# FieldSmart Fiber Scalability Center (FSC)

*Makwa Fiber Distribution Hub (FDH)*



## Application

Providing 12-432 ports of connectivity for either PON or Cross-Connect, utilizing patch and splice or patch only technology in any network environment. The FieldSmart FSC Makwa is scalable to meet customer's specific requirements and has the ability to be mounted either above or below-ground, taking the potential above grade aesthetics issue out of the deployment equation.

## Description

The FieldSmart Makwa, incorporates all of the features found in our above ground cabinets and adds the ability to deploy the FieldSmart FSC Distribution Hub in a below grade application. Roughly 50% smaller than existing above grade cabinets, Makwa reduces real estate costs and improves density without compromising critical design elements of accessibility, bend radius protection, physical fiber protection and route path diversity.

Clearfield's FieldSmart Makwa consists of four basic elements; top over (dome), base plate, internal backplane and Clearview Black Cassettes. All components are pre-assembled and loaded into the Makwa – making it field ready for deployment.Scalable to meet customer requirements, Makwa can be configured to accept 12-48 feeder ports and 12-288 distribution ports in a PON application. It will accept up to 9 – 1 x 32 ruggedized splitters and parking blocks for PON networks. For cross connect scenarios, Makwa can accommodate 12-432 ports as required.

Patch and splice versions are shipped with the Clearview Black Cassette preloaded. Patch only configurations are shipped complete with pre-terminated lengths of OSP cables, terminated into the Clearview Black Cassettes, fully come installed into the Makwa, making it ready for deployment right out of the package. Mounting options include below-grade (in a vault or hand hole), above grade –either on a pole or on top of a vault with a 12" riser.

## Features and Benefits

**Integrity**
- NEMA 6 Compliant
- 100% tested GR-326 Compliant Terminations
- GR-20, GR-409,GR-487, GR-771, GR-1209 and GR-1221 Compliant
- Constructed out of UV Rated PBT plastic
- Stainless steel fasteners and hardware

**Protection**
- Provides protection of water intrusion if fully submerged
- Single molded cover with O-Ring sealing technology for additional protection
- Watertight cable entrance fittings
- 12 Fiber Clearview Black houses each 12 fiber subunit of patch only or patch and splice, protecting fiber from both environmental and human factors

**Access**
- Pole mount, in vault or on vault mount
- Vault mount option allows unit to be hidden from site and accessed only when service needs to be performed
- Removable/resealable dome allows service technicians to access fiber without damaging fiber or disrupting existing service
- Cable management integrated into the Makwa unit – including slack storage and parking blocks for splitters

**Investment**
• All fiber is deployed in increments of 12, providing the users the ability to scale from 12 ports to full capacity, aligning capital investment with network layout and subscriber revenue
• User defined feeder to distribution ratios for both PON and cross connect options
• Patch and splice configurations provide maximum flexibility for customer designed networks
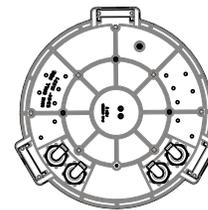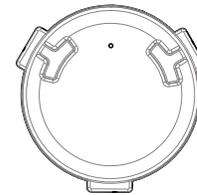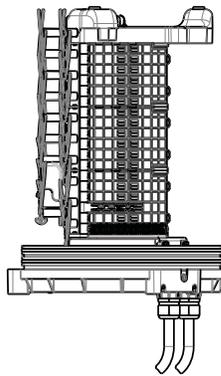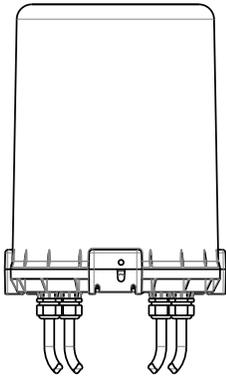


