*Get a **Clear View** on*

Reducing the Cost of Broadband Deployment

Using the FieldSmart FxHD to Reduce Real Estate Costs

By: Cheryl Beranek
Clearfield President, CEO

Our challenge as an industry is simple: The key to broadband deployment is to reduce the cost to deploy it. The answers, of course, are a little more difficult to come by. As an industry, we have aggressively worked to reduce the cost of capital equipment and we must continue on that quest. But, we must also recognize that there are many pieces to this puzzle and we must evaluate every one. Look to Clearfield as a source of information as we look to identify these puzzle pieces.

The Hidden Expense of Real Estate

Fiber management design has long promoted the need for density. We push to increase the number of ports per RU space while balancing the need for fiber access. Intuitively, we have known that less space means less cost – but have we calculated that into the cost of deployment? And have we made that part of our decision tree when selecting a solution?

Clearfield's FieldSmart FxDS fiber distribution frame delivers the industry's highest port count of 1,728 ports on a standard 7 foot frame. Recently, with the introduction of the high-density FieldSmart FxHD, Clearfield has once again raised the bar, increasing the port count by 288 to a total of 2016 ports – an increase of 16%. Again intuitive, we know this is an advantage, but what is the true cost savings?

High Density Implications of a Single Frame

While some locations will own their central office real estate and others may rent or choose to co-locate, to calculate an independent cost metric to this savings of space, we are using a cost per square foot to rent space in a co-location environment ("a cage") from a third party. While some locations will be significantly higher and others lower, we are using the figure of $30 per square foot per month.

To establish the cost savings of these designs, the following chart outlines the cost of a solution on a per port, per year basis. We are comparing the industry-standard FieldSmart FxDS and high-density FieldSmart FxHD against a proprietary design from a leading industry fiber management supplier. All frames are seven feet in height. The 18x36" footprint of both FieldSmart solutions require 4.5 square feet of space while the 24" x 30" footprint of the proprietary platform requires 5 feet.

	# of Ports	Foot print	Sq Ft per Single Rack	Cost per sq ft per month	Cost of footprint per month	Price per port per month if maximized	Cost of footprint per year	Cost per port per year
FxDS	1728	18" x 36"	4.5	$30	$135	$0.0781	$1,620	$0.94
Proprietary Competitor	1728	24" x 30"	5	$30	$150	$0.0868	$1,800	$1.04
High Density FxHD	2016	18" x 36"	4.5	$30	$135	$0.0670	$1,620	$0.80

Assuming the port count is fully maximized, dividing the cost of the footprint per year by the number of ports on the frame calculates the cost per port for the FxHD solution to be .80 center per port per year. This is .24 cents per port per year less than the $1.04 cost of the proprietary solution, delivering a cost savings of 23%.

Front/Rear Access Implications

The cost savings associated with real estate goes beyond density. With the introduction of the FieldSmart FxHD, Clearfield introduces a fiber management platform that provides full access to the fibers using only the front of the frame. Using an estimated 30" of aisle space for access, when the front access FxHD is deployed, it requires only 30" of aisle space on the front and zero space in access on the rear. This compares to a the 30" of aisle space on the front and rear of the frame that would be required of the FxDS and competitive proprietary platform. As a result, the amount of square footage required for the FxHD is dramatically less than the alternative solutions.

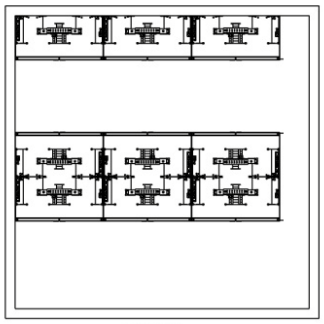
	# of Ports	Foot print	Sq Ft per two racks w/ aisle Space	Cost per sq ft per month	Cost of footprint per month	Price per port per month if maximized	Cost of footprint per year	Cost per port per year
FxDS	3456	18" x 36"	39	$30	$1,170	$0.3385	$14,040	$4.06
Proprietary competitor	3456	24" x 30"	35	$30	$1,050	$0.3038	$12,600	$3.65
High density FxHD	4032	18" x 36"	24	$30	$720	$0.1786	$8,640	$2.14

To establish the cost savings of these designs, the chart outlines the cost of a solution on a per port, per year basis accounting for both the footprint of the two racks and the required aisle space. The 24 square feet of the FieldSmart FxHD will house 4,032 ports while the 35 square feet of the competitive solution houses 3,456 ports. Assuming the port count is fully maximized in this two frame solution, the annual cost per port for the FxHD solution is 2.14 center per port -- 1.51 cents per port per year less than the $3.65 cost of the proprietary solution for a savings of 41%.

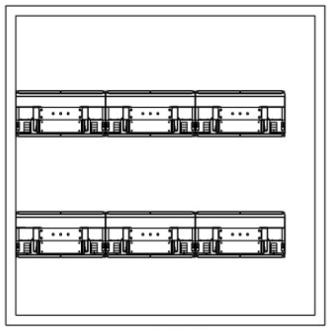
Full Cage Implications

To further demonstrate the savings associated with reducing the real estate requirements for fiber management, the enclosed cage layouts demonstrate the number of ports that can be housed if a full cage is dedicated to fiber management.

