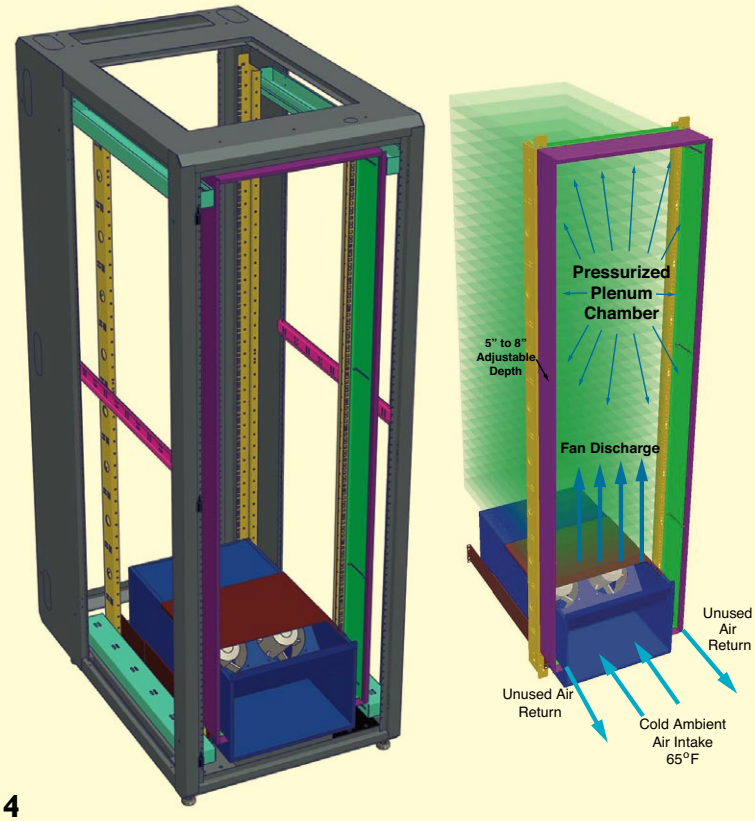
Lake Effect Enclosure 10 KW of Heat Dissipation

The Problem: Hardware failure due to equipment over-heating within the cabinet

The Solution:

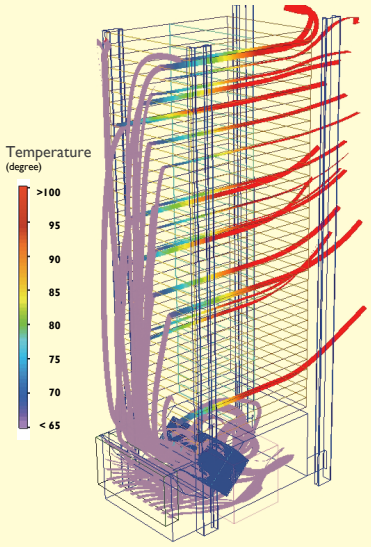
The **Lake Effect Enclosure** provides an even flow of low temperature air to the front intake face of the servers inside. This air is used by the computer's internal fans to cool the equipment. The number of servers that can be placed in an enclosed cabinet is directly related to the amount of air available to cool the equipment.

- ❄ Utilizes the coldest air above the raised floor and delivers it to the front of the servers creating a consistent temperature curtain.
- ❄ Eliminates temperature gradients throughout the enclosure.
- ❄ Requires no modification to raised floor tiles.
- ❄ Does not infringe on existing raised floor pressure.
- ❄ Does not utilize chilled water, refrigerants, or any other liquids that can jeopardize computer equipment.
- ❄ Directional airflow of up to 1224 CFM to the intake of the servers.
- ❄ Creates a usable air environment that satisfies up to 10KW of computer load.
- ❄ Plexiglas contour front door and mesh contour rear door.
- ❄ Optional retro kit will bolt into any standard 19" EIA rack with mesh front and rear doors. Uses the bottom 7 RMU only.
- ❄ Employs cabinet to cabinet wiring capabilities.
- ❄ 84"H x 30"W x 48"D, 44 RMU (37 RMU with fan box) frame with all of the same features and versatility as our industry standard Enhanced Series product line.

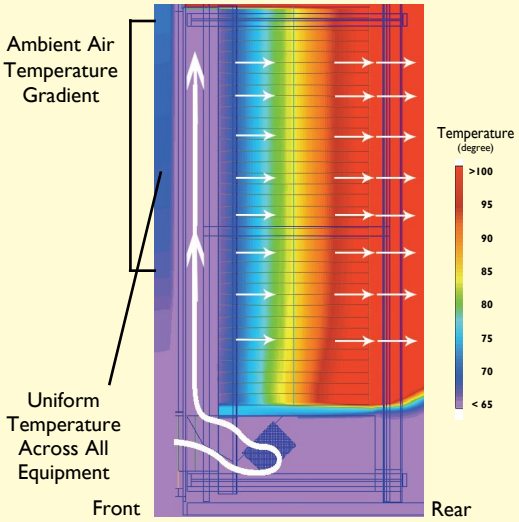


- The **Lake Effect Enclosure** requires no infrastructure changes to implement
- No water or refrigerants are introduced into the data center environment.
- There is no additional piping, duct work, or floor modifications.
- Does not invade under floor Static Pressure.
- Moves Cool Aisle into front of Cabinet.
- The **Lake Effect Enclosure** can be placed on an existing data center floor, configured with servers and put into operation immediately.