## Accessories
• New smaller ruggedized splitter – designed specifically for Makwa
• Vault Bracket -- 016897
• In Vault Mount Kit -- 017202
• Optional 12" Riser Vault Mount Kit -- 017201
• Optional Pole Mount Kit -- 016902
• CraftSmart Vaults - (Minimum size required - 24" W x 36" T x 36" D (V6B-AZP or V6B-BZP))
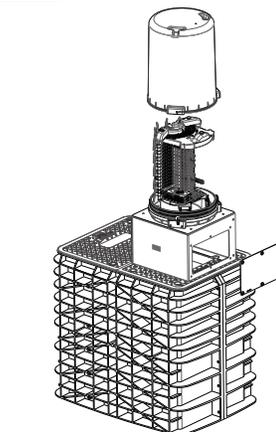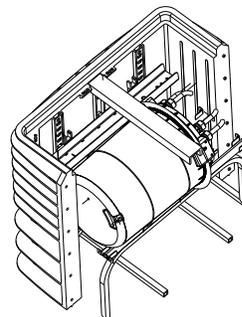
## Recommended Vaults

| Vault Size | Application Below Grade Options: Mounting Bracket - 016897 In Vault Mount Kit - 017202 | Mounted on Vault Cover with 017201 |
|---|---|---|
| 24 x 36 x 36" D | Yes (V6B-AZP, BZP or DZP) | Yes (V6B-CZP) |
| 30 x 48 x 36" D | Yes (V7B-AZP, BCP or EXP) | Yes (V7B-CZP) |
| 36 x 60 x 36" D | Yes (V8B-BZP-Z or EZP-F) | Yes (V8B-CZP-F) |
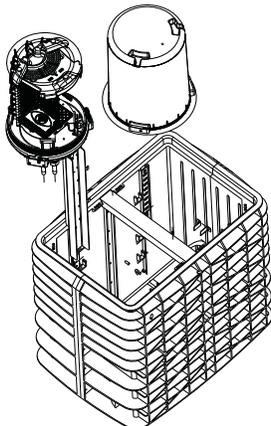


In Vault - Raised (shown with option 016897)
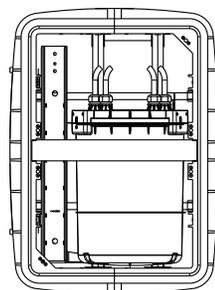
In Vault - Stored (shown with option 017202)

On Vault - 12" Riser (shown with option 017201)

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## Specifications

| Part Number | 288 PON Makwa | 432 Cross Connect Makwa |
|---|---|---|
| Size/Approx. Weight | 16" W x 16" D x 22 3/8" T (35 lbs.) | 16" W x 16" D x 22 3/8" T (35 lbs.) |
| In Vault Mount | Optional Vault Mount Bracket 016897 and In Vault Mounting 017202 available. Ordered separately | Optional Vault Mount Bracket 016897 and In Vault Mounting 017202 available. Ordered separately |
| On Vault Mount | Optional Vault Mount Bracket 017201. Ordered separately | Optional Vault Mount Bracket 017201. Ordered separately |
| Pole Mount | Optional Vault Mount Bracket 016902. Ordered separately | Optional Vault Mount Bracket 016902. Ordered separately |
| Vault Options | See recommended vaults on previous page. | See recommended vaults on previous page. |
| Splicing | Yes - in Clearview Black Cassette | Yes - in Clearview Black Cassette |
| Feeder/Express Ports | Up to 48 | Up to 216 |
| Distribution Ports - Maximum homes served - multiples of 12 ports in new Clearview Cassettes Cable | Up to 288 | Up to 216 |
| Cable Entrances | 4 | 4 |
| Splitter Slots - New 1 x 32 Splitter | 9 | N/A |
| Jumper Length | N/A | 1 meter |
| Available in Patch and Splice or Splice Only | Yes | Yes |
| Material | Property Blended UV Resistant Plastic | Property Blended UV Resistant Plastic |
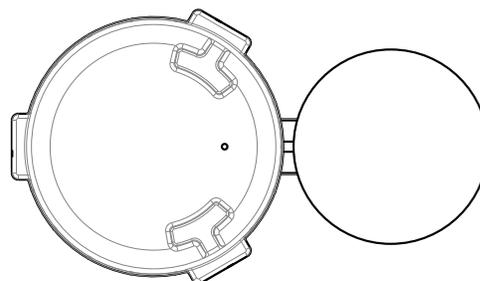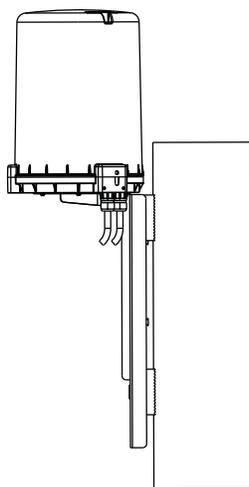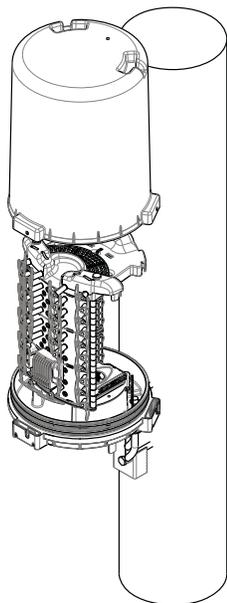
Pole Mount Shown with Option 016902

