well as drawers, shelves, slides, casters, hardware, and more. Optima Stantron uses superior quality components in a variety of size, types, and options.

Contact Optima for more details or customization options.

Optima•Stantron
An Elma Company

AIR FLOW / COOLING:

AIR CONDITIONER   VERTICAL CABINETS

- Utilizes environmentally safe refridgerant
- Designer appearance with no visible fasteners
- Can be mounted on side or door of enclosure
- 600 CFM blower
- Rated voltage 115V, 60Hz
- Full load: 14 Amps
- Weight: 118 lbs
- Dimensions: 29.5" H x 15.75" W x 8.63" D

BLOWERS   VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES

Packaged centrifugal blowers for pressurizing consoles, computers and electronic systems with cool, filtered air. Includes easy-to-remove, washable dust filter, 3-conductor AC cord and removable, brushed aluminum grille. Installs on 19" panel mounting rails.

PANEL HEIGHT	CFM AT 0"	MODEL
5.25"(133.35)	300	CB-300A
7.00" (177.80)	330	CB-360A
8.75" (222.25)	500	CB-500A

FAN – EXHAUST   VERTICAL CABINETS

Model No. CF-400X
This UL approved exhaust fan is typically installed in cabinet top panels, but has many applications. 115 volt, 50/60 Hz single phase, airflow can be reversed for intake or exhaust by turning the fan end on end. This fan requires a 10" diameter area and extends approximately 4" inside the panel. With minimum acoustical disturbance, this slow-speed fan reduces operating noise while delivering 535* CFM. Two zinc plated finger guards are supplied.

Fan has two leads, 24" long.
*At 60Hz, 0 static pressure

NOTE: *Power cord not included, can be ordered as special (3ft. and 6ft. standard)*

FAN PACKS   VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES

A range of UL listed fans prepackaged for 19" mounting with CFM from 64 to 466. Fans are mounted on panels with finger guards installed. 0.125" aluminum panels are 19" wide. Fans are 115 volt, 50/60 Hz. For complete specifications, request data sheet.

To order: *Specify model number and panel color.*

NOMINAL PANEL HEIGHT	TOTAL CFM	MODEL NO.
3.50" (88.90)	72	FP3-64
3.50" (88.90)	108	FP3-96
5.25" (133.35)	212	FP5-212
7.00" (177.80)	466	FP7-466

Fan Packs (clockwise from top right) FP7-466, FP3-96, FP5-212, FP3-64

AIR FLOW / COOLING:

FAN TRAYS (UNSHIELDED ONLY) *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

All fan trays feature:
- Standard 19" and 24" EIA rack mounting – 1U panel height
- Exhaust guards
- UL recognized and CSA certified fans
- 115 VAC molded cord set
- 115 VAC 50/60 Hz sleeve bearing fans.

The FTA-619 features a modular design with separate fan plates and extruded side rails to allow full adjustment of fan plates and rear support brackets, which adjust from 18.38" to 26.00".

No. FANS	TOTAL CFM	MODEL NO.
3	318	FTA-319
6	636	FTA-619
9	954	FTA-919

FANS – TUBEAXIAL *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

MODEL NO. CF-35
This fan is a 32* CFM tubeaxial fan only 3-1/8" square x 1.64" deep, making it ideal for flushing small instrument cases or cooling "hot spots" in large assemblies with a minimal loss of space. Available in black only.

MODEL NO. CF-90 (NOT SHOWN)
This fan is a 105* CFM tubeaxial fan requiring 4.7" x 4.7" area including the grille. Available in black only. Supplied with installation kit and washable filter.
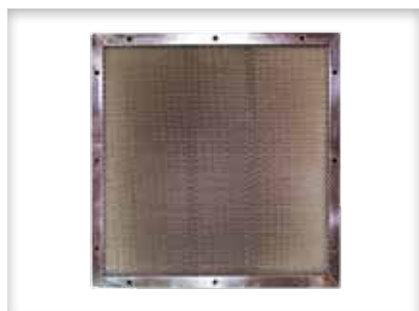*At 60Hz, 0 static pressure.

FILTERS – DUST *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Made of the highest quality materials, these filters come in a multiple size configurations to meet any application required where dust or debris may be an issue.

For specific information consult the factory.

FILTERS – EMI/RFI *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

These honeycomb filters will meet a high level of EMI/RFI shielding requirement. Multiple standard sizes are available as well as custom if the need arises. Also available with integrated dust filter.

For specific information consult the factory.

Optima•Stantron
An Elma Company

AIR FLOW / COOLING:
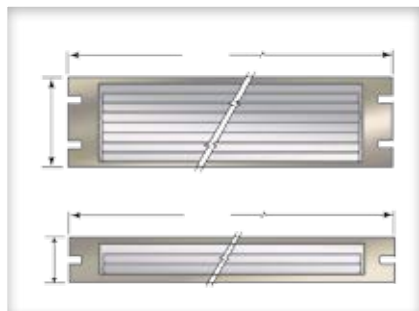
GRILLE – LOUVERED PLASTIC   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Corrosion resistance, high impact strength and light-weight are features of these grilles made of polycarbonate resin. Features removable, washable media filter. Mounting hardware supplied. Available in all standard Optima colors.
Specs: 110° UL continuous use rating; 94V-2 flame retardant rating per UL Standard 94; dimensional stability from -60 ° to + 250 ° F.

DIMENSIONS	VENTILATING AREA	MODEL NO.
1.75" x 19"	6.0 sq. in.	GP-119
(44.45) x 482.60)	(152.40)	
3.50" x 19"	16.0 sq. in.	GP-319
(88.90) x 482.60)	(406.40)	
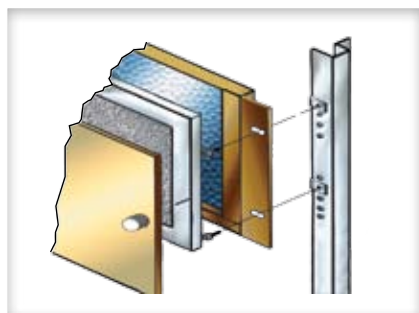
GRILLE AND FILTER ASSEMBLIES   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Grille and Filter Assemblies mount to the standard 19" rails and are similar to those supplied on the blowers. Features easily removable, washable media filter. For complete specifications, request data sheet.

To Order: Specify model number and grille color.

| PANEL HEIGHT	MODEL NO.
7.00" (177.80)	GF-719
8.75" (222.25)	GF-819

GRILLE–VENTILATING   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Aluminum extrusion ventilating grille provides an attractive outlet/inlet for cooling air. The grille is mounted to the panel mounting rail and is 3.5" high. Large openings (35 square inches open area) allow free airflow with a minimum of boundary friction. Two or more can be stacked. Finished to match your color scheme. For complete specifications, request data sheet.

To order: Specify model number and color desired.

CABINET	19" WIDTH MODEL NO.	24" WIDTH MODEL NO.
RC Series	G-319	G-324
RA Series	GA-319	GA-324
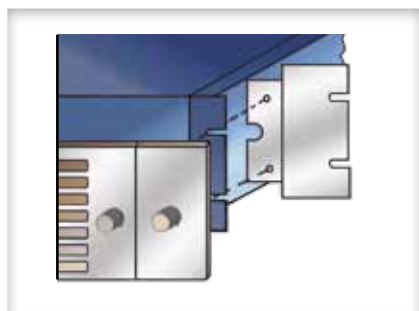
GRILLE ADAPTERS – 19" TO 24"   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES CASES(SPECIFY COLOR)*

Used to install 19" panel width blowers, fan, and grille/filter assemblies in 24" panel width enclosures. Adapters are non-structural, and blower must be supported at rear.
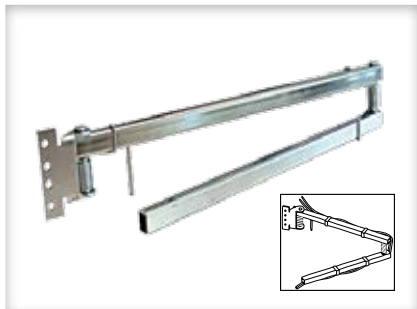
HEIGHT	MODEL NUMBER
5.25" (133.35mm)	AD-5
7.00" (177.80mm)	AD-7
8.75" (222.25mm)	AD-8

CABLE MANAGEMENT:

CABLE RETRACTOR   *VERTICAL CABINETS, DESKS*

The cable retractor can be engineered for server, data storage, or any other application that requires prevention of cable tangling.
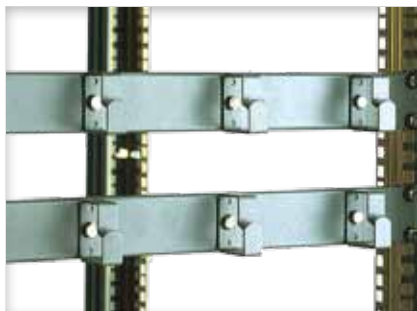
PART #:   0610162

HORIZONTAL CABLE ORGANIZERS   *VERTICAL CABINETS, DESKS*

Provides front to rear mangement, and are available in standard depth options.

PART #: HC-24
HC-30
HC-36

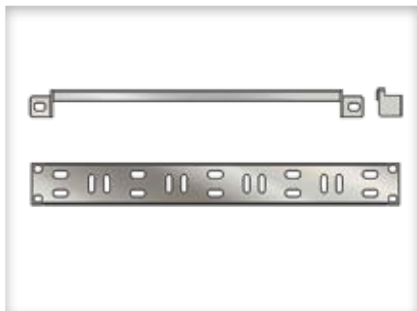### HORIZONTAL CABLE MANAGEMENT BAR AND PANEL   *VERTICAL CABINETS*

Spans the width of the cabinet, providing support and strain relief.

PART #:   CM-19
CM-24
CP-19
CP-24

HORIZONTAL CABLE MANAGEMENT BRUSH STRIP 1U x 19"   *VERTICAL CABINETS*

Promotes proper airflow while allowing cables to be passed from the front to the rear of the rack.

PART #:   B-0119

Optima•Stantron
An Elma Company

CABLE MANAGEMENT:

PANDUIT   *VERTICAL CABINETS*

Vertical cable channel 3″wide X 3″ deep.

Custom sizes available upon request.

PART #:		PART #:	
	PO-2133		PO-5233
	PO-2833		PO-6133
	PO-3533		PO-7033
	PO-4233		PO-7733

LACING BAR   *VERTICAL CABINETS*

Provides convienent vertical tie down locations within cabinet.

PART #:		PART #:	
	LB-21		LB-52
	LB-28		LB-61
	LB-35		LB-70
	LB-42		LB-77

UPPER JUMPER BAR   *VERTICAL CABINETS*

Provides patch cord management within data cabinets.

For specific information consult the factory.

HORIZONTAL CABLE MANAGER   *VERTICAL CABINETS, DESKS*

Available in widths to match standard equipment racks, the high volume cable manager can be either rack or wall mounted.

For specific information consult the factory.

RACKMOUNT D-RING   *VERTICAL CABINETS, DESKS*

Individual ring can be mounted as needed for organizing cables

For specific information consult the factory.
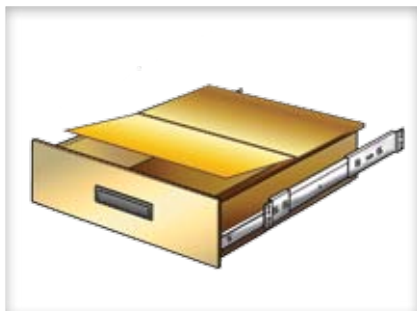
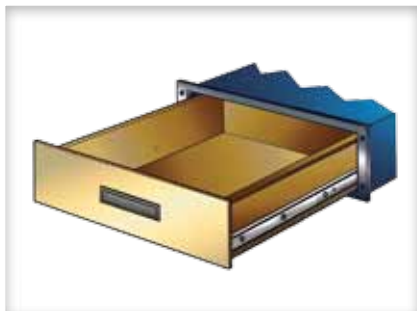## DRAWERS, SHELVES, SLIDES, WRITING SURFACE:

DRAWERS – UNSHIELDED   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Drawers are constructed of 20 ga. CRS and are furnished with ball bearing chassis slides to provide smooth operation. Provided with black, flush-mount handle. Usable depth 17.50" with 14" travel. Drawer with hinged steel writing surface provides 14" writing surface. Load capacity is 100 lbs.

To Order: Specify model number, color and where drawer is to be installed. If writing surface is desired, add suffix "S". If drawer is to be mounted on "L" shape rails, HW-77 hardware is required.

Cabinet Width	Panel Height	20.56" Depth Model No.	24.00" Depth Model No.	30.00" Depth Model No.
19"	3.50" (88.90)	DR-031920	DR-031924	DR-031930
19"	5.25" (133.35)	DR-051920	DR-051924	DR-051930
19"	7.00" (177.80)	DR-071920	DR-071924	DR-071930
19"	8.75" (222.25)	DR-081920	DR-081924	DR-081930
19"	10.50" (266.70)	DR-101920	DR-101924	DR-101930
24"	3.50" (88.90)	DR-032420	DR-032424	DR-032430
24"	5.25" (133.35)	DR-052420	DR-052424	DR-052430
24"	7.00" (177.80)	DR-072420	DR-072424	DR-072430
24"	8.75" (222.25)	DR-082420	DR-082424	DR-082430
24"	10.50" (266.70)	DR-102420	DR-102424	DR-102430

DRAWERS – SHIELDED   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Drawers are constructed of 20 ga. CRS and are furnished with ball bearing chassis slides to provide smooth operation. Provided with black, flush-mount handle. Usable depth 17.50" with 14" travel. Load capacity is 100 lbs.

To Order: Specify model number, color and where drawer is to be installed. If writing surface is desired, add suffix "S". If drawer is to be mounted on "L" shape rails, HW-77 hardware is required.

Cabinet Width	Panel Height	20.56" Depth Model No.	24.00" Depth Model No.	30.00" Depth Model No.
19"	3.50" (88.90)	DRF-031920	DRF-031924	DRF-031930
19"	5.25" (133.35)	DRF-051920	DRF-051924	DRF-051930
19"	7.00" (177.80)	DRF-071920	DRF-071924	DRF-071930
19"	8.75" (222.25)	DRF-081920	DRF-081924	DRF-081930
19"	10.50" (266.70)	DRF-101920	DRF-101924	DRF-101930
24"	3.50" (88.90)	DRF-032420	DRF-032424	DRF-032430
24"	5.25" (133.35)	DRF-052420	DRF-052424	DRF-052430
24"	7.00" (177.80)	DRF-072420	DRF-072424	DRF-072430
24"	8.75" (222.25)	DRF-082420	DRF-082424	DRF-082430
24"	10.50" (266.70)	DRF-102420	DRF-102424	DRF-102430

Optima • Stantron
An Elma Company

DRAWERS, SHELVES, SLIDES, WRITING SURFACE:

T1U-155 / T2U-155 SLIDES   *VERTICAL CABINETS, DESKS*

The T2U-155 rack shelf is a 2U high standard light duty electronic rack shelf that ships as a complete assembly as shown and easy to install in most EIA racks. The shelf assembly includes 370 series slides which lock open, are quick disconnectable, and have adjustable brackets attached. The rack shelf assembly has front mounted panel fasteners to lock the tray closed, and has a load rating of 165 lbs per shelf.

