Fiber Options

*. . . light years ahead™*

# 515R1

## Product Specification

MISC.

## Description: 515R1 15-Position Card Rack with Power Supply

### Features

- ✔ **15 1-Inch card slots**
- ✔ **Enhanced thermal dynamics**
- ✔ **Built-in 6-amp power supply**
- ✔ **Universal 100-240 V, 60/50 Hz input**
- ✔ **Accepts redundant PS**
- ✔ **Fiber fail and output level alarms**
- ✔ **Sonalert with mute switch**
- ✔ **Cards are hot-swappable**
- ✔ **Forever Warranty™**

### Description

The compact 515R1 Card Cage Rack provides high-density racking for Fiber Options fiber-optic modules. It is designed to mount in standard 19-inch (483 mm) instrument racks. Fiber Options rack cards come in module widths of 1, 2, or 3 inches, and the 515R1 can accommodate the equivalent of 15 1-inch modules.

The 515R1 is supplied with the 515PS1 power supply, which is designed to supply power to a full 515R1 Card Cage Rack. It has a maximum output of 6.0 A. The 515PS1 can accept any AC voltage input between 100 and 240 V, 60/50 Hz. The input circuit includes an RFI filter. A bicolor red/green LED glows glows green when DC power output is within acceptable limits.

A fiber-fail alarm is also built into the power supply. It is functional only when the rack contains receiver units with the alarm feature. It is activated when the optical signal input to any receiver mounted in the rack is lost. The alarm activates a buzzer built into the power supply, an ALARM LED on the front panel, and relay contacts with connections on the rear panel of the power

*continued*

### Basic Model Descriptions

**515R1** 15-Position high-density card cage rack
**515PS1** Internal DC power supply for 517R1 or 515R1 racks

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**For international offices, see the back cover.**

## Description *(continued)*

supply. This output may be connected to a remote device such as a lamp or buzzer. The output contacts may be set to act as dry contacts or may be set to output 14 VDC to power an external device. The built-in buzzer may be disabled with the MUTE switch mounted on the front of the power supply. The output contacts are normally open (NO) dry contacts.

If a redundant power supply is required, a second 515PS1 can be ordered. It is normally installed alongside the existing supply. Switchover from primary to redundant supply is automatic. See Note 2.

*NOTE 1: When configuring a rack system, it is important to make sure that the power requirements of the fiber-optic modules do not exceed the output of the 515PS1. This can be determined in one of two ways:*

*1. Add up the current requirements of all the cards that are going into the rack. The total current requirement must not exceed 6.0 A.*

*2. Add up the Power Factors of all the cards that are going into the rack.. The total must not exceed PF48, the Power Factor of the 515PS1.*

*NOTE 2: If a redundant supply is installed, note that the cage must be configured so that the total current requirement or Power Factor of the installed units does not exceed the capacity of a* single *power supply.*

## The Power Factor

The Power Factor has been developed as an aid in determining what combination of rack modules can be supported by a specific model of rack power supply.

To use it, add up the numbers in the Power Factor column of the Fiber Finder. The total for a given rack must be less than or equal to the rack power supply Power Factor.

**TABLE 1: CURRENT/POWER FACTOR VALUES**

| Current | Power Factor | Current | Power Factor |
|---|---|---|---|
| 0 - 125 mA | 1 | 751 - 875 mA | 7 |
| 126 - 250 mA | 2 | 876 - 1000 mA | 8 |
| 251 - 375 mA | 3 | 1.001 - 1.125 A | 9 |
| 376 - 500 mA | 4 | 1.126 - 1.250 A | 10 |
| 501 - 625 mA | 5 | 1.251 - 1.375 A | 11 |
| 626 - 750 mA | 6 | 1.376 - 1.500 A | 12 |

## Power Factor Examples

**Example 1:**

You want to install a number of 700V receivers in a 515R1 rack. The rack will hold up to 15 700V receivers and one 515PS1.

The 700V power factor is PF 1.

15 X PF 1 = PF 15, the total power required by the receivers.

515PS1 = PF 48, so the 515PS1 has plenty of power to spare for these receivers.

**Example 2:**

You want to mount 730DV receivers in a 515R1 rack. The 730DV is a single (1-inch) module. How many 730DV modules can the 515PS1 support?

The 730DV power factor is PF 6.

515PS1 = PF 48.

48/6 = 8 There is enough power to support eight 730DV receivers. There will be 5 unused slots.

## ELECTRICAL - Power Supply

| | |
|---|---|
| Input Voltage: | 100 - 240 VAC |
| Input Power Frequency: | 60/50 Hz |
| Current Requirement: | 0.99 A at 115 VAC<br>0.49 A at 230 VAC |
| Power Factor: | 48 |
| Power Consumption: | 113 VA @ 115 V |
| Power Supply Dissipation: | 28 W @ 115 V |
| Heat Equivalent*: | 1.6 Btu/min<br>0.4 cal/min. |

* This represents the conversion of all input power to heat. The actual heat generated will be less.

| | |
|---|---|
| Output Voltage: | 13.5 VDC |
| Output Current: | 6.0 A maximum |
| Fuse Type or Size: | 5 X 20 mm, located in a pull-out tray on rear panel |
| Fuse Rating: | 2.0 A, 250 V |

Rack Card Replacement: Cards may be removed and installed without powering-down the card cage (hot swappable).

