



### *LP-HBR-N Series*

- 1.8 MHz to 100 MHz
- Covers 160-6 Meter Bands
- 2 kW Average RF Path
- Multi-Strike Capability
- Less than 0.1dB Insertion Loss
- Type N Connectors
- White Bronze Plated Body
- IP 65 Rated for Outdoor Use
- Bulkhead or Flange Installation



## *Lightning and Surge Protection for The 21st Century™*

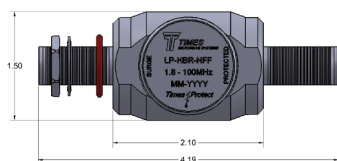
The **Times Protect®** LP-HBR-N series high performance surge arrester series addresses applications in the 1.8MHz-100MHz spectrum that includes the **160-6 Meter Amateur Radio Bands**. Our DC blocking technology employed in this gas tube design provides optimum isolation of the antenna port from the protected equipment port for maximum surge protection. LP-HBR-N series surge protectors have exceptional RF performance and are constructed from the highest quality materials for unsurpassed durability and longevity. They equal or surpass all applicable industry standards.

The LP-HBR-N series product family is available with N connector configurations to satisfy various installation requirements.

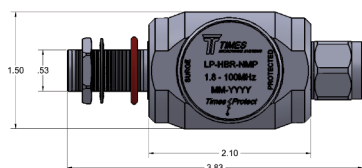
#### LP-HBR-N Series:

- LP-HBR-NFF  
N Female connectors on surge and protected sides
- LP-HBR-NMP  
N Male connector on protected side with N Female connector on surge side
- LP-HBR-NMS  
N Male connector on surge side with N Female connector on protected side

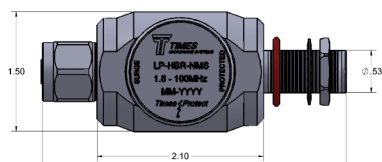




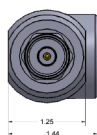
- LP-HBR-NFF  
1.8-100 MHz DC Blocked N Type F/F



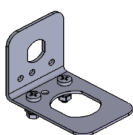
- LP-HBR-NMP  
1.8-100 MHz DC blocked N Male on Protected Side



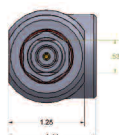
- LP-HBR-NMS  
1.8-100 MHz Blocked N Male on Surge Side



Male End



Included Mounting Bracket



Female End

\*All dimensions shown in inches

## Electrical Specifications

Impedance	50 Ohm
Frequency Range	1.8 MHz - 100 MHz
Maximum VSWR/Return Loss	<1.06:1 / <-30dB
Insertion Loss	< 0.1dB
Power Handling - Average	2000 Watts
Maximum Peak RF Voltage	4400 Volts
Maximum Surge Current	20kA Single Strike
Multiple Strikes	10kA (8x20µs wave-form)
Energy Throughput Rating	<12 mJ
Impulse Spark-Over Voltage	2000 Volts Nominal
DC Turn On Voltage	1400 Volts Nominal
Protection Circuit	DC Blocked, Uni-Directional

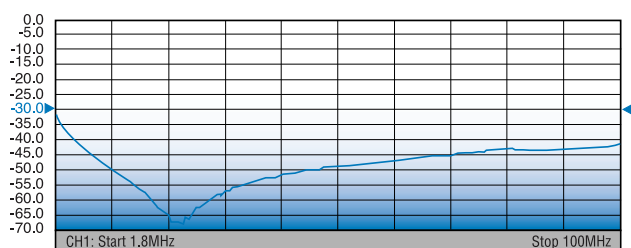
## Mechanical / Environmental Specifications

Temp Range Storage/Operating	-40°C - +85°C / -40°C - +50°C
Weatherization	IP 65
Vibration	US MIL-STD 202, Method 204-B
RoHS Compliant	Yes
Mating Life Cycle	> 500
Recommended Coupling Nut Torque	7 to 10 in-lb
Unit Weight	8.0 oz / 227g

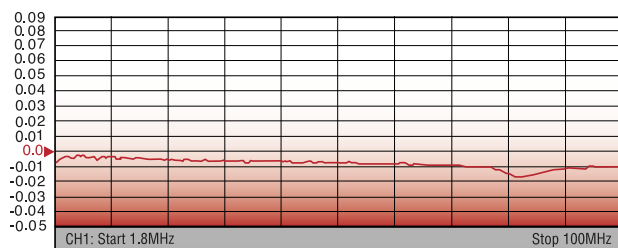
## Material Specifications

Component	Material	Plating
Body	Aluminum	White Bronze
Inner Conductor Male	Brass	Silver
Inner Conductor Female	Phosphor Bronze	Silver
Coupling Nut	Brass	White Bronze
Insulator	PTFE	--
O-Ring	Silicone Rubber	--