- Slides: 370 Series steel slides
- Full extension, Lock open, ball bearing
- Shelf: Symmetrical and can be mounted as a shelf or a tray (slots are sized for #10 hardware)
- Materials: Slide: Cold rolled steel; Shelf: Black power coated
- Finish: Slides: Commercial zinc; Shelf: Black powder coated
- Load rating: Up to 165 lbs
- Front panel fasteners lock tray closed
- Depth: 20" / 22" /24"

T1U-200 / T2U-200 SLIDES   *VERTICAL CABINETS, DESKS*

The T1U-200 rack shelf is a 1U high ruggedized electronic rack shelf that ships as a complete assembly as shown and easy to install in most EIA racks. The shelf assembly includes 170 series slides which lock open, can be quick disconnect and have adjustable brackets. As with most Jonathan aluminum slides, these slides are rugged and suitable for applications with heavy shock and vibration. The shelf assembly has front mounted panel fasteners to lock the tray closed, and has a load rating of 125lbs per shelf. Optional upgrades such as cable management, anti-slip pads or server straps are available upon request.

- Finish: Slides: Anodized per MIL-STD-8625; Shelf: Black powder coated
- Corrosion Resistant

*For ordering information Please Consult Sales.*

SHELF – STORAGE (SOLID FIXED)   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Sturdy shelf formed of one piece of 16 ga. CRS bolts to panel mounting rails. Supports heavy chassis or power supplies or provides storage for tools, test leads, chart paper, etc. May be mounted with flange up to provide lip or down for a smooth surface. Shelf will support 50 lbs. Specify color. If used with L-shaped rails, HW-77 hardware required. Materials: 16 ga. CRS.

DEPTH	19" WIDTH MODEL NO.	24" WIDTH MODEL NO.
20" (508.00)	SS-1920	SS-2420
24" (609.60)	SS-1924	SS-2424
30" (762.00)	SS-1930	SS-2430

SHELF – STORAGE (HEAVY-DUTY PERFORATED)   *VERTICAL CABINETS, DESKS*
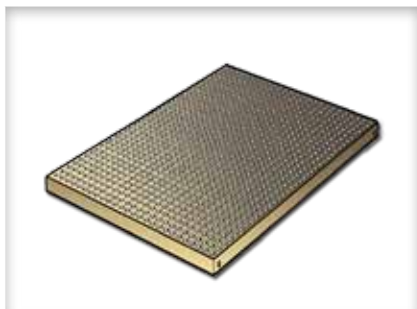
Heavy-duty, ventilated shelf formed of 13 ga. CRS bolts to panel mounting rails. Supports up to 80 lbs. Shelf has 7/64" diameter holes on 11/64" centers —35% open area. Specify color. If used with L-shaped rails, HW-77 hardware required.

DEPTH	19" WIDTH MODEL NO.	24" WIDTH MODEL NO.
24" (609.60)	SS-1924-PHD	SS-2424-PHD

DRAWERS, SHELVES, SLIDES, WRITING SURFACE:

SLIDES – BALL BEARING (PAIR) *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Ball Bearing Slides are complete with brackets and all hardware for attachment to cabinet Maximum load is 100 lbs. centered. Ball bearing slides travel 14" from front panel.

To Order: Specify model number.
If slides are to be mounted on L-shaped rails, HW-77 hardware is required.

DEPTH	MODEL NO.
20" (508.00)	DRS-20
24" (609.60)	DRS-24
30" (762.00)	DRS-30

SLIDES –FULL EXTENSION QUICK DISCONNECT (PAIR) *VERTICAL CABINETS, DESKS*

Friction slide yellow zinc steel slides., Ideal for mounting chassis into cabinets. 85lb. capacity for use on all heights; 125lb. capacity for use on 4U, 5U, 6U heights only.
To Order: Specify model number.
If slides are to be mounted on L-shaped rails, HW-77 hardware is required.

Travel	
85 lbs.	125 lbs.
19"	18"
23"	26"
25"	--

MODEL NO.	SLIDE LENGTH	MAX. EXTENSION	CABINET DEPTH
IMS-85-A-19	18"	19"	20"
IMS-85-B-19	18"	19"	24"
IMS-85-C-25	24"	25"	30"
IMS-125-A-18	16"	18"	20"
IMS-125-B-18	16"	18"	24"
IMS-125-C-26	26"	26"	30"

370QD STEEL SLIDE SERIES *VERTICAL CABINETS, DESKS*

Jonathan Engineered Solutions offers a complete line of high-quality industrial grade steel drawer slides. The 370 series steel slides are 2.00" x .50" wide and manufactured in carbon steel with standard zinc plating. The 370 is a section slide with a load rating of up to 180lbs.. *Contact sales for order information*

- Material: Steel
- Load Rating: 120 to 180 lbs
- Lengths: 10" to 30"
- Travel: 11" to 31"
- Clear zinc finish

515QD SLIDE SERIES *VERTICAL CABINETS, DESKS*

The Jonathan 515QD slide series is a 3 section slide, .38" wide x 1.70" tall. The 515QD has a load rating of up to 135 lbs. and is manufactured using a high strength aluminum alloy with MIL-A-8625A, Type II, Class 1 finishes. *Contact sales for order information*

- Material: Aluminum 6061-T6
- Lengths: 10" to 30"
- Travel: Full Travel 10" to 30"
- Load Rating: Up to 135 lbs.
- Finish: Anodized clear per MIL-STD-8625
- Slide lock open
- Disconnectable inner member
- Slide members are interchangeable
- Slide can be hard mounted or rack mounted
- Corrosion resistant

Optima•Stantron
An Elma Company

DRAWERS, SHELVES, SLIDES, WRITING SURFACE:

RUGGED SLIDE RAILS (PAIR) *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

- Securely locked in extended position
- Quick front disconnect
- Rugged rear bracket
- 19" flanges with closed holes
- Roller assisted movement
- Made from cold rolled steel, zinc plated
- Load max. size 5 (static) 1000N (220lbs)
- Load max. size 7 (static) 800N (175lbs)

RUGGED SLIDE RAIL SIZE 5
Length with rear bracket 580-800mm (22.8" - 31.5")
Slide travel 565mm (22.2")

RUGGED SLIDE RAIL SIZE 7
Length with rear bracket 680mm-900mm (26.8"-35.4")
Slide travel 765mm (30.1")

DIMENSIONS
Height: 106.8mm/4.2"
Thickness: 10mm/0.400" (With Rear Bracket)
Thickness: 6.5mm/0.26" (Moving Parts)

STANDARD SLIDE RAILS (PAIR) *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

- Securely locked in extended position or automatic release in extended position
- Quick front disconnect
- Rear bracket
- 19" flanges with open holes
- Made from cold rolled steel
- Low friction, high-abrasive paint for corrosion-protection
- Low friction, high-abrasive paint for corrosion-protection

AUTOMATIC / LOCKED RELEASE IN EXTENDED POSITION

SLIDE RAIL SIZE 3
- Length with rear bracket 463-682mm (18.2" - 26.8")
- Slide travel 511mm (20.1")
- Auto Release: Order Number 65-051 / Securely Locked: Order Number CAE014621

Slide Rail Size 5
- Length with rear bracket 680mm-900mm (26.8"-35.4")
- Slide travel 596mm (23.5")
- Auto Release: Order Number 65-052 / Securely Locked: Order Number CAE010393

Slide Rail Size 7
- Length with rear bracket 680mm-900mm (26.8"-35.4")
- Slide travel 596mm (23.5")
- Auto Release: Order Number 65-053 / Securely Locked: Order Number CAE011080

DIMENSIONS
Height: 65mm/2.56"
Thickness: 7.5mm/0.3"
Thickness: 5.8mm/0.23" (Moving Parts)

DRAWERS, SHELVES, SLIDES, WRITING SURFACE:

SHELF – STORAGE (RETRACTABLE) *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Same as 16 ga. CRS (fixed) shelf, mounted on quick-disconnect slides. Specify color.
Note: for use with Optima 19" Instrument Cases 10" or more in height. Slides allow full extension.

DEPTH	19" WIDTH MODEL NO.	24" WIDTH MODEL NO.
20" (508.00)	WRSS-1920	WRSS-2420
24" (609.60)	WRSS-1924	WRSS-2424
30" (762.00)	WRSS-1930	WRSS-2430

WRITING SURFACE – FIXED *VERTICAL CABINETS*

Shelf / Writing Surface extends 18" in front of the cabinet and is full width of the cabinet. Entire assembly, including shelf, 7" front panel, support bars and hardware, attaches to the mounting rails. Holes in the front panel allow adjustment of shelf height to 29.38" on "RA" or "RC" series, with casters. A 19.25" panel space is available below the shelf. The shelf is packed pre assembled and ready for installation. Recommended maximum load is 100 lbs. Three-bay units available on special order. White shelf is standard.

To Order: Specify model number with prefix "WS" for "RC" Series Cabinets. Specify model number with prefix "WSA" for "RA" Series cabinets. Also specify color of filler panel.

CABINET WIDTH	SINGLE BAY MODEL NO.	DOUBLE BAY MODEL NO
19"	WS-119	WS2-11
19"	WAS-119	WSA2-119
24"	WS-119	WS2-124
24"	WAS-124	WAS2-124

WRITING SURFACE – SHIELDED RETRACTABLE *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

A 3.50" high steel sleeve is bolted to the mounting rails and shielded top and bottom with spacer bars, similar to PF panels. The writing surface is laminated particle board; white is standard. Mounted on ball bearing slides. Installation height in 1.75" increments depends on use (sitting down or standing).

To Order: Specify color of handle trim. If the cabinet has L-shaped mounting rails, add suf fix HD for adapter brackets. *Note: Retractable options require recessed rear rail for 36" deep cabinets.*

DEPTH	19" WIDTH MODEL NO.	24" WIDTH MODEL NO.
20" (508.00)	WSRF-021920	WSRF-022420
24" (609.60)	WSRF-021924	WSRF-022424
30" (762.00)	WSRF-021930	WSRF-022430

WRITING SURFACE – UNSHIELDED RETRACTABLE *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Retractable Writing Shelf operates smoothly on ball bearing slides which lock in fully extended position. Utilizes only 3.5" front panel space and extends 17.8" beyond the front panel. When installed on "RA" or "RC" Vertical Cabinets 29.38" from the floor level with casters, 21.00" of panel space is available below the shelf. Includes horizontal handle and trim strip. White shelf is standard.

To Order: Specify model number and color of trim insert. *Note: If retractable writing surface is to be mounted on L-shaped rails, add suffix "HD" to model number for adapter brackets. Retractable options require recessed rear rail for 36" deep cabinets.*

DEPTH	19" WIDTH MODEL NO.	24" WIDTH MODEL NO.
20" (508.00)	WS-021920	WS-022420
24" (609.60)	WS-021924	WS-022424
30" (762.00)	WS-021930	WS-022430

HARDWARE:

CASTERS   *VERTICAL CABINETS AND DESKS*

HW-94L
HW-63
HW-64
HW-94

Offer mobility where needed. Tested for load deflection, impact strength, rotation and mobility. Meets or exceeds ANSI and GSA specifications. *Shipped uninstalled unless specified.* For all Vertical Cabinets (set of 4)*:*

MODEL **HW-63:**   Single wheel, 3" (76.20) diameter, set of 4   supports 840 lbs., adds 1.37" (34.80) to total height of cabinet.

MODEL **HW-64:**   Single wheel, 2-5/8" (66.80) diameter, set of 4 supports 1,020 lbs., adds .94" (23.88) to total height of cabinet.

For all Desks (set of 4):

MODEL **HW-94L:**   Single wheel, 2.38" diameter, set of 4 (locking)   supports 75 lbs., adds 2.60" to total height of cabinet.

Model HW-94:   Single wheel, 2.38" diameter, set of 4 supports 75 lbs., adds 2.60 to total height of cabinet.

CASTER PLATE   *VERTICAL CABINETS ONLY*

Provides greater ease in moving a heavily loaded cabinet. Steel plate (.187") equipped with four 3.5" diameter casters (2 lock/ swivel, 2 stationary). Supports 900lbs. Overall height of Caster Plate is 4-3/4". Finished in light grey.

Depth	Model No. (19" Width)	Model No. (24" width)
24"	PC-1924	PC-2424
30"	PC-1930	PC-2430
36"	PC-1936	PC-2436

HARDWARE:

HANDLE AND LOCKING ACCESSORIES *VERTICAL CABINETS, DESKS*

Address your specific security and convenience needs with EMKA locks and handles.

ELECTRONIC LOCKING AND MOUNTING

- Keyless entry
- Wireless electronic remote access
- Keypad, prox. card
- All events logged
- Sensors to monitor & control temperature, humidity, etc
- Trigger cooling fans, audible or visual alarms
- Monitoring software included

1150 LOW PROFILE SERIES SWING HANDLE OPTIONS

- No lock
- Key locking, all keyed alike
- Key locking, keyed differently
- Pad locking with or without key
- Tool operated
- Easy change key cylinders

1150   **1155**

1155 SERIES COMBINATION SWING HANDLES

- Master key override
- Greatly simplifies key control
- Upgrades security

HINGE OPTIONS INCLUDE:

- 180° Door opening
- Easy door removal

A wide range of additional EMKA locking systems and cabinet hardware accesories are available for all of your Optima Stantron requirements, including quarter turn latches, hinges, gaskets, door stays, and drawing pockets.

LARGE VARIETY OF VERSIONS BASED ON A MODULAR SYSTEM

FLAT PUSH LATCH HANDLE *VERTICAL CABINETS*

A) STANDARD

- Left or Right Handed.
- Key locking, all keyed alike.
- Key locking, keyed differently.

B) SPECIAL EMC (CAST ALUMINUM) LOW PROFILE

- Swing handle, compression closing.
- EFI/RFI shielding.
- Key locking, keyed differently.or alike.

