RED RACK.

Noise Reducing Rack Case.

What Will Fit?

The RED Rack has 10 spaces of rack rail mounted into an inner rack shell that is 19.25" wide by 18.75" tall by 30" deep. The inner rack shell features 3 sets of rack rail to accommodate most computers and peripherals. The front and rear rails are pre-tapped with 10/32" holes to fit standard rack screws. The mid mounted rack rails are used for rear mounting heavy equipment and cable management. The mid rails are dual flanged box rails, meaning the equipment can be mounted from the front or side of the rack rail. A captive nut (not included) must be used to screw into the rail. See figure 1 below for detailed dimensions on rack rail spacing.

Rack Panel Voucher

All connections into and out of the rack are handled by a custom built 1RU panel that is matched to the connections on your equipment that need accessed. The rack panel can have any connector you choose up to the $150 value. You have the option of declining the panel option and using the 1 RU space as an open cable passage. Panels are 3/16" black anodized flanged aluminum and are lazer labeled with the notation of your choice. Panel layout is presented as a separate approval drawing upon purchase.
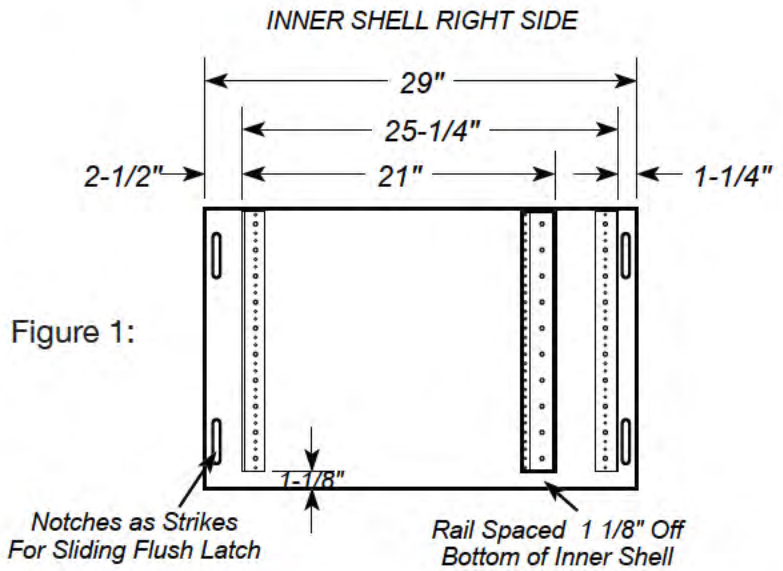
Custom Rack Panel Example

INNER SHELL RIGHT SIDE

Figure 1:

29"
25-1/4"
2-1/2"
21"
1-1/4"
1-1/8"

Notches as Strikes
For Sliding Flush Latch

Rail Spaced 1 1/8" Off
Bottom of Inner Shell

Photo Of Rack Rail Placement

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Cooling is handled by 4 Noctua NF-P14FLX fans. These fans spin at 1200 RPM each and operate at 19.6 db A at maximum power. Should you desire even quieter operation, low noise and ultra low noise cables are provided to drop the fan speeds. with the low noise and ultra low noise cables, the output dbA is reduced to 13.2 and 10.1 respectively.

The RED Rack pulls cool air from below the case through filter foam into the equipment section via the 4 Noctua fans. Air flows through the case at a rate of 872,978.5 cubic feet per min which means the internal air in the equipment section is replaced every 1.4 seconds! The fans are controlled via a touch panel with a color LCD screen. The fan controller monitors each fan speed and comes equipped with 4 temperature probes that can be placed any where the user wants to monitor equipment temperature. The cooling system is hardwired to an on/off switch that allows the fans to be turned off quickly should ultra silent operation be required.