S11 TYPICAL RETURN LOSS



S21 TYPICAL INSERTION LOSS



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www.timesmicrowave.com

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LP-HBR-N 07/17



ISO 9001 Certified

### *LP-HBR-U Series*

- 1.8MHz to 100MHz
- Covers 160-6 Meter Bands
- 2 kW Average RF Power Rating
- DC Blocked RF Path
- Multi-Strike Capability
- Less Than 0.1 dB Insertion Loss
- UHF Connectors
- White Bronze Plated Body
- IP-65 Rated for Outdoor Use
- Bulkhead or Flange Installation



### *Lightning and Surge Protection for The 21st Century™*

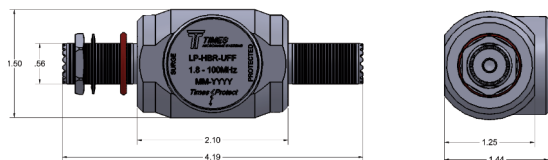
The **Times Protect®** LP-HBR-U series high performance surge arrester series addresses applications in the 1.8MHz - 100MHz spectrum that includes the 160-6 meter amateur radio bands.

Our unique DC blocking technology employed in this gas tube design provides optimum isolation of the antenna port from the protected equipment port for maximum surge protection. LP-HBR-U series surge protectors have exceptional RF performance and are constructed from the highest quality materials for unsurpassed durability and longevity. They equal or surpass all applicable industry standards.

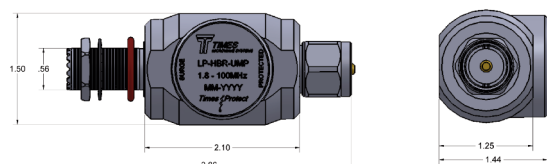
The LP-HBR-U series product family is available with three connector configurations to satisfy various installation requirements.

#### LP-HBR-U Series:

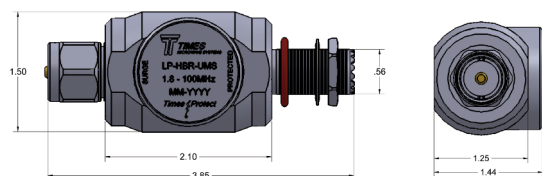
- LP-HBR-UFF  
UHF Female connectors on surge and protected sides
- LP-HBR-UMP  
UHF Male connector on protected side with UHF Female connector on surge side
- LP-HBR-UMS  
UHF Male connector on surge side with UHF Female connector on protected side



- LP-HBR-UFF  
1.8 - 100MHz DC Blocked UHF Type F/F



- LP-HBR-UMP  
1.8 - 100MHz DC Blocked UHF Male on Protected Side



- LP-HBR-UMS  
1.8 - 100MHz DC Blocked UHF Male on Surge Side



LP-BFU-AL Bracket (Included)

\*All dimensions shown in inches

## Electrical Specifications

Impedance	50 Ω
Frequency Range	1.8 MHz - 100MHz
VSWR/Return Loss	<1.06:1 / <-30dB
Insertion Loss	< 0.1dB
Maximum Peak RF Voltage	4400 Volts
Maximum Surge Current	20 kA Single Strike
Energy Throughput Rating	<12mJ
Power Handling - Average	2000 Watts
Impulse Spark-Over Voltage	2000 Volts Nominal
DC Turn On Voltage	1400 Volts Nominal
Protection Circuit	DC Blocked, Uni-Directional

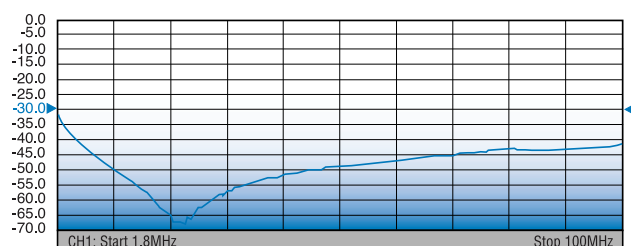
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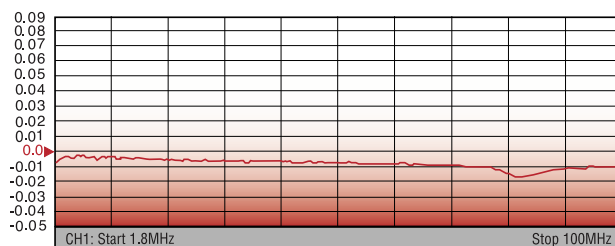
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