Optima•Stantron
An Elma Company

HARDWARE:

HW-1   HW-2   HW-52

HW-53   HW-55   HW-56

HW-60   HW-65

HW-67   HW-68

HW-76   HW-77

HW-70   HW-72   HW-75

HARDWARE KITS   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Note: Hardware for normal installation of front and rear panels (HW-1 and HW-52) is included with each cabinet. Additional hardware is available.

To Order: Specify Model Number

HW-1: Package of 100 decorative, chrome-plated Phillips head (No. 10-16 x 3/4) screws with protective nylon washers

HW-2: 100 ea. front panel clip nuts. (Optima 19" Instrument Cases only).

HW-52: Package of 100 clip nuts, used with HW-1 & HW-53

HW-53: Package of 100 screws No. 10A x 1/2 Phillips Pan head for chasis slides and support angles

HW-55: Package of 100 No. 10 internal tooth lock washers for chassis slides and support angles

HW-56: 6 each. Screws, nuts and washers (multi-bay connector kit with sides installed)

HW-60: Lifting Eyes (set of 4). Can be installed at factory in the top corners of the Vertical Cabinet frame. One set of four is capable of supporting 800 lbs
Note: Minimal encroachment of vertical space. Does not encroach panel opening.

HW-65: Removable side or top panel hardware for Vertical Cabinets (set of 4)

HW-67: Multi-bay hardware for Vertical Cabinets without inner side panels.

HW-68: Leveling Feet (set of 4). Cadmium-plated 3/8"-16 screw/pads extend to 1-1/2"

HW-70: Package of 100 decorative chrome-plated Phillips Washer head No. 10-32 x 3/4 screws with protective nylon washers

HW-72: Package of 25 sliding nuts with screws for installing additional mounting rails to cabinet on front-to-back stiffeners

HW-75: Package of 100 12-24 x 5/8" slotted Hex washer head screws. Used for mounting telephone industry equipment to cabinet with telephone industry mounting rails

HW-76: Package of 50 "U-Type" nut retainers with 10-32 thread used with HW-70

HW-77: Package of 4 brackets and all required hardware to adapt accessories to "L" shape panel-mounting rails

LEVELING FEET   *VERTICAL CABINETS, DESKS*

Model No. HW-68

- Set of 4 zinc-plated 3/8"-16 screw/pads extend to 1-1/2".and screw into bottom corner sockets
- Recommended for use when cabinet is to be located on uneven floor.
- Stud length: 2.5"
- Base material: low carbon steel

45

HARDWARE - GASKETS:

BERYLLIUM COPPER (BeCu) *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Beryllium copper is a high performance metal which can be fabricated into a wide variety of components, its mechanical and electrical properties make it the ideal material for EMI/ RRFI shielding applications. Adhensive backed and applied.

    A) Flat .75" - adhesive backed
    B) Sawtooth, single or double .125"-.250" - adhesive backed
    C) Spring; .125" - 1" - adhesive backed

A   B   C
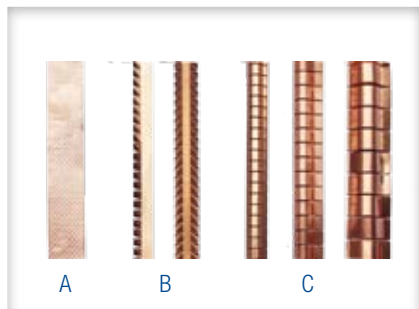
METALIZED FABRIC OVER FOAM (EMI/RFI-.125"-.250 THICKNESS)
VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES

Metalized nylon fabric over polyurethene foam core gaskets are setting a new standard for shielding control. Nickel plating over a highly conductive copper plated substrate provides the excellent electrical characteristics necessary for high attenuation shielding. Adhesive backed gaskets can be cut to length, while providing superior flexibility

SPECIFICATIONS:
- Tolerance: Height and Width ±0.020 in.< 100 ± 0.030 > 100
- Foam Core: Open celled polyurethane foam
- Metalized Fabric: Nickel plating over copper substrate
- Service Tempeature: -40° F to 158° F (-40° C to 70° C)
- Compression Set: (ASTM D3574) 2.6%
- Compression Deflection: (ASTM D3574) 1.47 psi
- Flammability Rating: UL 94 V-rated
- Surface Resistivity: (ASTM F390) < .02 Ohms
- RoHS compliant

Optima•Stantron
An Elma Company

HARDWARE - GASKETS:

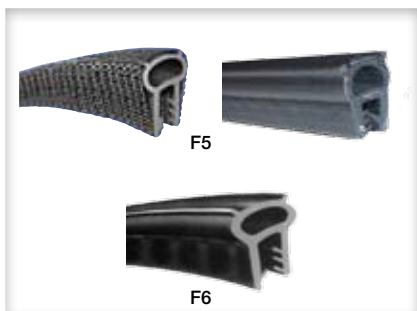## NEMA & NEMA-EMI/RFI)   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

F5 FRAME GASKET, SHIELDED EMC / NEMA
- Gasket Material: Two layers of double-knit, tin-plated, copper-clad, steel or fabric mesh mounted to NEMA 12/UL 508 gasket
- Dynamic mechanical properties yield a high deflection range and eliminate compression set
- Excellent electrical conductivity

F6 FRAME GASKET, NEMA 12 / UL508
- Material: EPDM (Ethylene-Propylene-Diene)
- Resistant to: UV, Ozone, weathering, seawater, compression set and abrasion
- Temperature Range: -40 to 120 Deg C
- Successfully tested to UL 508

F5

F6

FELT, FOAM GASKETS (DUST)   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Optima offers a variety of gaskets that can be fitted to our products and will provide the protection required to fit specific applications

For specific information, contact sales

SOUND PROOFING   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES.*

Utilizing either a solid foam or sandwitched between a high impact plastic, a full or partial sound-proofing may be accomplished. Either one of these products can be custom fit to the existing cabinet.
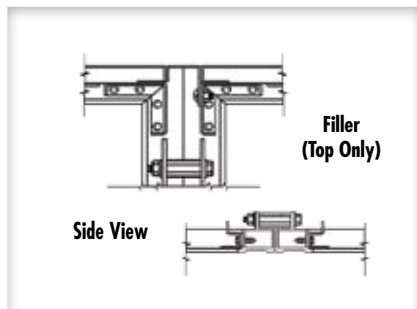
For specific information, contact sales

HARDWARE:

### MULTI-BAY CONNECTOR KITS & HARDWARE   VERTICAL CABINETS

The following options are available for connecting cabinets side-by-side. Each connector kit allows easy field assembly of standard Vertical Cabinets into a multi-bay system.

Side View

Filler (Top Only)

'KT' Style Connector Kit
Used for connecting cabinets without side panels.
Kit includes: one top filler and HW-67 hardware kit.
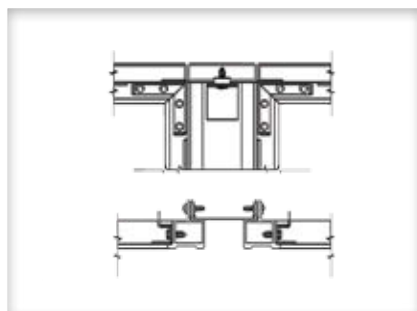
'KP' Style Connector Kit
Used when cabinets are to be slightly separated.
Kit includes: two vertical dividers, one top filler and required hardware.

KP – Vertical Cross Section
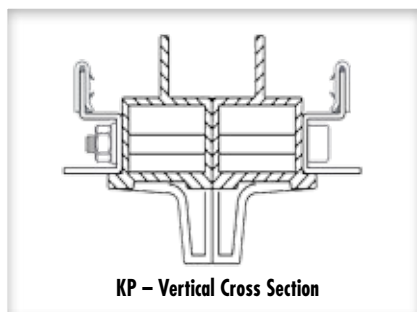
HW-56 Hardware Kit
Should be used when connecting cabinets with side panels in place: i.e., side panels of connecting cabinets are flush together. Hardware included.
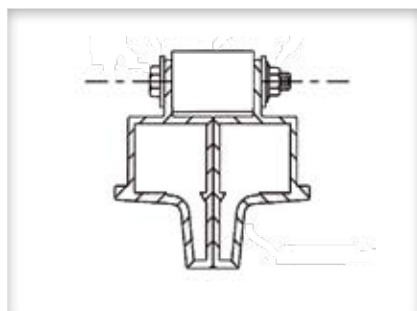
HW-67 Hardware Kit
Should be used when connecting cabinets without side panels in place. Hardware included.

| Frame RA/RC Model No.	'KP' Style Connector Kit	'KT' Style Connector Kit
21XX24	KP-2124	KT-2124
28XX24	KP-2824	KT-2824
35XX24	KP-3524	KT-3524
42XX24	KP-4224	KT-4224
52XX24	KP-5224	KT-5224
61XX24	KP-6124	KT-6124
70XX24	KP-7024	KT-7024
77XX24	KP-7724	KT-7724
21XX30	KP-2130	KT-2130
28XX30	KP-2830	KT-2830
35XX30	KP-3530	KT-3530
42XX30	KP-4230	KT-4230
52XX30	KP-5230	KT-5230
61XX30	KP-6130	KT-6130
70XX30	KP-7030	KT-7030
77XX30	KP-7730	KT-7730
21XX36	KP-2136	KT-2136
28XX36	KP-2836	KT-2836
35XX36	KP-3536	KT-3536
42XX36	KP-4236	KT-4236
52XX36	KP-5236	KT-5236
61XX36	KP-6136	KT-6136
70XX36	KP-7036	KT-7036
77XX36	KP-7736	KT-7736

Note: Optima will pre-drill holes through cabinet bezels if customer specifies "installed" when ordering connector kits. After installation at the factory, the cabinets will be separated for shipment.

Optima•Stantron
An Elma Company

HARDWARE:

SHOCK ISOLATOR(S) *VERTICAL CABINETS*

- Corrosion Resistence: the all stainless steel and Aluminum alloy construction provides the best choice for hostile and corrosive environments
- Wide temperature range: 200°F - 500°F (higher for all stainless steel versions)
- Maintenance free: once installed, isolators are virtually maintenance free and will usually outlast the equipment they were designed to protect
- Fail safe design: even under conditions of extreme overload, when the functional limits of the isolator have been exceeded, the mount will still act to restrain the equipment
- High damping: the frictional damping generated by the rubbing of the individual strands of cable, gives the isolator a substantial energy dissipating capability (C/Cc~.2). It is this same damping quality that keeps the transmissibility at resonance low (~2.5)
- Solution to meet MIL-STD: 810E,167, 901D
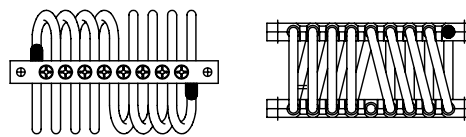
ORDERING: *Each Isolator is constructed per job / application, please contact sales for assitance.*

INFORMATION NEEDED:
- *Mass of the equipment being installed*
- *Location of equipment, --center of gravity*
- *The input Shock (g's & milliseconds) of the test parameter*
- *The shock and duration maximums, that the equipment can experience*
- *The allowable natural Frequency if applicable (usually for shipboard/submarine*
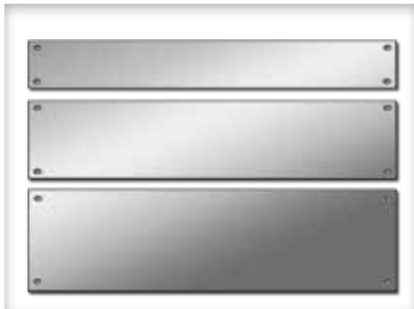
PANELS – FRONT/BACK   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Optima uses a special grade .125" sheet aluminum (5052-H32 EPS) designed for electronic use. Each side, edge and corner is carefully de-burred and chamfered to provide a flawless finish, ready to accept the multi-step painting process. The result is a superior quality panel. Panel finish is textured unless otherwise specified.

Mounting holes are standard. Perforated option: .080" aluminum with .093" diameter holes on 5/32" centers in staggered pattern, providing 32% open area. Add suffix "P" to panel model number if desired.

To order: Specify model number and color.

NOMINAL HEIGHT	19" WIDTH MODEL NO.	24" WIDTH MODEL NO.
1.75 (44.45)	P-0119	P-0124
3.50 (88.90)	P-0319	P-0324
5.25 (133.35)	P-0519	P-0524
7.00 ((177.80)	P-0719	P-0724
8.75 (222.25)	P-0819	P-0824
10.50 (266.70)	P-1019	P-1024
12.25 (311.19)	P-1219	P-1224
14.00 (355.60)	P-1419	P-1424
15.75 (400.05)	P-1519	P-1524
17.50 (444.50)	P-1719	P-1724
19.25 (488.95)	P-1919	P-1924
21.00 (533.40)	P-2119	P-2124
22.75 (577.85)	P-2219	P-2224
24.50 (622.30)	P-2419	P-2424
26.25 (666.75)	P-2619	P-2624
28.00 (711.20)	P-2819	P-2824

HARDWARE: FILLER PANELS (ALUMINUM & STEEL)

FILLER PANEL CONFIGURATOR   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

① PANEL STYLE

PA   = Aluminum (flat panel), 11ga
PFAS = Aluminum solid, 11ga
PFAV = Aluminum vented, 16 ga
PFAT = Aluminum vented vertical slot, 16 ga
PFAH= Aluminum vented horizontal slot, 16 ga

PFSS = Steel solid, 18 ga
PFSV = Steel vented, 18 ga
PFST = Steel vented vertical slot, 18 ga
PFSH = Steel vented Horizontal slot

DFS   = Double flanged solid, 18 ga
DFV   = Double flanged vented, 18 ga
DF1F = Double flanged, 1 fan (110CFM)
DF2F = Double flanged, 2 fans (220CFM)
DF3F = Double flanged, 3 fans (330CFM)
FPS   = Formed panel solid, 18 ga
FPP   = Formed panel perforated, 18 ga
FPC   = Formed panel cable access, 18 ga
FP4F = Formed panel 4 fan hole, 18 ga

RACK MOUNT

19 = 19 inches
23 = 23 inches
24 = 24 inches
12 = 12 outlets
14 = 14 outlets
20 = 20 outlets
24 = 24 outlets

PANEL HEIGHT

01 = 1.75" (1U0)
03 = 3.50" (2U)
05 = 5.25" (3U)
07 = 7.00" (4U)
08 = 8.75" (5U)
10 = 10.50 (6U)
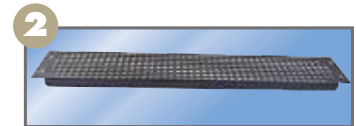12 = 12.25" (7U)
14 = 14.75" (8U)
XX = Custom

COLOR CODE

M = Black
F   = Computer Gray
P   = Light Gray
E   = Royal Blue
H = Brushed Alum (Mill) Finish
A = Brushed Alum Black finish
X = Custom

Right column images:

Solid Filler Panel
(Aluminum .060" / Steel .048")

Vented Filler Panel
(Aluminum .060" / Steel .048")

Vertical Slotted Filler Panel
(Aluminum .060" / Steel .048")

Horizontal Slotted Filler Panel
(Aluminum .060" / Steel .048")

Solid Flat Filler Panel
(Aluminum .125" / Steel .105")

Solid Steel 4-Flange Filler Panel
(Aluminum .060" / Steel .048")

Perforated Steel 4-Flange
.048" Thick Filler Panel

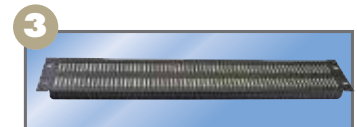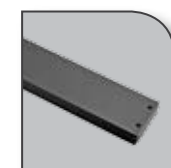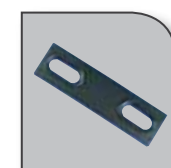**Perforated Steel**
.048" Thick Filler Panel

A wide array of rack-mount aluminum and steel filler panel options are available for your Optima Stantron products. Panels are available in solid, perforated, vertical-slotted, or horizontal-slotted styles. Also available in a solid, flat filler panel without flanges.
Consult sales for "KT"
(Kit Packs of 6, 12, or set of 1U,2U, 4U, and 8U)

Optima•Stantron
An Elma Company

HARDWARE:

STABILIZERS   VERTICAL CABINETS

Stabilizers are hinged for 90-degree swing out, and they are cast aluminum construction. They extend 10" (254.00) from the base and are adjustable with leveling screw/pads. May be used with or without casters.