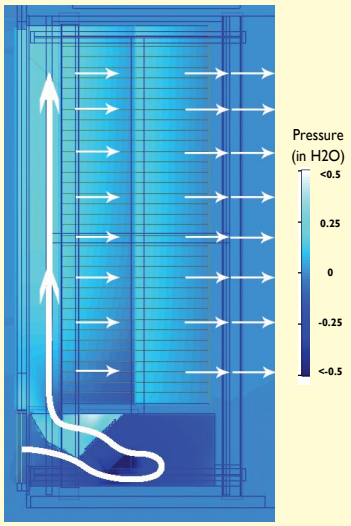
Thermal Test Results



Air Flow Path



Temperature Cross Section



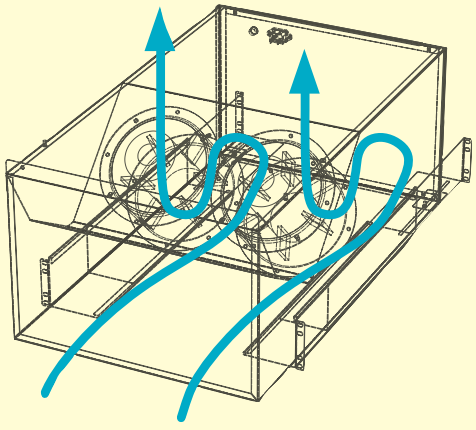
Positive Pressure Cross Section

3D Computational Thermal Analysis was independently tested and verified using computer models coupled with powerful fluid dynamic software that predicts airflow and heat transfer in and around electronic equipment. Thirty-six 1RMU servers dissipating 10,000 watts total (as shown).

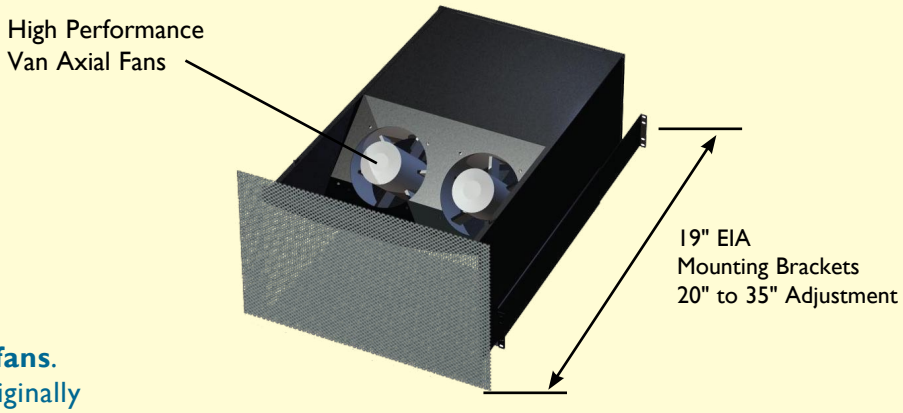
- Intake Ambient Air: 65°F
- 1224 CFM @ 1/8" in H_2O Static Pressure
- 10KW Equipment Load
- Even Temperature Across Equipment Intakes

Test Results Generated By Flomerics Using Flotherm Software

Fan Box



Our patented technology achieves a **positive air pressure environment**, created by a 7 RMU fan box, and a three sided adjustable depth plenum both sealed to the front door. The servers/filler panels form the rear surface, which yields a consistent temperature curtain at the front of the cabinet providing an environment that is the right temperature, the right air quality, and delivers air to the face of every piece of eqiupment in the cabinet.



The **Lake Effect** server enclosure utilizes **high performance van axial fans**. These highly sophisticated fans were originally designed for the aerospace industry, which demand **maximum performance** combined with minimum size and weight. These fans generate much more horsepower than standard muffin fans, and allow the **Lake Effect Enclosure** to create a Usable Air Environment.

GL840LE-3048

Lake Effect Enclosures

SHIPPING WEIGHT: 525 lbs.

