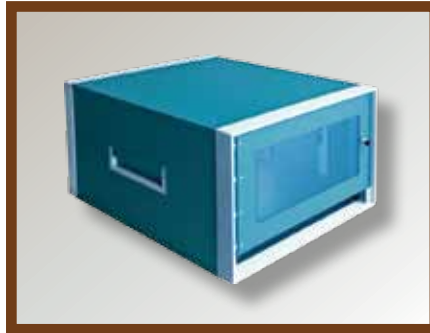
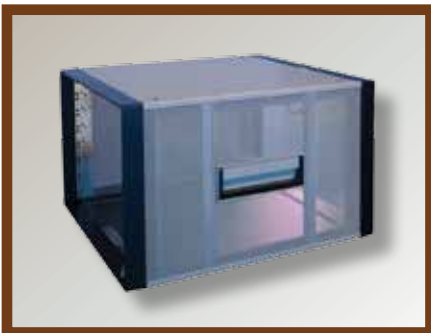


EX /ER SERIES
Instrument Cases



ES SERIES
Instrument Cases



EH SERIES
Harsh Environment



W SERIES
Wall Mounts

Instrument Cases, Wall Mounts

INTRODUCTION

Optima EPS - An ELMA Company

Optima EPS, an Elma company, is a designer and manufacturer of custom and standard electronic packaging solutions. The company provides everything from server racks, MIL-spec cabinets and security consoles, up to complete custom enclosure systems. The company offers a fast, flexible response to customer needs and extensive practical knowledge in tailoring solutions to specific applications.

Elma Electronic is a worldwide manufacturer and supplier of integrated electronic packaging systems. The company has been a worldwide supplier of dependable, high performance products for over 35 years. Elma operates four facilities in the continental United States plus has locations in Switzerland, Germany, France, the United Kingdom, China, Romania and Israel.

- 1962 - Formed from Scientific Atlanta
- 1966 - RA/RC range of vertical cabinets introduced
- 1973 - "Instrumate" range introduced
- 1987 - SA/SC range EMC cabinets introduced
- 1988 - Form 4 range introduced with UL & CSA approval
- 1994 - Gained ISO 9001 recognition
- 1995 - M1/M2 range of seismic cabinets introduced
- 2003 - Gained ISO -2000 recognition
- 2004 - Acquired by Elma-Synergy between Elma and Optima - EPS
- 2006 - AT range of ATCA/Blade server cabinet introduced
- 2007 - M-Series passes MIL-STD 810-F, vibration testing
- 2008 - M-Series passes MIL-STD 901-D, class B shock testing.

WHY CHOOSE OPTIMA?

Flexibility | Optima tailors solutions to individual applications to ensure fast and cost-effective results.

Experience | Extensive practical experience in packaging electronic systems is used to minimise the time taken to develop new customised solutions without compromising system performance or reliability.

Compatibility | Because we design and manufacture everything in-house, Optima guarantees compatibility, consistency and reliability.

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

ENCLOSURE INTRODUCTION

Optima EPS Enclosure products for Instrument Cases, Sub-racks, Table Top, and Wall Mount applications are part of a unique packaging system designed to provide an integrated look to electronic packaging. Available individually or as a part of a complete system coordinated with Optima's Cabinet and Desk products the Enclosure line provides solutions for packing electronics in instrumentation, automation and office environments.

SERVERS • NETWORKING • TESTING • ANALYTICAL EQUIPMENT

Cabinets - Optima



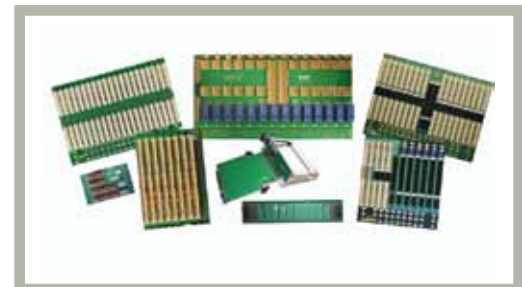
Desk and Console Systems - Optima



System Platforms - Elma



Backplanes - Elma Bustronic



Switches, LEDs, and Components - Elma





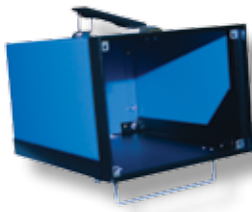
EX Case with with mesh/hinged front panel