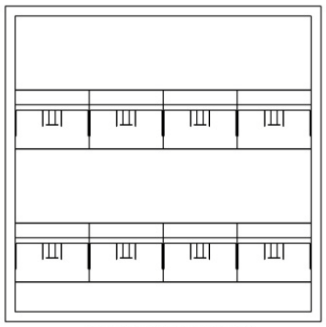
10 x 10



FxHD 9X
18,144 PORT CAPACITY
10' X 10' CAGE

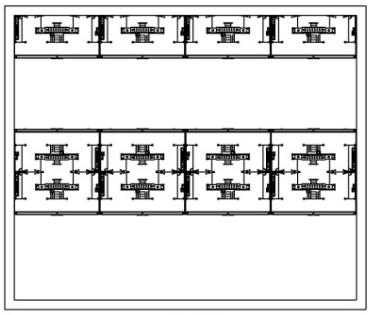


FxDS 6X
10,368 PORT CAPACITY
10' X 10' CAGE

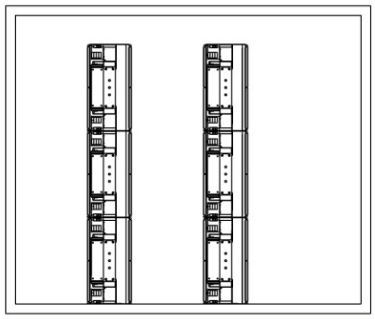


PROPRIETARY FRAME 8X
13,824 PORT CAPACITY
10' X 10' CAGE

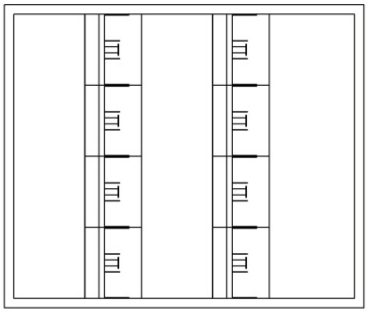
10 x 12



FxHD 12X
24,192 PORT CAPACITY
10' X 12' CAGE

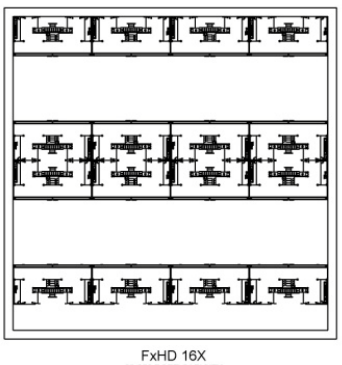


FxDS 6X
10,368 PORT CAPACITY
10' X 12' CAGE

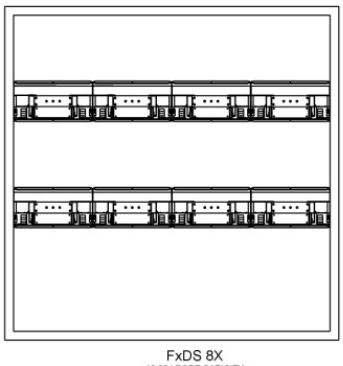


PROPRIETARY FRAME 8X
13,824 PORT CAPACITY
10' X 12' CAGE

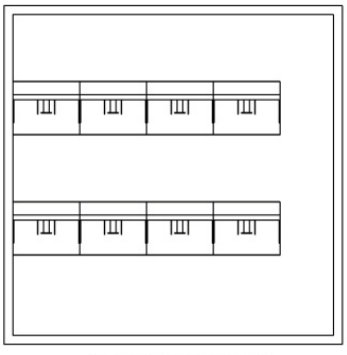
12 x 12



FxHD 16X
32,256 PORT CAPICITY
12' X 12' CAGE



FxDS 8X
13,824 PORT CAPICITY
12' X 12' CAGE



PROPRIETARY FRAME 8X
13,824 PORT CAPICITY
12' X 12' CAGE

These layouts allow for 30” of aisle access for the FieldSmart FxDS and proprietary platform, while demonstrating how the FieldSmart FxHD can be deployed either in a back to back layout or against the wall. Effectively, 32,256 ports could be housed in a 12x12 cage using the FieldSmart FxHD while only 13,824 could be housed using the alternative platforms.

Cage Size	12x12	10x12	10x10
Sq Feet	144	120	100
Monthly cost	$ 4,320	$ 3,600	$ 3,000
Maximum # of Ports			
FxDS	13,824	10,368	10,368
Mainframe	13,824	13,824	13,824
FxHD	32,256	24,192	18,144

Effectively, the FieldSmart FxHD provides an improvement of 233% more ports per cage than the existing industry solutions.

Take it the Bottom Line

Whether you are deploying a single frame, two frames or an entire cage, the space and cost savings associated with the FieldSmart FxHD must be taken into consideration as design engineers, financial planners and central office technicians work to reduce the cost of broadband deployment. Contract your Clearfield representative to learn more on how the FieldSmart architecture is an important piece of the fiber puzzle.