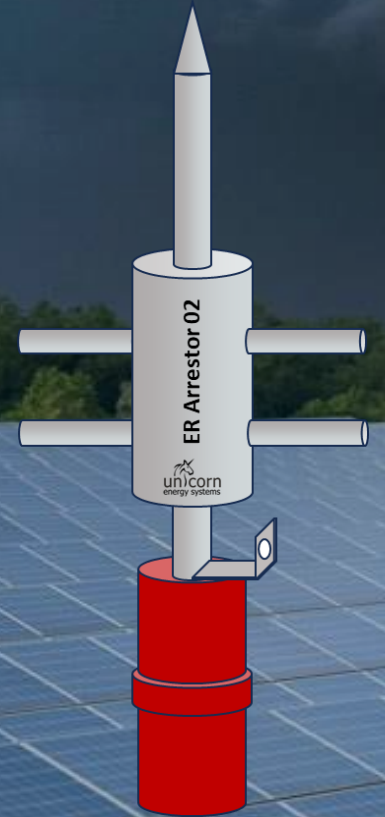
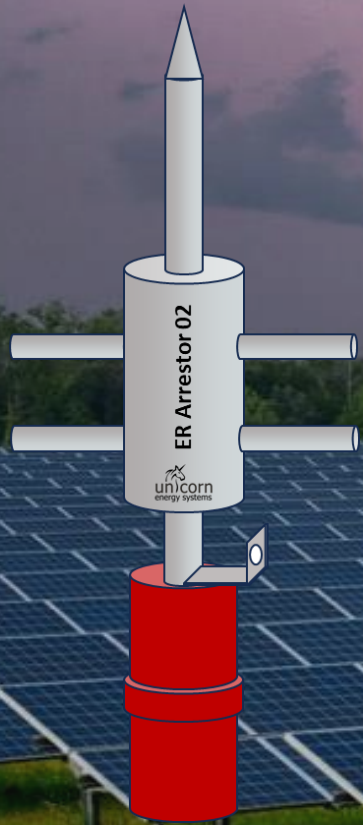