To order: Specify ST-1 and color desired.

MODEL NO: ST-1 (PAIR)

STIFFENERS — FRONT-TO-BACK (PAIR)   VERTICAL CABINETS

Additional aluminum extruded front-to-back stiffeners are available for Vertical Cabinets. Includes installation hardware. Use with HW-72.

DEPTH	MODEL NO.
20" (508.00)	FB-20
24" (609.60)	FB-24
30" (762.00)	FB-30
36" (914.40)	FB-36

SUPPORT ANGLES (PAIR)   VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES

Support angles provide 3" of horizontal surface along each side of vertical cabinet for supporting instruments. Formed of 14 ga. zinc-plated steel. Slots (1.5") allow vertical adjustment. Set includes 2 angles and mounting hardware.

To Order: Specify model number. If support angles are to be mounted on L-shaped rails, HW-77 hardware is required.

DEPTH	MODEL NO.
16" (406.40)	SA-16
20" (508.00)	SA-20
24" (609.60)	SA-24
30" (762.00)	SA-30

POWER OPTIONS:

VERTICAL & HORIZONTAL POWER STRIP CONFIGURATOR

E P ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

☐ **STYLE**
V - Vertical
H- Horizontal

☐ **MODIFIER**
B - Standard Strip
S - Special (Custom)

☐☐ **LENGTH OF POWER STRIP (VERTICAL ONLY)**
17 = 17" w/out mtg. brackets
24 = 24" w/out mtg. brackets
39 = 39" w/out mtg. brackets
48 = 48" w/out mtg. brackets
66 = 66" w/out mtg. brackets
70 = 70" w/out mtg. brackets
72 = 72" w/out mtg. brackets

CASE CONFIGURATION (HORIZONTAL ONLY)
01 = Front facing outlets
02 = Recessed front w/front facing outlets
03 = Rear facing outlets
04 = Recessed front w/rear facing outlets
05 = Recessed front w/ front and rear facing outlets
06 = Front and rear facing outlets

☐☐ **NUMBER OF OUTLETS**
06 = 6 outlets (Horizontal & Vertical)
08 = 8 outlets (Horizontal & Vertical)
10 = 10 outlets (Horizontal & Vertical)
12 = 12 outlets (Horizontal & Vertical)
14 = 14 outlets (Vertical)
20 = 20 outlets (Vertical)
24 = 24 outlets (Vertical)

☐☐☐ **POWER INPUT & OUTLET TYPE**
A15 = 120V/15A w/Black duplex 5-15R
B15 = 120V/15A w/Orange duplex 5-15R isolated ground
C15 = 120/15A w/Dual circuit with alternating W/B duplex 5-15R
D15 = 120V/15A w/Gray Individual 5-15R
E15 = 120V/15A w/Black individual 5-15R
F15 = 120V/15A w/Black individual 5-15R rotated 90°
G15 = 120V/15A w/Orange individual 5-15R isolated ground

A20 = 120V/20A w/Black duplex 5-15R
B20 = 120V/20A w/Black duplex 5-20R
C20 = 120V/20A w/Orange duplex 5-15R isolated ground
D20 = 120V/20A w/Orange duplex 5-20R isolated ground
E20 = 120V/20A w/Dual circuit with alternating W/B duplex 5-20R
F20 = 120V/20A w/Dual circuit with alternating W/B duplex 5-15R
G20 = 120V/20A w/Orange duplex 5-20R isolated ground
H20 = 120V/20A w/Black individual 5-15R
J20 = 120V/20A w/Black individual 5-15R rotated 90°
K20 = 120V/20A w/Black individual 5-20R
L20 = 120V/20A w/Black individual 5-20R rotated 90°

POWER INPUT & OUTLET TYPE (CONTINUED ☐☐☐)
M20 = 120V/20A /Orange individual 5-20R isolated ground rotated 90°
N20 = 120V/20A w/Black IEC C13
U20 = 250V/20A w/Red duplex 6-20R
P20 = 250V/20A w/Dual circuit with alternating R/W duplex 6-20R
Q20 = 250V/20A w/Black IEC C20
R20 = 125/250V/20A w/Black IEC320 type C13
S20 = 120V20A w/Orange individual 5-15R isolated ground
T20 = 120V/20A w/Gray individual 5-20R
V20 = 125/250V/20A w/Black IEC type C13

A30 = 120V/30A w/Dual circuit with alternating W/B duplex 5-20R
B30 = 250/30A w/Dual circuit with alternating R/B duplex 6-20R
C30 = 250V/30A w/Dual circuit IEC type C13
D30 = 250V/30A w/IEC type C13 and C19

☐ **TERMINATION**
P = Straight blade plug
T = Twist Lock plug
J = 6" tails for field connection
W = 3" flexible conduit
X = Not installed, IEC cord seperate

☐ **SURGE SUPPRESSION**
S = Yes with LED
Y = Yes with no LED
X = Not installed

☐ **CURRENT METERING**
C = Yes
X = Not installed

☐ **EMI FILTERING**
E = Yes
X = Not installed

☐ **ON/OFF POWER SWITCH**
S = No w/LED indicator
Y = Yes w/LED indicator
X = Not installed

POWER OPTIONS:

Power Options is a full range of duplex, individual and isolated grounded power strips that increase versatility in the design and integration of Optima Stantron rack systems.

- Easily removed and or relocated

- 15-amp, 20-amp, and 30 amp units in 125 volt or 25o volt

- Digital current monitoring

- Isolated ground

- Surge & non-surge

- Adjustable 180 degree swivel from front to rear

- Circuit breaker - embossed with unit amperage

- Embossed on/off switch

- Designed for standard EIA 19-inch racks & cabinets

- 18-gauge steel housings with durable black powder coat finish

- Optional mounting accessories & adapters

- A range of IEC cord options are also available for your power strips

VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES

POWER OPTIONS:

EPSU features: 19" or 60" Length, 1.5"-1.74" (H) 1.5-3.5" (D)

Plug-and-Power Xpdu provide clean UPS output power to up to 24 receptacles

Local Monitoring easy-to-read LED display. Metered power XPDU provides a quick visual indication of the load, reducing the risk of overloads and tripped breakers

Choice of input sources All 20 amp models include both locking (L5-20P) and non-locking (5-20P) plugs for ease of installation

Branch circuit protection UL1077 listed output circuit breaker.

Space-saving mounting options horizontally in 1U, 0U, wall mounting, or floor mounting. Reserves traditional 1U space for IT equipment.

Agency Listed UL60950-1, cUL, FCC

POWER DISTRIBUTION SOLUTIONS   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

EPSU Power (Basic / Surge / Metered / Value) – rack mountable power distribution, 120V, optional surge suppression, and amp meter.

MODEL NUMBER	POWER CORD	PRODUCT DESCRIPTION (Outlet), Amp Receptacles, U, Mounting	VOLTAGE
BASIC POWER			
EPS815HV	5-15P (12ft)	(8) 5-15R 1U/0U V/H	120V 50/60HZ
EPS1020HV	L5-20P (12ft)*	(10) 5-20R 1U/0U V/H	120V 50/60HZ
EPS1415HV	5-15P (12ft)	(14) 5-15R 1U/0U V/H	120V 50/60HZ
EPS1420HV	L5-20P (12ft)*	(14) 5-20R 1U/0U V/H	120V 50/60HZ
EPS2415V60	5-15P (12ft)	(24) 5-15R 0U V	120V 50/60HZ
EPS2420V60	L5-20P (15ft)*	(24) 5-20R 0U V	120V 50/60HZ
SURGE POWER (JOULE RATING 342)			
EPSS1015HV	5-15P (12ft)	(10) 5-15R 1U/0U V/H	120V 50/60HZ
EPSS1020HV	L5-20P (12ft)*	(10) 5-20R 0U V/H	120V 50/60HZ
METERED POWER WITH AUDIBLE ALARM			
EPS1415HVA	5-15P (12ft)	(14) 5-15R 1U/0U V/H	120V50/60HZ
EPS1420HVA	L5-15R (12ft)*	(14) 5-20R 1U/0U V/H	120V 50/60HZ
EPS2420VA60	L5-20P (12ft)*	(24) 5-20R 0U V	120V 50/60HZ
VALUE POWER IN ABS PLASTIC HOUSING			
EPS1215HVPL	5-15P (6ft)	(12) 5-15R 1U/0U V/H	120V 50/60HZ
EPS1215HVP	5-15P (6ft)	(12) 5-15R 1U/0U V/H**	120V 50/60HZ

* Includes L5-20R to 5-20P Adapter,
** Surge Protection (Joule rating 114)

Line interactive technology:

Ensures maximum battery life

Mutliple communications capability: RS232, USB (via cable) and SNMP communications allow for maximum interactivity between the UPS and IT system

Automatic voltage regulation: (Boost & Buck) Assures that your power load is safely regulated and protected

Intuitive LED display: Provides real-time UPS operational status

Tel/Data protection: 1 in 1 out RJ45 surge protection ensures the data network is protected

UPS monitoring software: Award winning UPSMON allows provides an intuitive software interface

Short circuit and overload protection: provides "peace of mind" that the network and UPS will be protected during extreme circumstances

POWER DISTRIBUTION SOLUTIONS   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

EPSV Value Rack/Tower Series UPS - provides uptime and data center solutions that solve "real world" customer problems, with product features and benifits at prices never before achieved in the market.

| MODEL NUMBER	PRODUCT DESCRIPTION	INPUT POWER PLUG	RECEPTACLE TYPE
EPSV-1000 (Rack/Tower)	1000VA Line Interactive UPS,1U	5-15P	(4) 5-15R
EPSV-1500 (Rack/Tower)	1500VA Line Interactive UPS,2U	5-15P	(6) 5-15R
EPSV-2000 (Rack/Tower)	2000VA Line Interactive UPS,3U	5-15P	(6) 5-15R
EPSV-3000 (Rack/Tower)	3000VA Line Interactive UPS,3U	5-15P	(1) L5-30P (4) 5-15P

Optional EPS PDU for addtional outlets-----------EPS815HV (8), and EPS1415HV (14)

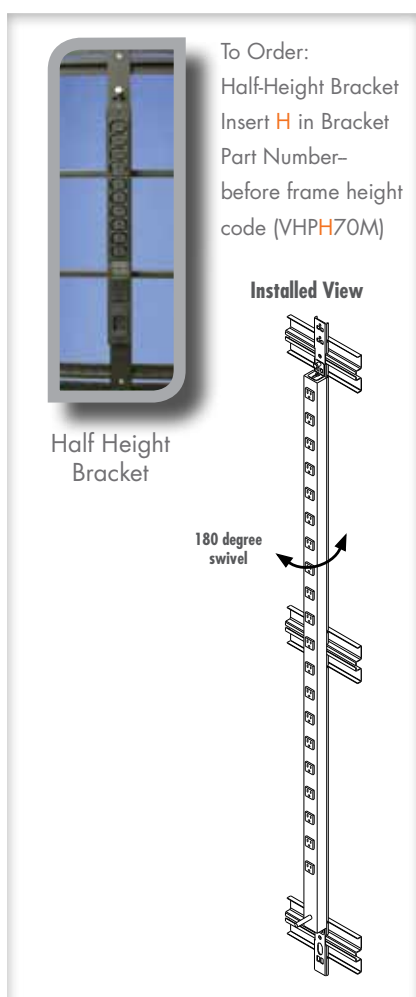| MODEL NUMBER	BATTERY RUNTIME			
	25%	50%	70%	100%
EPSV-1000 (Rack/Tower)	32 min.	10 min.	4 min.	2 min.
EPSV-1500 (Rack/Tower)	29 min.	11 min.	5 min.	2 min.
EPSV-2000 (Rack/Tower)	36 min,	11 min.	6 min.	3 min.
EPSV-3000 (Rack/Tower)	27 min.	11 min.	6 min.	2 min.