# FieldSmart Fiber Scalability Center (FSC)

## Makwa Fiber Distribution Hub (FDH)

## PON Configured Part Numbers

R - B ___ ___ . ___ ___ ___ . ___ ___ ___ . ___ ___ ___    XXXM or XXXF

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

**1  Select mounting**
* 1 = Pole Mount Bracket
* 2 = In Vault Mounting Bracket
* 3 = On Vault Mount (12" Riser)
Á  Z = No Mounting Bracket

**2  Select feeder**
1 = 12 in a Cassette
2 = 24 in 2 Cassettes
3 = 36 in 3 Cassettes
4 = 48 in 4 Cassettes
Z = No Feeder

* Order Mounting
Brackets Separately

**3  Select distribution port count**
012 = 12
024 = 24
036 = 36
048 = 48
072 = 72
096 = 96
144 = 144
288 = 288

**4  Select connector**
A = SC/UPC
C = SC/APC
F = LC/UPC DX
H = LC/APC DX

**5  Select mode and type**
1 = SM (Non-ribbon)
2 = SM (Ribbon)

**6  Select jacket construction**
B = OSP Riser
E = OSP (Non-rated)
F = 900um TB (FieldSmart Patch & Splice)
M = OSP Armored (Non-rated) Gel Filled

**7  Select # of 288 fiber OSP cables**
0 = 0
1 = 1

**8  Select # of 144 fiber OSP cables**
0 = 0
1 = 1
2 = 2

**9  Select # of 96 fiber OSP cables**
0 = 0
1 = 1
2 = 2
3 = 3

**XXXM or XXXF**
XXXF = Length of pigtail in feet
XXXM = Length of pigtail in meters

## Cross-Connect Configured Part Numbers

R - P ___ . ___ ___ ___ . ___ ___ ___ . ___ ___ ___ . ___ ___ ___    XXXM or XXXF

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

**1  Select mounting**
*1 = Pole Mount Bracket
*2 = In Vault Mounting Bracket
*3 = On Vault Mount (12" Riser)
Z = No Mounting Bracket

**2  Select connector**
A = SC/UPC
C = SC/APC
F = LC/UPC DX
H = LC/APC DX

**3  Select mode and type**
1 = SM (Non-ribbon)
2 = SM (Ribbon)

* Order Mounting
Brackets Separately

**4  Select jacket construction**
B = OSP Riser
E = OSP (Non-rated)
F = 900um TB (FieldSmart)
M = OSP Armored

**5  Select feeder count**
(available in increments of 12)
012 = 12
024 = 24
036 = 36
048 = 48
072 = 72
096 = 96
144 = 144
*216 maximum

**6  Select # of 288 fiber feeder OSP cables**
0 = 0
1 = 1

**7  Select # of 144 feeder OSP cables**
0 = 0
1 = 1
2 = 2

**8  Select # of 96 fiber feeder OSP cables**
0 = 0
1 = 1
2 = 2
3 = 3

**9  Select distribution count**
(available in increments of 12)
012 = 12
024 = 24
036 = 36
048 = 48
144 = 144
*216 maximum

**10  Select # of 288 fiber distribution OSP cables**
0 = 0
1 = 1

**11  Select # of 144 fiber distribution OSP cables**
0 = 0
1 = 1
2 = 2

**12  Select # of 96 fiber distribution OSP cables**
0 = 0
1 = 1
2 = 2
3 = 3

**XXXM or XXXF**
XXXF = Length of pigtail in feet
XXXM = Length of pigtail in meters

**Preliminary**  Configurators in this document are updated frequently and are for reference only. Please contact your sales representative for specific ordering information.