## MECHANICAL - Power Supply

| | | |
|---|---|---|
| Dimensions: | Length: | 9.90 in (251 mm) |
| | Width: | 2.0 in (51 mm) |
| | Height: | 5.25 in (133 mm) |
| Weight: | 1.91 lb (0.87 kg) | |

| | |
|---|---|
| Construction: | Aluminum |
| Finish: | Black semigloss paint |
| Mounting Method: | 2 Captive screws |

## MECHANICAL - Rack

| | | |
|---|---|---|
| Dimensions: | Height: | 5.23 in (133 mm) |
| | Width: | 19.0 in (483 mm) |
| | Depth: | 9.86 in (250 mm) |
| Weight: | | |
| Including power supply: | | 5.35 lb (2.43 kg) |
| Without Power Supply | | 3.74 lb (1.70 kg) |
| Shipping Dimensions: | | |
| | Height | 7.3 in (185 mm) |
| | Width: | 11.8 in (300 mm) |
| | Depth: | 20.0 in. (508 mm) |

| | |
|---|---|
| Shipping Volume: | 1.0 cu ft (0.028 cu m) |
| Shipping Weight: | 7.35 lb (3.33 kg) |
| Construction: | Aluminum |
| Finish: | Black semigloss paint |
| Mounting Method: | 4 No. 10 screws or metric equivalent for rack mounting |

## CONTROLS - Power Supply

| | |
|---|---|
| Power Switch: | Rocker switch on rear panel |
| Alarm Mute Switch: | Slide switch on front panel |
| 14 VDC Output Enable: | Internal jumper |

## INDICATORS - Power Supply

| | |
|---|---|
| Output Power: | Bicolor LED<br>Refer to Table 1 |
| Fiber Fail Alarm: | Red LED glows steadily if a fiber failure occurs when one or more receivers with the alarm feature are present in the rack. |

## CONNECTORS - Power Supply

| | |
|---|---|
| Power Input: | Recessed 3-pin IEC 320 male connector.<br>Detachable 3-conductor cable supplied. |
| Alarm Output: | 5-pin detachable screw terminal connector. |

## AGENCY COMPLIANCE AND MTBF

| | |
|---|---|
| Emissions: | FCC Part 15, ICES-003, AS/NZS 3548, EN55022 |
| Immunity: | ENV50204<br>EN61000-4-2, 3, 4, 5, 6, 11 |
| Safety: | UL1950, CAN/CSA 22.2, NO.950-95, EN60950, IEC950 |
| MTBF: | >100,000 hours |

FCC PART 15 COMPLIANT

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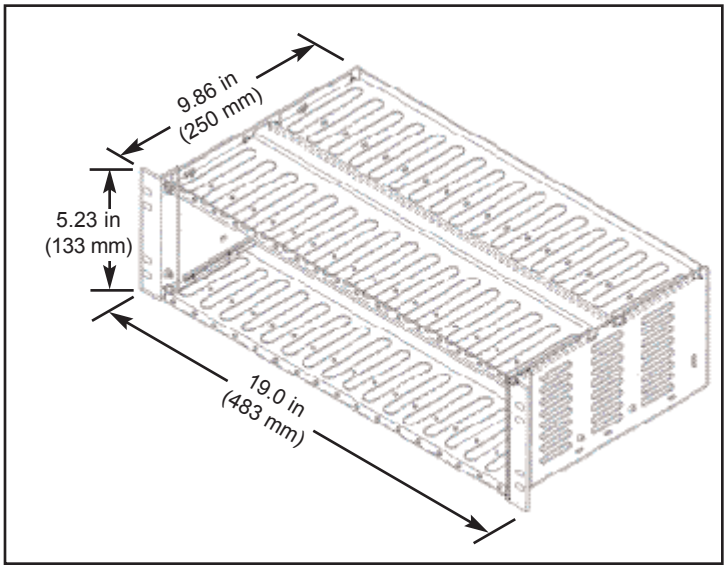
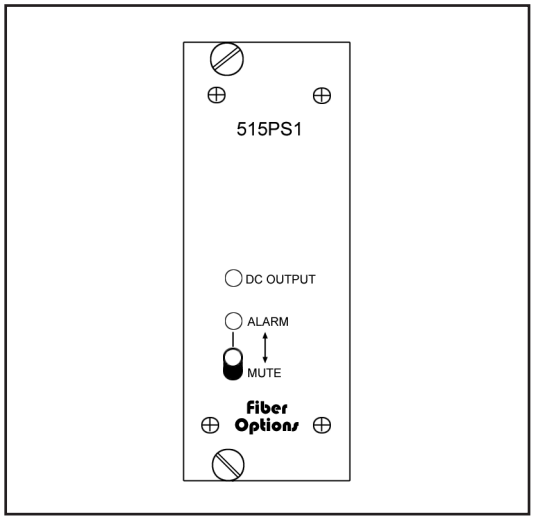
## TABLE 2: DIAGNOSTIC LEDS

| LED Name | Color | Indicated Condition |
|---|---|---|
| DC OUTPUT | Green | Indicates good output current level |
| | Red | Indicates excessive output current level. Turns red above 6 amps. |
| | Off | Indicates no output power |
| ALARM | Red | Indicates fiber failure alarm |
| | Off | Indicates no fiber alarm |

## FIGURE 1: 515R1 OUTLINE DRAWING (NO POWER SUPPLY INSTALLED)




## FIGURE 2: 515PS1 FRONT PANEL




***THE FOREVER WARRANTY***

*Fiber Options* warrants that, at the time of shipment, the products manufactured by *Fiber Options* will be free from defects in material and workmanship. Should any defects appear in the product, *Fiber Options* shall repair or replace the product or supply an equivalent, at its sole discretion. A Return Authorization (RA) number is required to send the unit back in case return is necessary. Return shipments to *Fiber Options* shall be at the buyer's expense. *Fiber Options* will return said equipment prepaid via best way.

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**12-0515R1 Rev A**

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