Back-up time with PC and 15" Monitor

1000VA	2000VA	3000VA	3000VA
50-60 min.	70-80 min.	85-95 min	95-105min

Optima•Stantron
An Elma Company
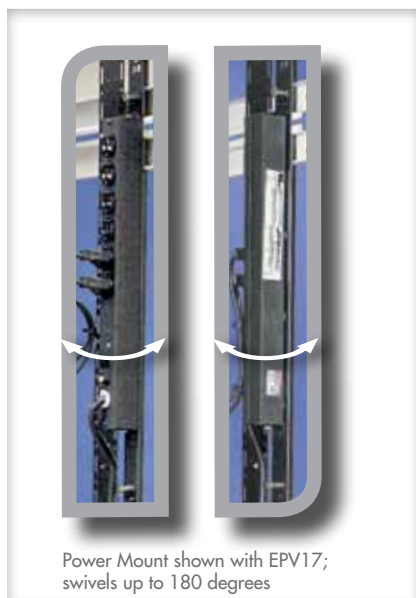
POWER OPTIONS:

INCLUDED WITH EVERY VERTICAL POWER OPTIONS POWER STRIP   *VERTICAL CABINETS, DESKS*

- Full-length mounting bracket accepts all styles and sizes of vertical power strips
- Easy to install/reposition
- 180-degree swivel
- Reduces bends in cable
- Add power as you grow
- Multiple circuits in minimal space
- Easier to cable
- Shortens pass cord length
- Improves air flow by removing cable from the air path
- Secure installation

Power Mount shown with EPV17; swivels up to 180 degrees

To Order:
Half-Height Bracket Insert H in Bracket Part Number–before frame height code (VHPH70M)

Installed View

Half Height Bracket

180 degree swivel

Frame Usable Height	Bracket Part Number	Bracket Length	Bracket Accommodates Vertical Power Strip w/ Prefix
*12U - 21.00"	VHP21M	20.75"	(1) EPV17
25U - 43.75"	VHP44M	43.50"	(2) EPV17, (1) EPV39
30U - 52.50"	VHP53M	52.25"	(2) EPV17, (1) EPV39, (1) EPV48
35U - 61.25"	VHP61M	61.00"	(2) EPV17, (1) EPV39, (1) EPV48
40U - 70.00"	VHP70M	69.75"	(3) EPV17, (1) EPV39, (1) EPV48, (1) EPV66
42U - 73.50"	VHP74M	73.75"	(3) EPV17, (1) EPV39, (1) EPV48, (1) EPV66
45U - 78.75"	VHP78M	78.50"	(3) EPV17, (1) EPV39, (1) EPV48, (1) EPV66
48U - 84.00"	VHP84M	83.75"	(3) EPV17, (2) EPV39, (1) EPV48, (1) EPV66
50U - 87.50"	VHP88M	87.25"	(3) EPV17, (2) EPV39, (1) EPV48, (1) EPV66

POWER OPTIONS:

POWER GROUNDING STRAPS   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

- Ensures safety standards are maintained
- Meets VDE specifications
- Grounding for frame, doors, top and side
- Kit includes six - 10" wires

PART# GS-08

### POWER OUTLET STRIPS   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Optima offers a variety of UL-listed 15 Amp, 125 Volt multi-length power outlet strips. These rugged, versatile strips provide a real convenience wherever multiple outlet strips are required. Wide range of uses varies from racks to consoles,   production lines and lab tables. No wiring to do. Just plug them in. All mounting hardware is included. Standard lengths 12", 24", 48"

FEATURES:
- Adjustable mounting centers
- Protection: circuit breaker
- Power supply cord: 14/3 SJT with molded plug, 15 foot length
- Case color: gray
- Outlets: "U" ground
- Switch and pilot light

NO. OF OUTLETS	CASE LENGTH	MODEL NO.
4	18"	PO-0418
7	13"	PO-0712
8	48"	PO-0848
19	68"	PO-1968

• *European voltage (220 volt), and plug style add -EU.*
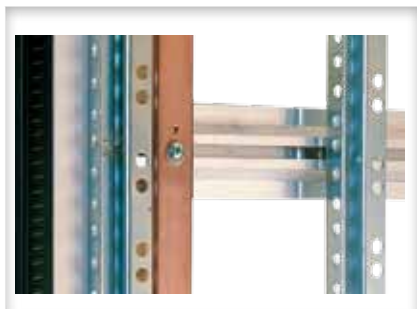
BUS BARS   *VERTICAL CABINETS AND DESKS*

Offers cabinets with recessed rail option a convenient, isolated common grounding mechanism; available in standard heights from 12U to 44U. Custom heights also available. Material: 110A copper alloy (1.00"W x .25"D) with 10-32 tapped holes spaced evenly on 3.5" centers.

CABINET HEIGHT	MODEL NO. (NON-INSULATED)	MODEL NO. (INSULATED)
21" (12U)	BB-21	BB-21-I
28" (16U)	BB-28	BB-28-I
35" (20U)	BB-35	BB-35-I
42" (24U)	BB-42	BB-42-I
52" (30U)	BB-52	BB-52-I
61" (35U)	BB-61	BB-61-I
70" (40U)	BB-70	BB-70-I
77" (44U)	BB-77	BB-77-I

Optima•Stantron
An Elma Company

LIGHTING OPTIONS:

MAGNETIC MOUNT WORK LIGHT   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

Light, relocatable fixture 16 Watt, T4 4100K lamp, 19 1/4" long w/ 6 ft 3 prong NEMA 5-15p plug. Magnetic mount with 5 adhesive J-Clips for cable management.
Fits 22+ width frames.

ITEM #:   LK01

TWIN RACK-MOUNTGOOSENECK LAMP   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

1U rack mount panel with two high intensity 12" gooseneck lamps permanently attached. The goosenecks are recessed into the panel for transport and are controlled by dimmer switches. Includes 12-volt transformer and 6 ft cord. 5W tungsten halogen bulb.

ITEM #:   LRM02

RACK-MOUNT GOOSENECK POWER

Single space rack mount panel with two 3-pin XLR connectors for use with our X series 3-pin goosenecks. Includes 12-volt transformer and 6 ft cord. Goosenecks sold separately.

ITEM #:.   LRX02

LED TABLE TOP LAMP   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

LED table top lampset with 18 inch gooseneck. Three way rocker switch allows user to toggle between white light and red light output. Includes 12-volt transformer and 6 ft cord.

ITEM #:   LED18

LED GOOSENECK LAMP   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

LED gooseneck with 3-pin XLR connector. 12-inch gooseneck length. Light output is white. Can be used anywhere a standard X-Series gooseneck works.

ITEM #:   LED12X

HALOGEN GOOSENECK   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

High intensity 12" gooseneck lamp with 3-pin XLR connector. Specially designed, heat-dispersing hood. Can be used anywhere a standard X-Series gooseneck works. 5W tungsten halogen bulb.

ITEM #:.   L12X

HALOGEN TABLE TOP LAMP   *VERTICAL CABINETS, DESKS, AND 19" INSTRUMENT CASES*

High intensity table top lamp with permanently attached 18 inch gooseneck. Specially designed, heat-dispersing hood. Includes 12-volt transformer and 6 ft cord. 5W tungsten halogen bulb.

ITEM #:   LTG18

RACK-MOUNT LAMP   *Vertical Cabinets, Desks, and 19" Instrument Cases*

1U rack mount panel with a single high intensity 12" gooseneck lamp permanently attached. The gooseneck is recessed into the panel for transport and is controlled by a dimmer switch. Includes 12-volt transformer and 6 ft cord. 5W tungsten halogen bulb.

ITEM #:   LRM01

RACK-MOUNT BRACKET   *Vertical Cabinets, Desks, and 19" Instrument Cases*

Rack mount bracket allows table top lamps to be attached to rack mount rails over existing panels.

ITEM #:   LRMB; works with: LTG18, LED18

MAGNETIC BASE   *Vertical Cabinets, Desks*

Magnetic base attaches to table top lamps for convenient placement on steel products.

ITEM #:   LMB; works with: LTG18, LED18

WEIGHTED BASE   *Vertical Cabinets*

Round weighted base attaches to table top lamps for stand alone use.

ITEM #:   LWB; works with: LTG18, LED18

Notes

C-SERIES

Optima offers a modular line of command/communications consoles and electronic desks/workstations. Tapping into the company's vast expertise and resources in electronics packaging, enclosure, and component solutions, we offer a wide range of customization options from standard parts. With expansive experience in rugged, EMC, and ergonomic designs, Optima is uniquely positioned to assist with your toughest design challenges. Our application-specific solutions are geared for Mil/Aero, instrumentation, fixed and mobile communications/broadcast, industrial, test/laboratory, and scientific markets.

- 3 standard sizes: 28", 50" and 72" widths (28" H x 32" D)
- Choice of storage bay or electronic bay
- Ergonomically designed laminate writing desk provides a comfortable work surface and maximum leg area
- Slat wall or mounting arms for monitor or desktop equipment
- Castors, levelers or floor mount options

MIL RUGGED

Optima Stantron manufactures a full range of MIL-STD desks and consoles that meet or exceed **MIL-STD; 810F, 167, 901D, 461D** requirements. Optima Stantron can adapt and accommodate customer specific requirements for EMC shielding, shock and vibration, thermal management, power distribution/conditioning and I/O cabling. The designs are based on either a modular M-Series framing style or 12-gauge, all-welded frame construction, giving the customer a console/desk that incorporates cabinet technology into a structural base, as well as substantially reducing the cost, schedule, and performance risks associated with any design specifications.

TECHNOLOGIES:

- Shock / Vibration: MIL-STD 810, 167, 901
  EMC: MIL-STD 461, FCC Class A, B
- Cable and power management
  Integrated cooling
- Strength-to-weight ratio
- Vibration resistant hardware
- Mobile infrastructure solutions

SPECIAL CUSTOM CONSOLE

- ❑ Designed ans built to customers specifictions
- ❑ MIL-STD 810F & 901D for shock & vibration
- ❑ MIL-STD for EMC and 1677 for vibration

O-SERIES

Optima Stantron Desk Systems provide your industrial control or laboratory environment with an integrated look. Combine EMI shielded and unshielded cabinets, desks and cases, while maintaining a clean, uniform appearance. Optima Stantron can also cut your packaging costs since the entire family of accessories is modular.

BUILT-IN DESIGN FLEXIBILITY:

Optima will configure a desk system to meet your needs. Choose from a wide range of options and accessories including solid, vented and acrylic doors, as well as drawers, shelves, pedestals, wedges and more.

Desks can be ordered separately with your choice of shielded or unshielded cabinets, with keyboard or solid top laminates, or in multiple configurations like the "wedge" shown below. You can even build a complete system using our desks, cabinets and instrument cases

DIAGNOSTIC RECORDING PLATFORM

❏ Special custom desk

❏ 34" height, 65" wide, 29" depth

❏ 19" rack mount for equipment

SPECIAL WIDTH WORK SURFACE

❏ Accent trim

❏ Acrylic doors

❏ Side access with storage

B-SERIES

The B-Series desk design is flexible in its function and modular structure, made for easy adaptation and alteration, providing all the advantages of a complete system without sacrificing design and practicality. The metallic structure is comprised of aluminum and steel and finished with wood. This guarantees a strong and durable system. In addition, with the flexibility to adapt to monitors and corresponding electronic equipment of any type. This guarantees a strong and durable system. In addition, this structure is designed with the flexibility to adapt to monitors and corresponding electronic equipment of any type.

● The desk console and control form a system that is modular as well as flexible

● Metallic structure comprised of aluminum and steel are finished with wood

● All of this comes without sacrificing design and practicality

61

Special Shipboard Application

- ❑ Provisions for 3 headed displays
- ❑ Electronic equipment bay
  below worksurface
- ❑ Provisions for keyboard &
  track-ball mounting

Description

Optima Stantron's C-Series command consoles are based on the latest human engineering concepts and ergonomic designs to ensure optimum "usability", providing your industrial control, laboratory, security center, EOC, or command center with a functional, integrated look. Based on standard modules, the range can easily be modified to suit most applications and ensures optimum access to critical information in your command and control environment.

Features:

- Single, two or three tier viewing levels to suit varying application requirements
- Viewing levels and angles are designed to insure operator comfort
- Monitors are supported on adjustable shelves and are dressed with custom plexiglass front bezels to provide an attractive appearance for any brand of monitor
- Console design permits peripheral equipment to be installed using standard EIA rack mounting rails that can support over 300lbs of equipment
- User friendly design accommodates typical floor layout requirements: straight, L or U shaped styles. Assembly is quick and easy using standard tools.
- Ergonomically designed laminate writing desk provides a comfortable work surface and maximum leg area
- Removable sides, rear and top panels make installation and accessibility of the equipment fast and easy
- Consoles are finished with a backed on acrylic cross linked durable textured powder coat finish. Available in customer specific colors at now extra charge.
- Popular options include roll out keyboard trays and shelves for computer servers and other equipment

Ordering Information:

- C-Series units are based on proven design platforms but are built to the customer's specifications. Contact sales for details.

Application/Ordering Examples

Special Console

- ❑ RA-Series platform
- ❑ NASA satellite program
- ❑ 2,3,& 4 bay configurations

Custom Console

- ❑ MS-Series platform
- ❑ Turrets for stacked monitors
- ❑ Ergonomic work surfaces

Special Console

- ❑ RA-Series platform
- ❑ 45 degree wedges
- ❑ Angled turrets for monitors
- ❑ Electronic storage below
  work surface

MIL-RUGGED COMMAND CONSOLES

Optima•Stantron
An Elma Company

DESCRIPTION

As specialists in EMI/RFI shielded and MIL-STD enclosures. Optima Stantron is well equipped to offer a sophisticated level of engineering support to their customers' own design teams. We offer a complete sopport from problem-solving, to prototypes, to the final production.

Military cabinets are typically designed using 12 gauge steel frames with eight, 3-dimensional support braces, one at each corner section, which provide added resistance to demanding torsional loads present in many military system applications. Our designs can accommodate unique customer specifications, (shock & vibration, cooling, dust/moisture ingress protection, EMC, mobile, etc.).

FEATURES: MODULAR DESIGN

- Welded reinforced construction
- 3-dimensional steel support braces at each corner intersection provide added resistance to compressive and torsion loads
- Choice of storage bay or electronic bay
- Ergonomically designed laminate fold down writing desk provides a comfortable work surface
- Castors, levelers or floor mount options
- Zeus rails and adaptors for mounting avionic equipment
- Modular design reduces installation, upgrade and service time

FEATURES: WELDED DESIGN

- 12-gauge all welded frame construction
- 3-dimensional support braces (12-gauge)
- Crane lifting eyes, floor mounting and shock isolators tied directly through corner braces
- Removable top and side panels (16-gauge, with concealed screws and cage nuts)
- Adjustable mounting rails (12-gauge)
- Heavy-duty, zinc die-cast door hinge with ¼" stainless steel pivot pins
- Single-handed, 4-point latching system
- EMI/RFI suppression via tin coated, copper-clad steel wire mesh knitted over a double silicon elastomer core

SPECIAL RUGGED CONSOLE

- ❏ M1-Series
- ❏ 2 Bay
- ❏ Fold-down writing surface
- ❏ Angled front for flat screen monitors

APPLICATION/ORDERING EXAMPLES

M1-SERIES

- ❏ Stacked display
- ❏ 40U
- ❏ Equipment mounting behind and below turrets

MS-SERIES

- ❏ 2 Bay, special turret
- ❏ 40U, 19"-30" depth
- ❏ Cable egress
- ❏ Folding writing surface
- ❏ Louvered panels in rear

DESCRIPTION

Optima Stantron's Desk System can be configured to meet the needs of a wide range of applications. Available in three standard sizes with options for drawers, shelves, pedestals, wedges, slat wall mountings, flat panels, and integrated cabinets (R & S-Series) it is possible to create a customized solution from standard components. Add to this compatibility with Optima Stantron's modular line of accessories and the combinations are limitless. A wide range of standard desktop laminates and cabinet colors allow for the final custom touch.