# ER Arrestor - 02<sup>®</sup>

Light Arrestor engineered for your protection

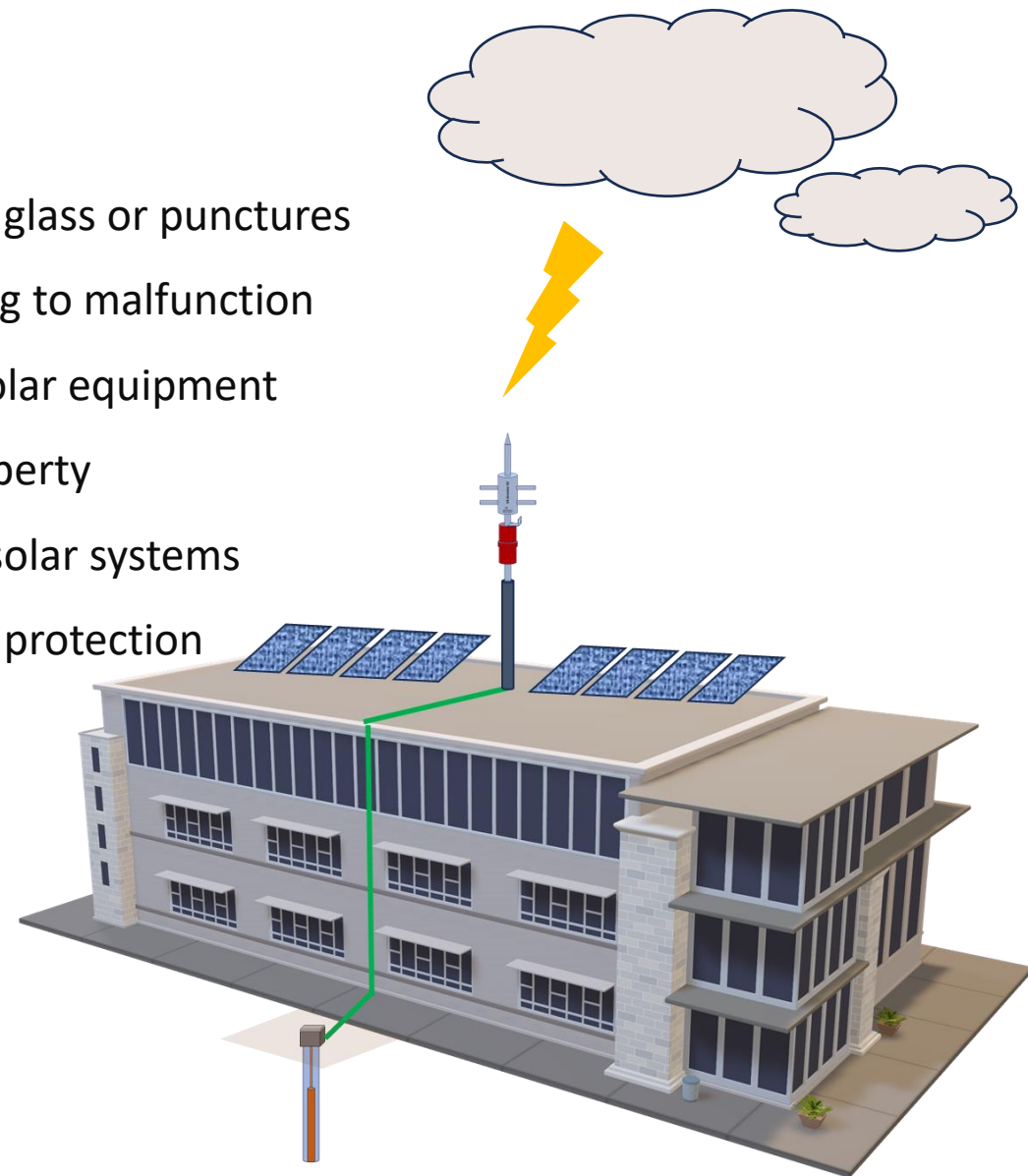


[www.unicornenergysystems.com](http://www.unicornenergysystems.com)

Version Date April 2024

## Benefits of Lighting Arrestor

1. Lightning strikes can physically damage solar panels, causing shattered glass or punctures
2. Electrical surges from lightning can overload panel components, leading to malfunction
3. Even indirect lightning strikes can induce damaging voltage surges in solar equipment
4. Lightning-induced fires pose a risk to both panels and surrounding property
5. Electromagnetic interference from lightning can disrupt electronics in solar systems
6. Grounding systems may be compromised by lightning strikes, reducing protection
7. Lightning strikes can corrupt data in monitoring systems, hindering performance analysis
8. Repairing lightning-damaged equipment incurs significant financial costs and downtime



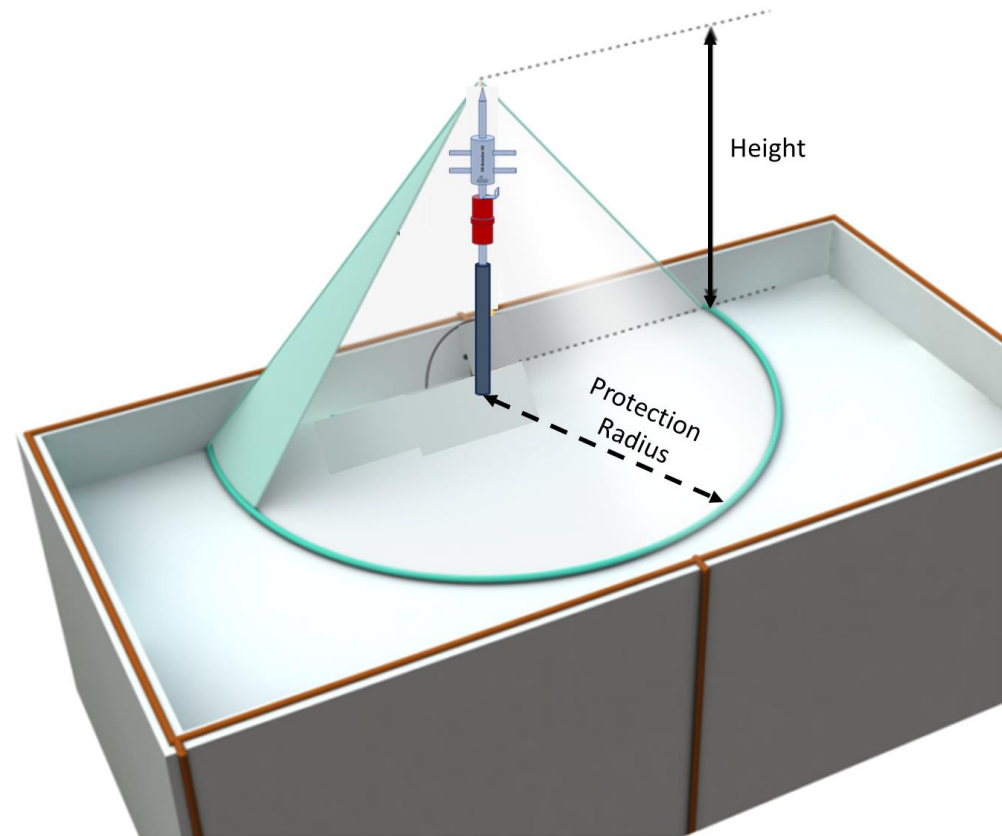
## How Much Protection Area ER Arrestor Covers at Different Height