DIMENSIONS: 84.00"H x 30.00"W x 48.00"D
86.00"H on optional recessed casters

RACK SPACES: 44 RMU 19" EIA 310-D Compliant

STOCK COLORS: Black

WEIGHT CAPACITY: 2000 lbs. on levelers, bolted to floor, or on casters

c UL us LISTED — UL60950-1 Standard for IT & Communications Equipment, Cabinet Enclosures, and Rack Systems

PART NO.	DESCRIPTION
8401LE-3048	Lake Effect base unit with two pairs of powder coated 19" universal M6 rails and M6 hardware shipping pallet, and two sets of power strip brackets
8402-LE	Plexi contour door with lower bottom mesh & locking easy latch handle (front)
8402E-MC29	Mesh contour door with locking easy latch handle (rear)
8410-36ELS	Pair of solid lift-off side panels
TPES-S	Solid top panel
LE-CM	Vertical cable management tray (2)
LE-FB	Lake Effect fan box kit Patented
LE-PL	Plenum kit Patented
GL840LE-3048	**Complete enclosure includes items above**
GL840LE-3048-LG	Lake Effect enclosure kit complete with leveling glides
GL840LE-3048-LGC	Lake Effect enclosure kit complete with levelers and casters

Cabinet without Patented Thermal Cooling Solution

GL840LE-3048-MC	Lake Effect- complete enclosure with mesh contour front & rear doors without fan box or plenum
GL840LE-3048-MC-LG	Lake Effect- complete enclosure with mesh contour front and rear doors without fan box or plenum (includes leveling glides)
GL840LE-3048-MC-LGC	Lake Effect- complete enclosure with mesh contour front and rear doors without fan box or plenum (includes leveling glides and casters)

Most Popular Accessories for the GL840LE-3048

PART NO.	DESCRIPTION
DOORS & SIDE PANELS	
8402E-MC29	Contour mesh door (accepts 7217LE3 door fans)
8402E-29SM	Split mesh door
8403E-SF29	Split fan door set
8404E-29	Perimeter vented steel door with locking swing handle
REMOVABLE TOP PANELS with Two 4.00" Horseshoe Knock-outs	
TPES-S	Solid Top Panel, w/two 4.00" horseshoe knock-outs
TPES-P	Perf. top panel
TPES-F	Top Panel, w/fan assembly and two 4.00" horseshoe knock-outs
TPES-F10	Top Panel, w/one 10" fan and two 4.00" horseshoe knock-outs
TPES-2F10	Top Panel, w/two 10" fan and two 4.00" horseshoe knock-outs
CABLE MANAGEMENT	
BGS-84	Brush grommet kit (side access)
CMP	Cable management post (Qty: 1) - for E, ES, and LE series rails
CMP-8	Cable management post (Qty: 8) - for E, ES, and LE series rails
HCM-D36	Horizontal cable management front to rear- 36"D
LE-CM	Vertical cable management tray (rear)
LRB-12	Ladder rack bracket kit - 12"W
LRB-24	Ladder rack bracket kit - 24"W
TCP	Top cable trough kit with hardware - 6.5"W x 4"D x 20"L
VCT-84	Vertical cable trough
VLB-8436	Vertical lacing bar kit (84"H x 36"D enclosure)
POWER STRIPS	
7215-20AR	20 amp. 49" circuit breaker, 5-20P plug, 5-20R receptacle,16 outlets
7215-20ARTLP	20 amp. 49" circuit breaker, L5-20P plug, 5-20R receptacle,16 outlets
7215-30A	30 amp. 48" two banks of 12 NEMA 5-20R receptacle, L5-30P plug
Additional power strips:	Pages 61, 69-72
FILLER/BLANKING PANELS	
1.75-FPTL19	1.75"H, 19" Tool-less Rack mounting, 1 RMU
3.50-FPTL19	3.50"H, 19" Tool-less Rack mounting, 2 RMU
5.25-FPTL19	5.25"H, 19" Tool-less Rack mounting, 3 RMU
7.00-FPTL19	7.00"H, 19" Tool-less Rack mounting, 4 RMU
8.75-FPTL19	8.75"H, 19" Tool-less Rack mounting, 5 RMU
14.00-FPTL19	14.00"H, 19" Tool-less Rack mounting, 8 RMU
COOLING DEVICES	
7217FT	Fan Assembly w/fan guards and three 75 CFM fans
7217-FT-3	Fan Tray w/three 75 CFM fans (adj. front to back)
7217-FT-6	Fan Tray w/six 75 CFM fans, (adj. front and back)
7217-FT-9	Fan Tray w/nine 75 CFM fans, (adj. front to back)
7217-LE1	Fan Assembly w/fan adaption plate – (installs in rear top)
FTBKT90	Fan Bracket to mount the 7217-FT fan at a 90 degree angle
FTC101	Fan Thermostat Controller
FTC102	Variable speed fan controller (see website for complete specs.)
PC13-515P	Power cord for fan controller – 2 required for dual a/c input (125V)
PC13-C14	Power cord for fan controller – 2 required for dual a/c input (125/250)
GLST-12	Temperature sensor- 12'
MISC. ACCESSORIES	
LE-DP	Divider panels (separates power from data)
LE-BKT	Top Bonnet (accepts remote display)
LE-BKT-DSP	Top Bonnet with remote display
HDW-105-25	Package of 25 M6 cage nuts w/screws – 12mm Screw Length
HDW-105-50	Package of 50 M6 cage nuts w/screws – 12mm Screw Length