Optima Stantron Desk Systems afford you the flexibility to add packaging systems in configurations which complement your system without compromising its integrity.

FEATURES:

- 3 standard sizes: 28", 50" and 72" widths (28"H x 32"D)
- Integrated 19" rack options, 12U h x 30"d (R Series or S Series)
- EMC shielding optional
- Optional modesty panel
- Choice of storage bay or electronic bay
- 4 standard laminate and 11 cabinet color options
- Keyboard desktop (22" x 11") recessed 2"
- 45° and 90° joining wedges
- Castors or levelers

SCOPE OF SUPPLY:

- Desk Systems ship configured and assembled as ordered to include: desk, cabinets pedestal, modesty panel, slat wall, castors, power strips, cable trays, etc

ITEMS TO BE ORDERED SEPARATELY:

- Cabinet doors, pedestal doors, pedestal panels, wedge pedestals, wedge sections, monitor arms, hardware, shelves, partitions, brackets, castors, Keyboard Top (KT), in 2 widths: 50" and 72"

FULL CONFIGURATOR

CD– [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12] [13]

1,2 > DESK STYLE

XX	> Custom
RC	> RC Series
RA	> RA Series
SC	> SC Series (shielded)
SA	> SA Series (shielded)

3 > HEIGHT

2	> 28"
Z	> Custom

4 > WIDTH

2	> 28"
5	> 50"
7	> 70"
Z	> Custom

5 > DEPTH

2	> 32"
Z	> Custom

6 > CABINET LOCATION

XX	> No Cabinet
CL	> Cabinet Left
CR	> Cabinet Right
2C	> Two Cabinets

7 > PEDESTAL TYPE

MP	> Modesty Panel
OP	> Operational Pedestal
Z	> Custom

8 > DESKTOP TYPE

S	> Solid RH
L	> Solid LH
K	> Keyboard (center)
L	> Keyboard (left)
R	> Keyboard (right)
Z	> Custom

9 > SLAT WALL

Y	> Yes
N	> No
K	> Keyboard
M	> Monitor Arm
Z	> Custom

10 > CASTERS

Y	> Yes
N	> No

11 > DESKTOP LAMINATE

CB	> Champagne gray
PG	> Putty gray
FG	> Folfstone gray
WH	> White

12/13 > BODY/TRIM COLOR

1	> Black (207)
2	> Sky blue (210)
3	> White (931)
4	> Deep charcoal (209)
5	> Light gray (201)
6	> Beige (205)
Z	> Custom

Optima•Stantron
An **Elma** Company

ADVANTAGES

- Modular desk system with a contemporary, functional design
- Choice of standard sizes: 28", 50" and 72" widths (28" H x 32" D).
- Interchangeable accessories provides reduced cost
- Versatile "slat wall" versions available
- Available with integrated 19" rack mount cabinet
- Optional operation pedestal provides extra storage
- EMI/RFI shielding available as a standard option
- Desks available in stand alone or multiple configurations
- Custom color matching available

DESK CONFIGURATION OPTIONS

WITHOUT CABINETS:

UNSHIELDED
- A) 2 support legs each with 2 leveling feet
- B) Modesty panel (MP), operational panel (OP)
- C) Solid top (ST), or keyboard top (KT) in 3 widths: 28", 50", 72"

CABINET RIGHT OR LEFT:

UNSHIELDED
- A) 21" height (12U) cabinet (left) with 4 leveling feet
- B) Support leg (right) with 2 leveling feet
- C) Modesty panel (MP), operational panel (OP)
- D) Solid top (ST), or keyboard top (KT) in 2 widths: 50", 72"

SHIELDED
- A) Front door - left-hinged, solid or bottom vented with plenum
- B) Rear door - right-hinged, solid or top vented with plenum

TWO CABINETS:

UNSHIELDED
- A) Two cabinets each with 4 leveling feet
- B) Modesty panel (MP), operational panel (OP)
- C) Solid top (ST), or keyboard top (KT) in 72" width only
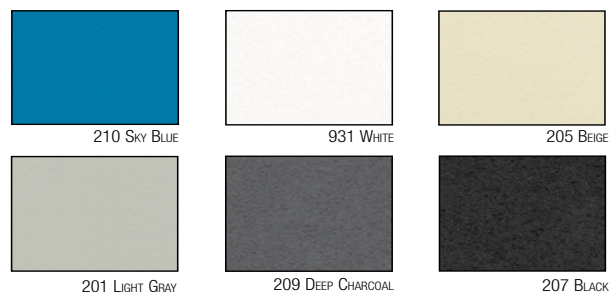
SHIELDED
- A) Front doors solid or bottom vented with plenums
- B) Rear doors solid or top vented with plenums

LAMINATE & COLOR OPTIONS *(Custom laminate & cabinet colors also available.)*

STANDARD DESKTOP LAMINATE COLORS:

CHAMPAGNE BEIGE	ANTIQUE WHITE
FOLKSTONE GREY	PUTTY GREY
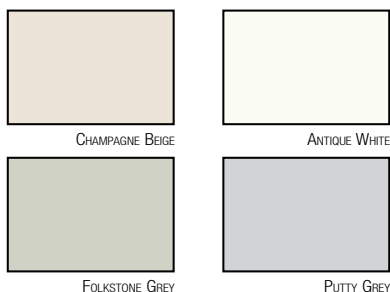
STANDARD COLORS: For cabinet, panels and trim

210 SKY BLUE	931 WHITE	205 BEIGE
201 LIGHT GRAY	209 DEEP CHARCOAL	207 BLACK

## FRONT & REARS DOORS: (*Add suffix "RH" for right hinge, "LH" for left hinge.*)

Solid, vented and acrylic doors in 21" heights and 19" widths feature concealed hinges and retractable flush mount handle with key lock.

Materials: 18 ga. CRS

DESCRIPTION	MODEL NO. "RA" SERIES	MODEL NO. "RC" SERIES
Solid Door	DA-2119	DX-2119
Top Vented	DA-2119-TV	DX-2119-TV
Bottom Vented	DA-2119-BV	DX-2119-BV
Fully Vented	DA-2119-FV	DX-2119-FV
Acrylic	DAP-2119	DP-2119

WEDGE PEDESTALS:
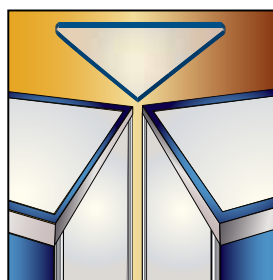
For enclosing area behind wedge section. For use with operational pedestal or modesty panel. Material: 18 ga. CRS.

PEDESTAL TYPE	ANGLE	MODEL
Operational Pedestal	45°	CDW-OP-45
Operational Pedestal	90°	CDW-OP-90
Modesty Panel	45°	CDW-MP-45
Modesty Panel	90°	CDW-MP-90

WEDGE SECTIONS For attaching additional desk units to provide for continuous desk system. Desks can be joined in 45° and 90° angles for a number of configurations to meet specific needs. Wedge sections include top laminate attached with four 12 ga. CRS brackets (provided). Note: Special considerations must be made for doors, chassis removal, etc. for 90° wedge applications.

CDW– [1] [2] [3] [4]

1,2 > COLOR

CB > Champagne beige
PG > Putty gray
FG > Folkstone gray
WH > White
ZZ > Custom

3,4 > WEDGE ANGLE

45 > 45 degree angle
90 > 90 degree angle
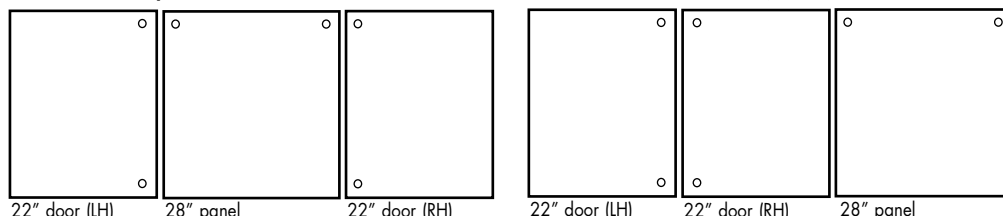
OPERATIONAL PEDESTAL:

Optima Stantron's unique operational pedestal provides additional, easily accessible storage space for electronic equipment, cables, paper, tools or supplies. The pedestal can be configured as a storage bay, 19" electronics bay or combination. Standard widths are 22" and 28" and can be configured into 50" and 72" combinations. Pedestal doors, rear panels, partitions, shelves and brackets required for the pedestal configurations are listed on the opposite page and are ordered separately.
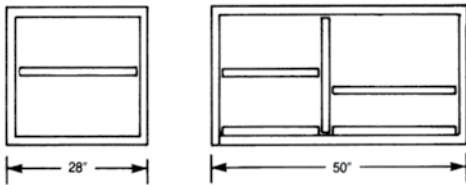
50" Pedestal Example

| 22" panel | 28" door (RH) |

72" Pedestal Examples: *Note: Doors cannot be mounted with adjacent hinges.*

| 22" door (LH) | 28" panel | 22" door (RH) |

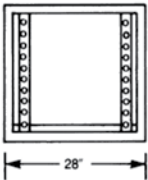| 22" door (LH) | 22" door (RH) | 28" panel |

Optima•Stantron
An Elma Company

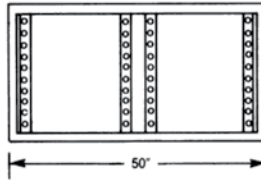## ODERING OPERATIONAL PEDESTAL DETAILS:

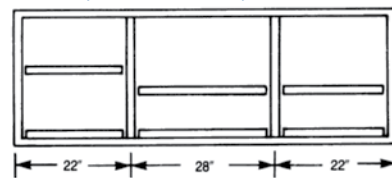28" Width Operational Pedestals   50" Width Operational Pedestals

1 Storage Bay   2 Storage Bays
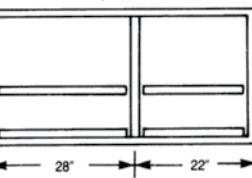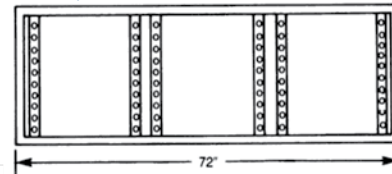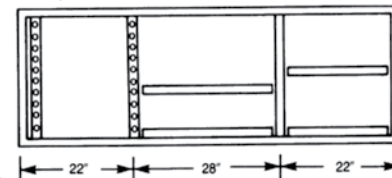
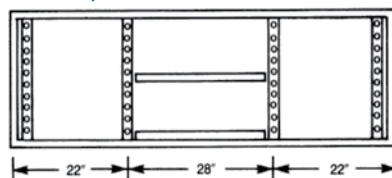1Electronic Bay   2 Electronic Bays

72" Width Operational Pedestals

3 Storage Bays

3 Electronic Bays

1 Electronic Bay (L or R); 2 Storage Bays

OPERATIONAL PEDESTAL REAR DOORS & PANELS:

REAR DOORS:

Solid doors are available as left or right hinged, and offer quick access to electronic and storage bays via two "quarter-turn" fasteners located at the corners. The 22" and 28" width doors can be used individually or in combination to enclose all three operational pedestal sizes. Material 16 ga. CRS.

DOOR WIDTH	HINGE	MODEL NO.
22"	left	CD-OP-D-22LH
22"	right	CD-OP-D-22RH
28"	left	CD-OP-D-28LH
28"	right	CD-OP-D-28RH

REAR PANELS:

Full-width, removable solid panels enclose back of pedestal and offer easy access to electronic and storage bays via two "quarter-turn" fasteners located at the top corners. Material: 18 ga. CRS.

PEDESTAL WIDTH	MODEL NO.
22"	CD-OP-RP-22
28"	CD-OP-RP-28
50"	CD-OP-RP-50
72"	CD-OP-RP-72

OPERATIONAL PEDESTAL, PARTITIONS, SHELVES AND 19" BRACKETS:

STORAGE BAY SHELF:
22" Part #, CD-OP-SS-22
28" Part #, CD-OP-SS-28

PARTITION:
Part #, CD-OP-P   *(Reversible: 1 x edge solid, 1 x edge punched for 19" panel mounting)*

ELECTRONIC BAY 19" BRACKET (PAIR):
Part #, CD-OP-B

MODESTY PANEL SHELF:
28" Part #, CD-MP-SS-28
50" Part #, CD-MP-SS-50
72" Part #, CD-MP-SS-72

DESCRIPTION:

This system comes in two basic designs:

Open consoles: a basic option that is economical with many accessories.

Closed consoles: more complete and versatile in the design of its sides, in a manner that satisfies architects/engineers who would like to personalize the project of central control.

FEATURES:

OPEN CONSOLE OPERATION:

- Configuration with angular concave component. Double support on lower area of console is designed to support dual monitors

- Configuration with angular convex component, lower area console designed to support dual monitors

- Two default color options. The color can be adapted to your project

- Monitor support system has various settings. The different settings allow the user to angle the monitor to match his or her most comfortable work position

- Station with both desk and rack

- Accessible from all sides. Easy installation and maintenance of equipment and cables. Finished lower level (optional)

CLOSED CONSOLE OPERATION:

- Closed console allows for design change of sides and top
- Work station ideal for long shifts. Engineer or user can adapt the design to his or her preferences creating a natural work environment
- Station consists of several standard elements for flat screen media
- Closed console operation with dual sections for monitors or equipment requiring a second/lower level. The height of the second level can be adapted to individual preferences
- Color and design modified. Lateral type 1
- Modified study design. Lateral type 2
- Entire rear panel

ORDER INFORMATION:

- B-Series units are based on proven design platforms but are built to the customers specifications. Contact sales for Details
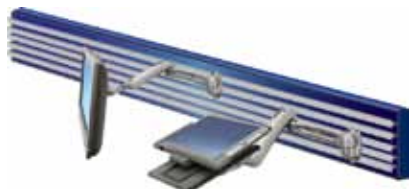
DESK ENHANCEMENTS:

DRAWERS:

Drawers are constructed of 20 ga. CRS and are furnished with ball bearing chassis slides to provide smooth operation. Provided with black, flush-mount handle. Usable depth 17.50" with 14" travel. Drawer with hinged steel writing surface provides 14" writing surface. Load capacity is 100 lbs.