ER Case with custom front panel



EH Case with special Hepa filter



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

OVERVIEW


Proven Optima E-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's integrated packaging system the E and H Cases are compatible with a modular, comprehensive offering of accessories.



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

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 expertly assembles your cabinet at no charge.



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

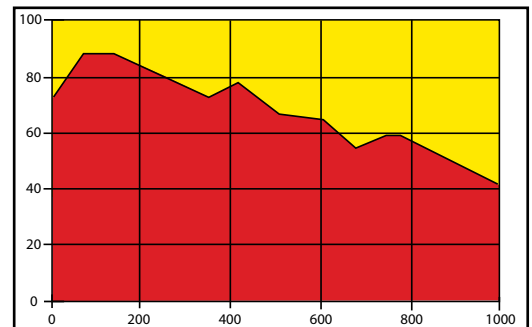
Note: Recommended maximum load is 150 lbs, with side handles. 200 lbs without side handles.

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.

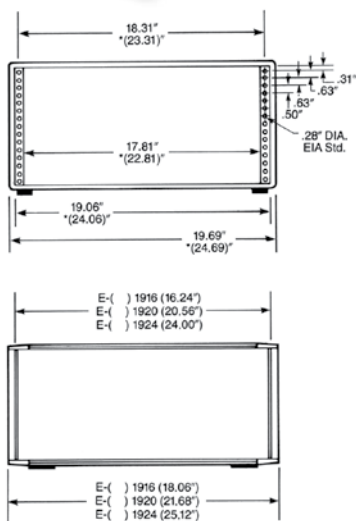
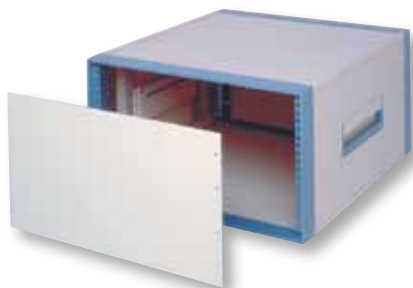


SUPERIOR SHIELDING EFFECTIVENESS

The numbers tell the story. When an FCC reconized independant lab tested Optima EPS 19" E Cases, the results showed a nominal 67.5dB shielding effectiveness throughout the 30 to 1,000 MHz. frequency range. At-tenuation values at varied frequencies ranged up to 90dB. This meets and exceeds the shielding standards set forth in FCC Docket #20780, Part 15, Subpart J.



EX / ER CASES



DESCRIPTION - EX/ER CASES

The Optima 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 aluminum 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.
 - o Widths: 19", 24"(optional)
 - o Heights: 2U - 10U (up to 16U also available)
 - o Depths: 19.64", 20.56", 24"
- Paint adhesion and corrosion resistance via phosphate pre-treatment and durable acrylic coating.
- Compatible with Optima'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.

ORDERING INFORMATION



1,2 HEIGHT	3,4 DEPTH	5,6 SIDE PANEL	7,8 TOP PANEL	9,10 BOTTOM PANEL	11 HANDLE	12,13 BODY / TRIM COLOR
03 > 2U (3.5") 05 > 3U (5.25") 07 > 4U (7.00") 08 > 5U (8.75") 10 > 6U (10.5") 12 > 7U (12.25") 14 > 8U (14.0") 15 > 9U (15.75") 17 > 10U (17.5") ZZ > Custom	16 > 16.94" 20 > 20.56" 24 > 24" ZZ > Custom	SP > Solid SX > Solid w/ handle PX > Perforated w/ handle PS > Perforated w/o handle XX > No Side ZZ > Custom	ST > Solid PT > Perforated DX > Detachable, solid DP > Detachable, perf. XX > No Top ZZ > Custom	SB > Solid PB > Perforated XX > No Bottom ZZ > Custom	H > Handle X > No Handle Z > Custom	1 > BLACK (207) 2 > Sky Blue (210) 3 > White (931) 4 > Deep Charcoal (209) 5 > Light Gray (201) 6 > Beige (205) Z > Custom