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The RED Rack was designed from the ground up for the production environment. It was tested by an independent testing lab in a hem-anechoic chamber to provide the most accurate information on its performance. The tests were performed by placing a half inch random-incidence microphone on a stand and a small speaker array inside the unit. An array of 10 microphones were placed around the exterior of the case on a 2.5m radius. Pink noise was played through the internal speaker and the results were measured by the exterior microphones.

Noise Reduction Average Of Exterior Mics

1/3 OBCF (Hz)	Exterior Ambient	Exterior Test 1	Exterior Test 2	Exterior Test 3
100	2.0	22.6	22.4	22.5
125	0.0	22.8	22.9	22.9
160	-1.6	20.3	20.5	20.4
200	-1.8	24.9	25.0	24.9
250	-1.8	34.8	34.8	35.1
315	-1.7	37.5	37.5	37.6
400	-1.5	38.3	38.1	38.2
500	-1.0	35.8	35.9	36.0
630	-0.5	28.1	28.1	28.1
800	0.2	29.4	29.4	29.6
1000	0.9	24.4	24.4	24.5
1250	1.7	22.4	22.4	22.5
1600	2.5	20.1	19.9	20.1
2000	3.2	16.0	16.0	16.1
2500	4.0	14.8	14.8	14.8
3150	4.7	14.8	14.9	14.8
4000	5.3	16.1	16.1	16.1
5000	5.7	17.3	17.3	17.3
6300	6.0	19.0	19.0	19.0
8000	6.1	17.7	17.7	17.8
10000	6.0	13.9	13.9	14.0

Noise Reduction Totals Of Interior Mic

1/3 OBCF (Hz)	Interior Ambient	Interior Test 1	Interior Test 2	Interior Test 3
100	11.6	50.5	50.3	50.4
125	6.8	52.6	52.6	52.6
160	5.4	54.5	54.7	54.6
200	4.7	59.0	59.0	58.9
250	3.9	66.7	66.6	67.0
315	3.0	62.2	62.1	62.2
400	2.7	54.2	53.8	54.0
500	2.3	55.1	55.2	55.4
630	2.2	51.8	51.9	52.0
800	2.2	64.7	64.7	64.8
1000	2.5	60.5	60.5	60.5
1250	2.8	54.2	54.2	54.4
1600	3.4	59.3	59.4	59.4
2000	4.0	54.0	54.0	54.1
2500	4.7	55.6	55.6	55.6
3150	5.4	51.9	52.1	52.0
4000	5.9	54.3	54.4	54.4
5000	6.3	56.3	56.4	56.3
6300	6.6	53.6	53.6	53.6
8000	6.6	53.7	53.7	53.7
10000	6.3	47.6	47.6	47.7

Noise Reduction Within Hemi-Anechoic Chamber

One-third Octave Band Center Frequency (Hz)	Avg Case Interior L_p (dB)	Avg Case Exterior L_p (dB)	NR (dB)	Octave Band NR (dB)
100	50 4	22 5	28	
125	52 6	22 8	30	36
160	54 6	20 4	34	
200	59 0	24 9	34	
250	66 8	34 9	32	36
315	62 2	37 5	25	
400	54 0	38 2	16	
500	55 2	35 9	19	26
630	51 9	28 1	24	
800	64 7	29 5	35	
1000	60 5	24 4	36	40
1250	54 3	22 4	32	
1600	59 4	20 0	39	
2000	54 0	15 8	38	45
2500	55 6	14 4	41	
3150	52 0	14 4	38	
4000	54 4	15 7	39	43
5000	56 3	17 0	39	
6300	53 6	18 7	35	
8000	53 7	17 4	36	40
10000	47 6	13 2	34	

See Next Page For Test Summaries

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1/3 Octave Band Summary

Freq.	Reduction In dB.
100	27.9
125	29.8
160	34.2
200	24
150	31.9
315	24.6
400	15.8
500	19.4
630	23.8
800	35.3
1k	36.1
1.25k	31.9
1.6k	39.4
2k	38.3
2.5	41.2
3.15k	37.6
4k	38.7
5k	39.3
6.3k	34.9
8k	36.3
10k	34.5