SLAT WALL:

Optima's slat wall design can be configured in multiple heights and widths to fit both standard and custom configurations. Consisting of an all metal construction allows for a greater load capacity as well as adaptibility for a variety of monitor / shelf attachments.

MONITOR ARMS:

Simple and efficient way to optimize the work area. Allows for adjustment of monitor to facilitate working conditions. Monitor arms are highly flexible and can be adjusted to fit various positions. In addition to incline/tilt option, arm can rotate monitor as well as adjust distance/depth.

MONITOR SUPPORTS:

Support for both slatwall attachment, table top, and tubular attachment.

KEYBOARD TRAY /DRAWERS:

Mounts under most work surfaces for fixed height keyboard applications.

Brackets adjust for various clearance heights, and includes all mounting hardware.

E-SERIES (EX/ER/EH/ES) INSTRUMENT CASES

Proven Optima Stantron E-Series instrument cases are a clean, functional, sturdy and lightweight design for housing EIA standard 19" rack-mount chassis and components. They are designed to provide solutions for a wide range of desktop, desk-side or portable applications. For 19" sub-rack mounting the user has the choice of either the EX Case for unshielded applications or the ER Case when EMC is a concern. The EH-Case (Harsh Environment) is a dust-proof version with a front door filter (HEPA) and either special gasketing or NEMA type gasketing. If a small or portable case is needed the ES provides an ideal package for discrete electronics. All are available in a wide range of sizes, panel and color options. As part of Optima Stantron's integrated packaging system, the E and H Cases are compatible with a modular, comprehensive offering of accessories.

EX Case with with mesh/hinged front panel

ER Case with custom front panel
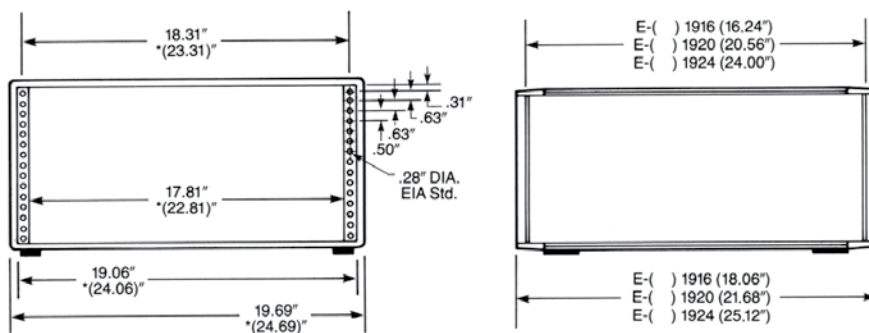

EH Case with special Hepa filter

ES Cases are ideal for when an equipment enclosure and portability is required.

ADVANTAGES:

- Elegant and functional designs
- Compatible with EIA standard 19" rack-mount equipment (EX and ER)
- Rugged, lightweight, portable and stackable (400lbs)
- Modular design provides easy access to electronics via detachable top panel and doors
- Selection of contemporary color choices; custom color matching also available
- Wide range of industry standard sizes and options
- Proven paint adhesion provides durable aesthetics
- Free assembly; Optima Stantron expertly assembles your case at no charge

DIMENSIONS:

18.31"
(23.31")
.31"
.63"
.63"
.50"
.28" DIA. EIA Std.
17.81"
(22.81")
19.06"
(24.06")
19.69"
(24.69")

E-( ) 1916 (16.24")
E-( ) 1920 (20.56")
E-( ) 1924 (24.00")

E-( ) 1916 (18.06")
E-( ) 1920 (21.68")
E-( ) 1924 (25.12")

Steel chassis mounting brackets are included in front and rear. Panel mounting rails are a integral part of extruded aluminum bezels. Panel mount hardware is provided.

Functional die cast zinc handles are optional and feature a spring-loaded return and horizontal stops.

Note: Recommended maximum load is 150 lbs, with side handles. 200 lbs without side handles.

EMI/RFI shielded (ER Case) • Unshielded (EX Case) • Dustproof (EH Case)

Optima • Stantron
An Elma Company

INSTRUMATE

Easy, economical solution for multiple packaging requirements. Use at the start of new instrument project to save costs and development time. Also ideal for high volume production.

- Available in 12 frame sizes
- Provides a single solution for multiple application packaging
  Can be used as desk-top or rack-mounted unit
- Extra strength to accommodate up to 100 lbs. of components and subassemblies
- Panel dividers and front panels available
- Load from top, front or rear

TRANSIT CASES

These rugged Transit Rack Cases comply with MIL-STD 810F, are rated to IP65 and are stable in temperatures from –40°F to +158°F. The cases combine the tough resilience of a rotomolded case with a stainless steel 19" rack frame supported on anti-vibration mounts.

Optima Stantron is pleased to offer two standard sizes from stock. Other configurations are available; please contact us for more information on different depths, heights, or colors.

- 4U and 12U heights (Other sizes available)
- Superior shock/vibration and extreme environment protection
- Rugged injection-molded carrying handles are ergonomic
- Standard, stainless steel threaded fasteners secure electronic equipment into floating stainless steel cage nuts at both front and rear of frame
- All racks have positive stacking, aligning at the front face regardless of rack depth

WALL / POLE MOUNTS

Optima Stantron's W-Series of wall mount enclosures are designed for applications where space is tight but storage needs are critical. The pole-mount outdoor enclosure provides gasketing and sealing for extreme outdoor conditions.

WALL MOUNT ENCLOSURE
- 12U-36U heights
- Adjustable mounting rails
- Optional access points
- Universal hinging allows opening from left or right

POLE-MOUNT ENCLOSURE
- Various sizes, configurations
- Adjustable mounting options
- Various levels of sealing and environmental protection

71

DESCRIPTION:

The Optima Stantron EX (unshielded) and ER (shielded) family of instrumentation cases are designed to house EIA standard 19" wide sub-racks and chassis. The rugged yet lightweight and stackable structural design is achieved with rigid front and rear aluminum bezels joined by rounded, extruded aluminum corner members. All panels - side, top and bottom are constructed of 18 ga. CRS. Select from a wide range of top, bottom and side panel options. Accessories for doors, shelves, power and cooling are available.

FEATURES:
- EIA standard 19" rack-mount compatible
- Modular aluminum bezels are joined by extruded alumi-num corner members
- Optional detachable top panel
- Aluminum doors with latch system for tight, uniform fit provide easy access
- Die cast zinc side handles
- Non slip feet
- Standard sizes
  - Widths: 19", 24"(optional)
  - Heights: 2U - 10U (up to 16U also available)
  - Depths: 19.64", 20.56", 24"
- Paint adhesion and corrosion resistance via phosphate pre-treatment and durable powder coating
- Compatible with Optima Stantron's packaging system accessories
- Wide range of standard body and trim color options

SHIELDING FEATURES: (ER ONLY)
- BeCu gasketing applied to all seams and joints to ensure continuous conductive path
- Paint-free electrical contact areas
- Optional clear chromate coating

SCOPE OF SUPPLY:
- 1 x frame (front and rear bezels and corner members), 1 x mounting rails (pair, hardware include), 1 x side panel (pair), 1 x top panel, 1 x bottom panel, non-slip rubber feet (4), BeCu gasket kit (ER only), 2 x handles, assembled

CONFIGURATOR:

EX / ER – [1] [2] **19** [3] [4] [5] [6] – [7] [8] – [9] [10] – [11] – [12] [13]

1,2 > HEIGHT	3,4 > DEPTH	5,6 > SIDE PANEL	7,8 > TOP PANEL	6 > BOTTOM PANEL	7 > HANDLE	12/13 > BODY/TRIM COLOR
03 > 2U (3.5")	16 > 16.94"	SP > Solid	ST > Solid	SB > Solid	H > Handle	1 > Black (207)
05 > 3U (5.25")	20 > 20.56"	SX > Solid w/ handle	PT > Perforated	PB > Perforated	X > No Handle	2 > Sky blue (210)
07 > 4U (7.00")	24 > 24"	PX > Perforated w/ handle	DX > Detachable, solid	XX > No Bottom	Z > Custom	3 > White (931)
08 > 5U (8.75")	ZZ > Custom	PS > Perforated w/o handle	DP > Detachable, perf.	ZZ > Custom		4 > Deep charcoal (209)
10 > 6U (10.5")		XX > No Side	XX > No Top			5 > Light gray (201)
12 > 7U (12.25")		ZZ > Custom	ZZ > Custom			6 > Beige (205)
14 > 8U (14.0")						Z > Custom
15 > 9U (15.75")						
17 > 10U (17.5")						
ZZ > Custom						

Items to be ordered separately: Bottom panel, Side panels, Doors, and Accessories (denote "installed" and location for free integration to cabinet assembly).

EH CASES (HARSH ENVIRONMENT)

Optima•Stantron
An Elma Company

DESCRIPTION:

The Optima Stantron EH is the newest member of the E-case family, constructed to provide a dust-proof or moisture-resistant design. The enclosure has either a HEPA filter on the front door with special gasketing to prevent dust ingress, or solid with NEMA type gasketing. Both types can be adapted to provide acceptable EMC requirements. This design also provides a superior compression of the gasketing with the included swing handle found in larger electronic enclosures.

Type Shown (Front/Rear): Dustproof version with Hepa filter and fan induced cooling

FEATURES:
- EIA standard 19" rack-mount compatible
- Three-sided solid steel construction with attached bottom panel
- Dustproof or NEMA type gasketing
- Side handles
- Non slip feet
- Standard sizes.
  - o Widths: 19", 24"(optional)
  - o Heights: 6U, 10U, 12U
  - o Depths: 19.64", 24"
- Paint adhesion and corrosion resistance via phosphate pre-treatment and durable powder paint coating
- Compatible with Optima Stantron's Packaging System accessories
- Wide range of standard body and trim color options

SHIELDING FEATURES:
- BeCu gasketing applied to all seams and joints to ensure continuous conductive path
- Paint-free electrical contact areas
- Optional clear chromate coating

SCOPE OF SUPPLY:
- 1 x solid frame construction, 1 x mounting rails (pair, hardware include), non-slip rubber feet (4), gasket kit, front door, rear panel, 2 x handles, assembled

CONFIGURATOR:

EH– [1] [2] **19** [3] [4] [5] [6] – [7] [8] – [9] [10] – [11] – [12] X

1,2 > HEIGHT	3,4 > DEPTH	5,6 FRONT DOOR	7,8 > GASKETING	9,10 > REAR PANEL	11 > SIDE HANDLE	12/13 > BODY/TRIM COLOR
03 > 6U (10.5")	16 > 16.94"	SR > Solid(Right Hinged)	ND > NEMA 2	SS > Solid	H > Handle	1 > Black (207)
05 > 10U (17.5")	24 > 24"	SL > Solid (Left Hinged)	NE > NEMA 2 / EMC L2	SF > Solid w/fan	X > No Handle	2 > Sky blue (210)
07 > 12U (21")	ZZ > Custom	PR > Perforated (RH)	SE > EMC L2	PS > Perforated	Z > Custom	3 > White (931)
ZZ > Custom		PL > Perforated (LH		PF > Perforated w/fan		4 > Deep charcoal (209)
						5 > Light gray (201)
						6 > Beige (205)
						Z > Custom

73

Description:

Optima Stantron ES-Cases are ideal when an equipment case needs to be portabile. These handsome, lightweight aluminum cases are available in 24 standard case sizes and a wide range of cover and trim colors. The front panel and chassis load from the front with hardware or from the rear without hardware. The ES Case can be 19" cabinet mounted with optional cabinet adapters (contact sales). Rear panels options include; solid, perforated or cable exit. Accessories for doors, shelves, power and cooling are available.

Features:
- Lightweight, rugged, portable
- Self-Retracting flush handle (optional)
- Non-stain plastic feet
- Tilt stand for raising front of case ½" (optional)
- 050" steel covers, .062" Al chassis, .125" front panels
- Standard sizes (Internal)
  - Widths: 5.00", 7.79" x 10.57"
  - Heights: 2.43", 4.18", 5.93", 7.68", 9.43"
  - Depths: 10" and 14"
- 19" sub-rack bracket (consult factory)

Scope of Supply:
- 1 x cover, 1 x rear panel, 1 x bezel/bottom pan assembly, 1 x feet (set), assembled

Configurator & Ordering Information:

ES – [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12]

1,2 > Height	3,4 > Width	5,6 > Depth	7 > Handle	8 > Front panel mount	9 > Rear panel	10 > Tilt stand	11,12 > Body / Trim color
03 > 2.43"	05 > 5.00"	10 > 10.00"	H > Handle	F > Hardware Mounted	P > Perforated	T > Tilt Stand	1 > Black (207)
05 > 4.18"	08 > 7.79"	14 > 14'"	X > No Handle	X > No Hardware	C > Cable Exit	X > No Tilt Stand	2 > Sky Blue (210)
06 > 5.93"	11 > 10.57"				Z > Custom		3 > White (931)
08 > 7.68"							4 > Deep Charcoal (209)
10 > 9.43"							5 > Light Gray (201)
							6 > Beige (205)
							Z > Custom

Options to be specified: Panel mount holes, handle, tilt-stand, cover color and bottom pan/bezel trim color. Items Order Separately: Front panel, mounting chassis, and hardware.

Front Panels

Front panels are .125" aluminum. Four mounting holes are specified by adding suffix "F" to the panel and to the small model number

Ordering Information

P – [1] [2] [3] [4] [5]

1,2 > Height	3,4 > Width	5 > Mounting
03 > 2.43"	05 > 5.00"	F > With mtg. holes
05 > 4.18"	08 > 7.79"	X > Without mtg. hole
06 > 5.93"	11 > 10.57"	
08 > 7.68"		
10 > 9.43"		

Chassis:

Chassis are constructed of .062" aluminum and are notched to clear the optional front panel mounting brackets. Hardware for attaching the chassis to the rear of the case are included.

Order#:	.75" (H) Chassis	1.5" (H) Chassis	2.25" (H) Chassis
	CH-00510	CH-10510	CH-20510
	CH-00810	CH-10810	CH-20810
	CH-01110	CH-11110	CH-21110
	CH-00514	CH-11114	CH-21114
	CH-00814		
	CH-01114		

Small Case Hardware:

HW-31	Front panel screws, Phillips-head 6-32 x 3/8, chrome-plated	100 each
HW-32	Front panel clip nuts	100 each
HW-33	Front panel mounting brackets	100 each
HW-34	Rear panel screws, Phillips-head 6-32 x 3/8, cad-plated	100 each
HW-35	Rear panel clip nuts	100 each
HW-36	Screws, Phillips-head 6-32 x 1/2, for attaching chassis to rear of case	100 each
HW-95	Cable wrap	1 Each

INSTRUMATE

Optima•Stantron
An **Elma** Company

Desk-Top version shown with Dress Accessory Kit

Basic Instrumate Frame

Rack Mount

DESCRIPTION:
Easy, economical solution to multiple packaging requirements. Use at the start of new instrument dproject to save costs and development time. Also ideal for high volume production.