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

DESCRIPTION - EH CASES



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



The Optima EH-case is the newest member of the E-case family except that it is 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.

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.
 - Widths: 19", 24"(optional)
 - Heights: 6U, 10U, 12U
 - Depths: 19.64", 24"
- Paint adhesion and corrosion resistance via phosphate pre-treatment and durable acrylic coating.
- Compatible with Optima'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.

ORDERING INFORMATION

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



DESCRIPTION - ES CASES

Optima ES Cases are ideal for when the need is for an equipment case plus portability. 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 (consult factory). 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 1/2" (optional).
- 050" steel covers, .062" Al chassis, .125" front panels.
- Standard Sizes (Internal)
 - o Widths: 5.00", 7.79" x 10.57"
 - o Heights: 2.43", 4.18", 5.93", 7.68", 9.43"
 - o 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.

ORDERING INFORMATION



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 > 4.18" 06 > 5.93" 08 > 7.68" 10 > 9.43"	05 > 5.00" 08 > 7.79" 11 > 10.57"	10 > 10.00" 14 > 14"	H > Handle X > No Handle	F > Hardware Mounted X > No Hardware	P > Perforated C > Cable Exit Z > Custom	T > Tilt Stand X > No Tilt Stand	1 > Black (207) 2 > Sky Blue (210) 3 > White (931) 4 > Deep Charcoal (209) 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



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

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



DESCRIPTION - WALL MOUNT ENCLOSURES

Optima'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 to offer industry leading standards and full array of accessories for optimum efficiency.

FEATURES

- 3 Heights: 12U (23 1/8"), 20U (37 1/8"), 26U (48 1/8")
- 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.