Octave Band Summary

Freq.	Reduction In dB.
125	36.3
250	36.4
500	25.6
1k	39.5
2k	44.6
4k	43.4
8k	40

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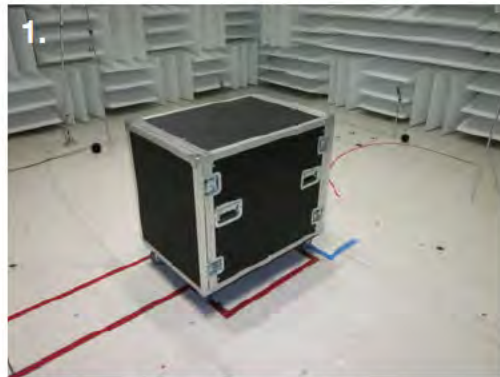
1. Case Ready For Testing
2. Interior View Showing The Speaker Array & Measurement Mic
3. Case In Chamber Surrounded By Microphones
4. Close Up Of Test Mic

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1. What types Of Gear Is The RED Rack Designed For?

The RED Rack is designed for common noisy equipment used in the recording studio such as: computers, hard drives, console power supplies, and studio monitor power amplifiers.

2. Is There Anything I Shouldn't Put In The RED Rack?

The RED Rack works by moving a large volume of air via fans around your gear to exhaust heat. **THE RED RACK IS NOT AN AIR CONDITIONER!** Keep an open rack space between heat producing equipment and mount the 4 temperature probes to monitor worst cases scenarios such as right by the exhaust fan output on your computer.

3. Can I Fill Every Rack Space?

We recommend keeping an open rack space between each piece of gear for maximum air circulation. If you must fill every rack space keep a very close eye on the LCD screen to monitor the internal temperature. The rack rail is mounted in the shell to allow circulation above and below should you need to occupy the top and or bottom space.

4. What Is The Most Ideal Environment For The RED Rack?

The RED Rack is designed to work in a recording studio where the ambient temperature is between 65 and 80 degrees. In most instances, the RED Rack keeps its internal temperature 3 to 5 degrees above the room temperature. You can set the fan controller to alert you when the internal temperature exceeds a predetermined threshold. We recommend setting the upper threshold to 90 degrees.

5. Can I Change The Way The Doors Swing?

Yes, simply unscrew the hinge from the side and flip the door; the latch strikes are routed into both sides of the inner rack shell. You can specify which way the door swings when you place your order.

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System Specifications

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FAQ

6. How Do I Wire My Gear If The RED Rack Is Sealed?

Your $150 rack panel voucher allows you to customize a panel to match the connections on your equipment. The $150 voucher covers a 1RU panel with any options including laser etching and pig tails from the connectors to your gear. LM Cases builds the panels one at a time per order. You can discuss options with your account manager during the design phase of your project. Common connectors on the panel include Powercons, XLR inputs, USB's, HDMI's and DVI ports.

7. Why Are There 3 Sets Of Rack Rail?

The RED Rack uses box combination rail as a mid mounted rack rail to rear mount heavy pieces of equipment in addition to providing a great spot to tie down cables. The rear rail serves as another place to tie cables and rear mount deep gear.

8. Where Should I Mount The Temp Probes?

We recommend mounting the 4 temp probes by the intake and exhaust of your hottest pieces of gear.

9. Is The Air Filtered Coming Into The Rack?

Yes. There is filter foam over the intake and exhaust of the rack. The foam can be easily removed and rinsed out for easy cleaning.

10. How Long Does It Take To Get My RED Rack?

Generally it takes between 2.5 and 3 weeks depending on where your order falls in relation to our production schedule.

11. I Have A Question About A... / Will The RED Rack Work With A ....

If you have other questions about the rack, contact us. You can go to LMCASES.COM and email any account manager directly or give us a call.

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