FEATURES:
- Available in 12 frame sizes
- Provides a single solution for multiple application packaging
- Use it as a chassis or a card cage, or both
- Can be used as desk-top or rack-mounted unit
- Every member of the frame has mouting holes for insertion of optional metalwork, card guides and card cages
- Extra strength to accommodate up to 100 lbs. of components and subassemblies
- Panel dividers and front panels available
- Load from top, front or rear
- Meets IEC / EIA standards
- Uniform, contemporary styling for all your instruments

BASIC INSTRUMATE FRAME:
A rigid frame of aluminum extrusion and aluminum sides. Front, rear, top, and bottom are accessible during instrument assembly. The basic frame is shipped assembled. Model numbers are listed below. Color: Light Gray, textured.

RACK ADAPTABLE KIT:
For rack-mounting, order Basic Frame and Rack Adaptable Kit. Rack Adaptable Kit (models listed below) includes rack adapters and mounting hardware.
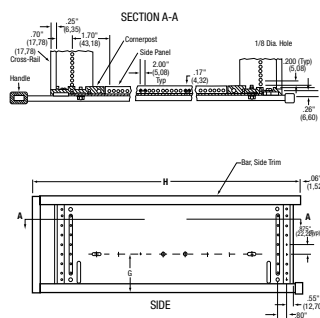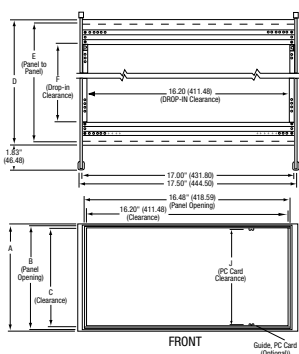
DRESS ACCESSORY KIT:
For desk-top use, order basic frame and dress accessory kit. Dress accessory kit includes two dress side panels, top and bottom panels (one vented at the rear), wire-bail zinc-plated tilt stand and all installation hardware.
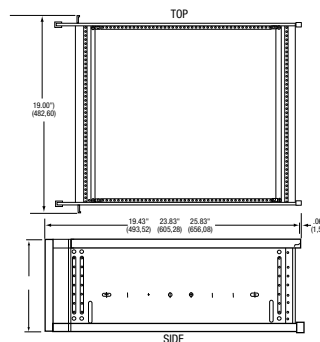Colors: Sky blue or Light gray.

SCOPE OF SUPPLY:
Basic frame, 4 x horizontal cross rails, 2 x handles, 2 x side panels
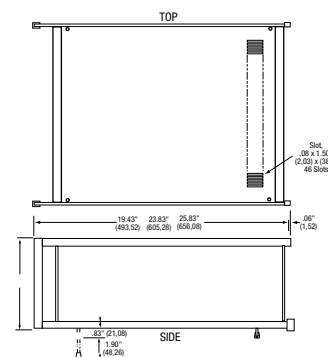Contact Sales for ordering information

Basic Instrumate Frame

Rack Adaptable Kit

Dress Accessory Kit

Description:

These rugged Transit Rack Cases comply with MIL-STD 810F, are rated to IP65 and are stable in temperatures from –40°F to +158°F. The cases combine the tough resilience of a rotomolded case with a stainless steel 19" rack frame supported on anti-vibration mounts. These rugged

Optima is pleased to offer two standard sizes from stock. Other configurations are available; please contact us for more information on different depths, heights, or colors.

Features:

- 4U and 12U heights (Other sizes available)
- Superior shock/vibration and extreme environment protection
- Enhanced 'sway space' between inner frame and outer case to prevent contact with outer container
- User adjustable inner frame allows back to front movement of 50mmwithin the outer container to accommodate front panel and rear wiring/ connector needs
- Rugged injection-molded carrying handles are ergonomic
- Standard, stainless steel threaded fasteners secure electronic equipment into floating stainless steel cage nuts at both front and rear of frame
- All racks have positive stacking, aligning at the front face regardless of rack depth
- Options include: wheels, valves, cooling, handles, latches, 19" rack runners, and stacking (see below)

Accessories:

- Wheels
- Pressure Relief Valve
- Humidity Indicator
- Handles
- Removable lids
- Fixed or telescoping support rails
- Cable storage pouch (for lid)
- Grounding points
- Conductive rack frame coating
- Shock/Vibration protection mounts
- Cooling unit

Ordering Information:

4U, 19" Transit Rack Case   69-TR04192749

- Includes a 4U 19" rack frame
- Frame depth: 19" inches
- Outside dimensions: 12.3 x 23 x 31.3
- Empty weight: 39 lbs
- Color: Elma MIL Green

12U, 19" Transit Rack Case   69-TR12192749

- Includes a 12U 19" rack frame
- Frame depth: 19" inches
- Outside dimensions: 26.3 x 22 x 31.3
- Empty weight: 55.3 lbs
- Color: Elma MIL Green

W Series: Wall/Pole Mount Enclosures

Optima•Stantron
An Elma Company

Description:

Optima Stantron's W-Series of wall mount enclosures designed for applications where space is tight but storage needs are critical. W-Series 19" rack mount cabinets handle your back room requirements and help you organize critical system and network components such as hubs, concentrators, routers, A/V and security equipment. Count on Optima Stantron to offer industry leading standards and full array of accessories for optimum efficiently.

Features
- 3 Heights: 12U (23.125"), 20U (37.125"), 26U (48.125")
- 2 Depths: 14", 20"
- 14 gauge steel construction
- 3" diameter cable access ports (top/bottom)
- Adjustable, 19" mounting rails, 2 x EIA-310 (10-32 std)
- Vented or solid sides
- Universal hinging permits mounting for left or right opening
- Plexiglas or solid doors with dual hinges for front & rear access
- Key locks front & rear

Configurator:

| 1 | 2 | – | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 |

| 1,2 > Side panel	3, 4 > Height	5, 6 > Width	7, 8 > Rail depth	9, 10 > Door	11 > Body color
WM > Solid WV > Vented ZZ > Custom	21 > 12U (21.12" / 536mm) 35 > 20U (35.12" / 892mm) 45 > 26U ZZ > Custom	19 > 19" (17.81"/ 452.4mm) ZZ > Custom	14 > 14" (355.6 mm) 20 > 20" (508 mm) ZZ > Custom	WD > Solid WP > Plexiglas ZZ > Custom	1 > Black (207) 2 > Sky blue (210) 3 > White (931) 4 > Deep charcoal (209) 5 > Light gray (201) 6 > Beige (205) Z > Custom

Specifications:

Cabinet Size	Panel Height	Overall Dimensions			Max. Rail Depth	Weight
		Height (in.)	Width (in.)	Depth (in.)		
xx-211914-xx	12U (21.0")	23 1/8	21 1/4	20 3/16	14"	75 lbs
xx-211920-xx	12U (21.0")	23 1/8	21 1/4	26 3/16	20"	90 lbs
xx-351914-xx	20U (35.0")	37 1/8	21 1/4	20 3/16	14"	95 lbs
xx-351920-xx	20U (35.0")	37 1/8	21 1/4	26 3/16	20"	110 lbs
xx-451914-xx	26U (45.5")	48 1/8	21 1/4	20 3/16	14"	110 lbs
xx-451920-xx	26U (45.5")	48 1/8	21 1/4	26 3/16	20"	130 lbs

Accessories:

	Part #	Description		Part #	Description
Cantilevered Shelves	CS-1912-S	Solid 12 ½" Depth	15-Amp Power Strip	WPO-0691RM	Rack Mount 125V 15A 6/Single Outlet Config.
	CS-1912-V	Vented 12 ½" Depth		WPO-1091RM	Rack Mount 125V 15A 10/Single Outlet Config.
	CS-1914-S	Solid 14 ½" Depth			
	CS-1914-V	Vented 14 ½" Depth			
Cable Management Ring Panels			Exhaust Fan	WCF-250	250 CFM, 35 watt 115 VAC, 80" cord
	CMR-1901	1U (1.75")			
	CMR-1902	2U (3.50")	Bus Bar	WWBB-19	Copper ¼"x19" long
Mounting Rail Sets	WMR-21	12U Panel Height			
	WMR-35	20U Panel Height			
	WMR-45	26U Panel Height			
Filler Panels	WMP-0119	1U Panel Height			
	WMP-0319	2U Panel Height			
	WMP-0519	3U Panel Height			
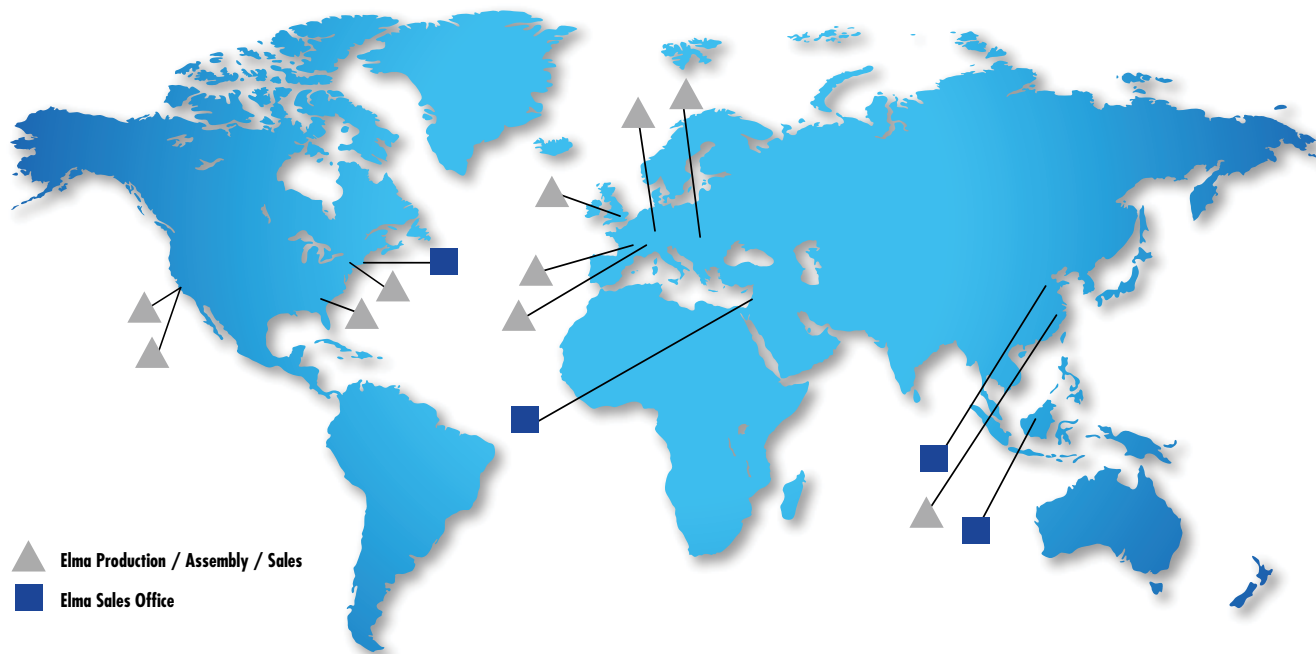
▲ Elma Production / Assembly / Sales

■ Elma Sales Office

ELMA ELECTRONIC/OPTIMA

Elma Electronic/Optima Stantron
1775 MacLeod Drive
Lawrenceville, GA 30043
Phone: (770) 496-4000
Fax: (770) 496-4041
sales@optimaeps.com
www.optimaeps.com, & www.elma.com

UNITED STATES, ELMA ELECTRONIC

Elma Electronic US Headquarters
44350 Grimmer Blvd.
Fremont, CA 94538
Phone: (510) 656-3400
Fax: (510) 656-3783
sales@elma.com
www.elma.com

Elma Electronic Inc.
760 Veterans Circle
Warminster, PA 18974
Phone: 215-956-1200
Fax: 215-956-1201
sales@elma.com
www.elmasystems.com

ELMA BUSTRONIC

Elma Bustronic Headquarters
44350 Grimmer Blvd.
Fremont, CA 94538
Phone: (510) 490-7388
Fax: (510) 490-1853
sales@elmabustronic.com
www.elmabustronic.com

SWITZERLAND

Elma Electronic AG
Hofstrasse 93, Postfach
8620 Wetzikon
Phone: +41 44 933 41 11
Fax CH:+41 44 933 42 15
Fax Inter: +41 44 932 38 12
sales@elma.ch
www.elma.com

CHINA

Elma Electronic China
8F, 355 Fu Te Road (West1)
Wai Gao Qiao Free Trade Zone
Pudong District, Shanghai 200131
Phone: +86 21 5866 5908
Fax: +86 21 5866 5918
sales@elmachina.com
www.elma.com

ASIA PACIFIC

Elma Asia Pacific Pte. Ltd
115-A Commonwealth Drive
#03-14 Tanglin Halt Industrial Estate
Singapore 149596
Phone: +65 6479 8552
Fax: +65 6479 8662
sales.elmaap@elma.com
www.elma.com

GERMANY

Elma Trenew Electronic GmbH
Stuttgarter Strasse 11
D-75179 Pforzheim
Phone: +49 7231 97 340
Fax: +49 7231 97 3497
info@elma.de
www.elma.com

UNITED KINGDOM

Elma Electronic UK Ltd
Solutions House, Fraser Road
Priory Business Park
Bedford MK44 3BF
Phone: +44 (0)1234 838822
Fax: +44 (0)1234 836650
sales@elma-uk.com
www.elma.com

ISRAEL

Elma Electronic Israel Ltd.
34, Modi'in St.
I.L.Z. Sgula
Petach-Tikva 49271
Phone: +972 3 930 50 25
Fax: +972 3 931 31 34
sales@elma.co.il
www.elma.com

FRANCE

Elma Electronic France SASU
ZA du Buisson Rond
F-38460 Villemoirieu
Phone: +33 4 37 06 21 10
Fax: +33 4 37 06 21 19
sales@elma-electronic.fr
www.elma.com

ROMANIA

Elma Electronic SRL
Maltopol Nr.16 Street, sector 1
RO-011048 Bucuresti
Phone +4021 310 7998
Fax +4021 310 7992
info@elma.ro
www.elma.com