ER Arrestor LPS-IV

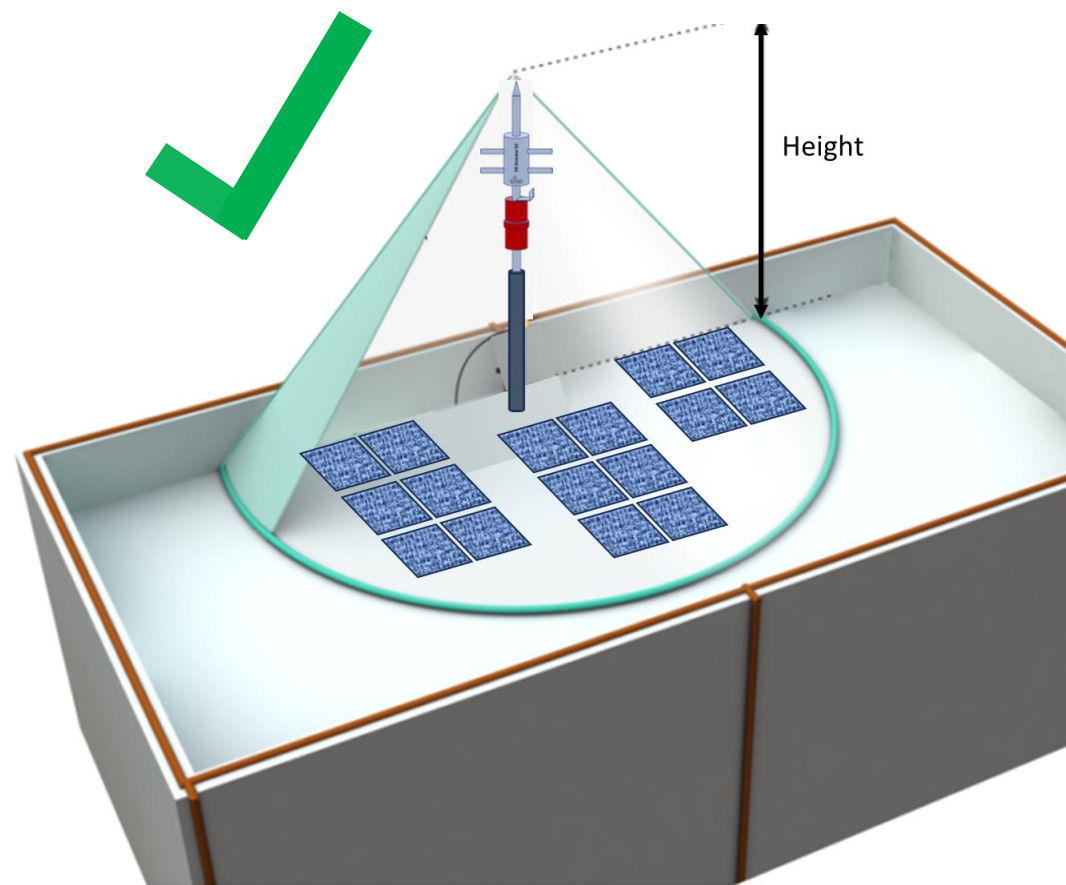
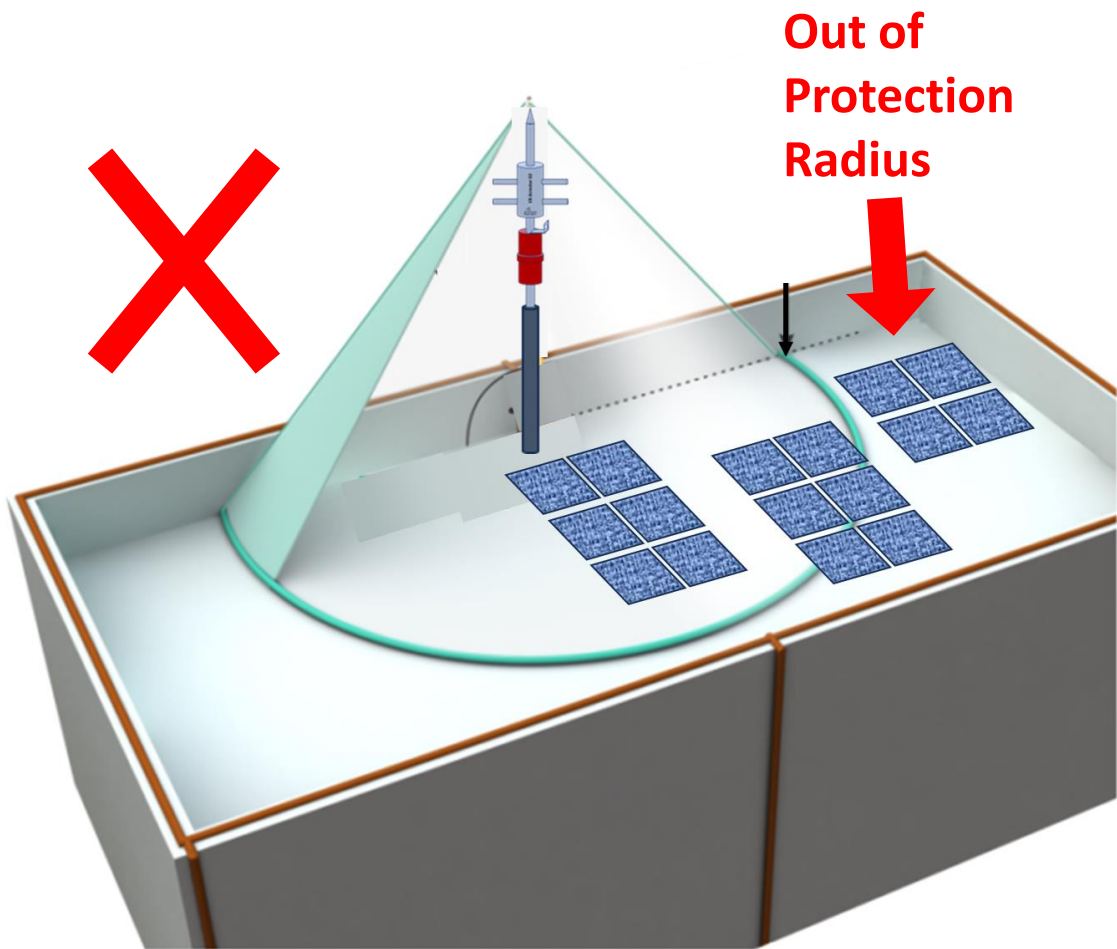
Height ft	Protection radius -ft	Circular Area Marla
10	40	22
15	51	36
20	58	47
25	63	55
30	66	61
35	73	74
40	75	79