ORDERING INFORMATION



1,2 SIDE PANEL

WM > Solid
WV > Vented
ZZ > Custom

3,4 HEIGHT

21 > 12U (21.12" / 536mm)
35 > 20U (35.12" / 892mm)
45 > 26U
ZZ > Custom

5,6 WIDTH

19 > 19" (17.81" / 452.4mm)
ZZ > Custom

7,8 RAIL DEPTH

14 > 14" (355.6 mm)
20 > 20" (508 mm)
ZZ > Custom

9,10 DOOR

WD > Solid
WP > Plexiglass
ZZ > Custom

11 BODY COLOR

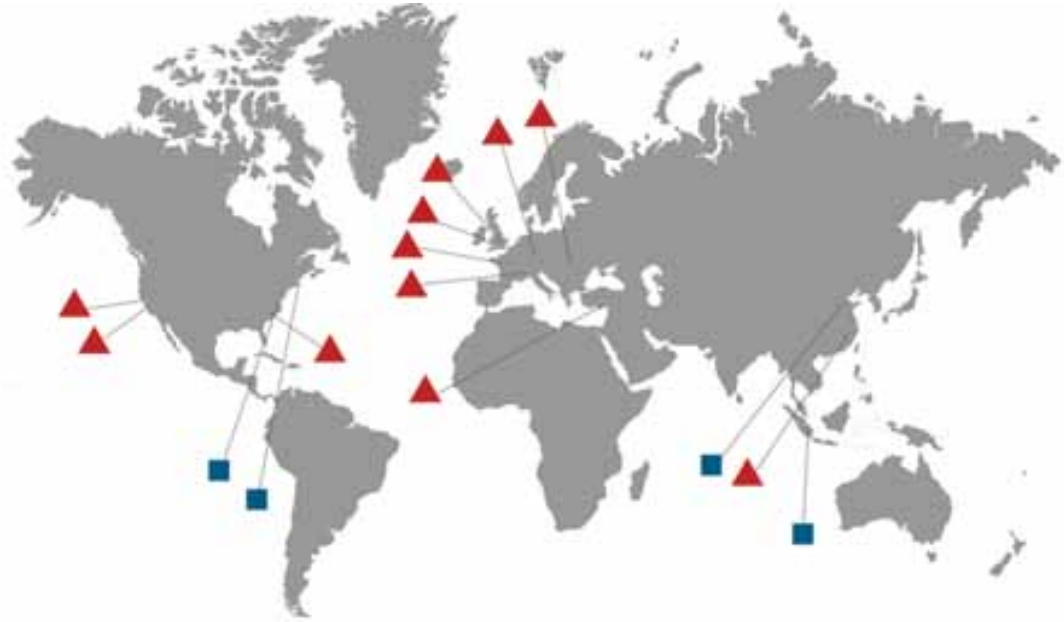
1 > Black (207)
2 > Sky Blue (210)
3 > White (931)
4 > Deep Charcoal (209)
5 > Light Gray (201)
6 > Beige (205)
Z > Custom

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 1/2" Depth	15-AMP POWER STRIP	WPO-0691RM	Rack Mount 125V 15A 6/Single Outlet Config.	
	CS-1912-V	Vented 12 1/2" Depth		WPO-1091RM	Rack Mount 125V 15A 10/Single Outlet Config.	
	CS-1914-S	Solid 14 1/2" Depth		EXHAUST FAN	WCF-250	250 CFM, 35 watt 115 VAC, 80" cord
	CS-1914-V	Vented 14 1/2" Depth			BUS BAR	WWBB-19
CABLE MANAGEMENT RING PANELS	CMR-1901	1U (1.75")	FILLER PANELS	WMP-0119		1U Panel Height
	CMR-1902	2U (3.50")		WMP-0319		2U Panel Height
MOUNTING RAIL SETS	WMR-21	12U Panel Height		WMP-0519	3U Panel Height	
	WMR-35	20U Panel Height				
	WMR-45	26U Panel Height				

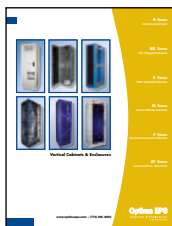
LOCATIONS



- Elma Sales
- ▲ Elma Production/Assembly/Sales

<p>ELMA ELECTRONIC/OPTIMA Elma Electronic/Optima EPS 2166 Mountain Industrial Blvd. Tucker, GA 30084 Phone: (770) 496-4000 Fax: (770) 496-4041 sales@optimaeps.com www.optimaeps.com, & www.elma.com</p>	<p>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</p>	<p>ACT/Technico 760 Veterans Circle Warminster, PA 18974 Phone: 215-956-1200 Fax: 215-956-1201 sales@acttechnico.com www.acttechnico.com</p>	<p>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</p>
<p>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</p>	<p>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</p>	<p>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</p>	<p>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</p>
<p>UNITED KINGDOM Elma Electronic UK Ltd Solutions House, Fraser Road Priors Business Park Bedford MK44 3BF Phone: +44 (0)1234 838822 Fax: +44 (0)1234 836650 info@elma-mektron.co.uk www.elma.com</p>	<p>ISRAEL Elma Electronic Israel Ltd. 34, Modi'in St. IL.Z. Sgula Petach-Tikva 49271 Phone: +972 3 930 50 25 Fax: +972 3 931 31 34 sales@elma.co.il www.elma.com</p>	<p>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</p>	<p>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</p>

Other Products Available



VERTICAL CABINETS & ENCLOSURES



DESKS / CONSOLES

Optima EPS
 2166 Mountain Industrial Blvd.
 Tucker, Georgia 30084
 Sales: 770 496-4000 • Fax: 770 496-4041

www.optimaeps.com • (770) 496-4000