Calculation according to IEC 62305-3

[Scan or click to see  
YouTube video  
for details](#)

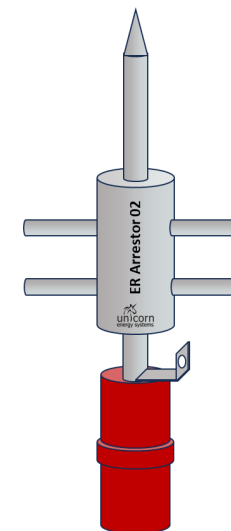


## How You Must Place Your Equipment within Protection Radius



## Why ER Arrestor -02 is Special

1. Made with rust free stainless **steel (SS-304 Taiwan)** with high melting point – Recommended for most efficient light arrestors
2. Properly engineered for easy installation at any kind of site – Solar Panels , Telecom towers, Building etc.
3. High Voltage and robust insulation with pole
4. Packed with all accessories required for installation
5. Protection radius and other parameters available for installation (IEC 62305-3)
6. pole with 9ft height with ER Arrestor -02 for easy installation



[Scan or click to see  
YouTube video  
for details](#)



## Packaging Detail

Packaging Shape	Carton Box
Net Weight	Approx. 2kg
Product Weight	1.7Kg
H x W x D (inch)	19" x 10" x 2.5"
Storage conditions	Low humidity

Scan or click to see  
YouTube video



## Box includes



High Voltage Insulator  
X 1



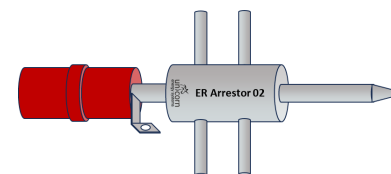
SS Zip tie 12 inch  
X 2



16mm long neck thimble  
X 1

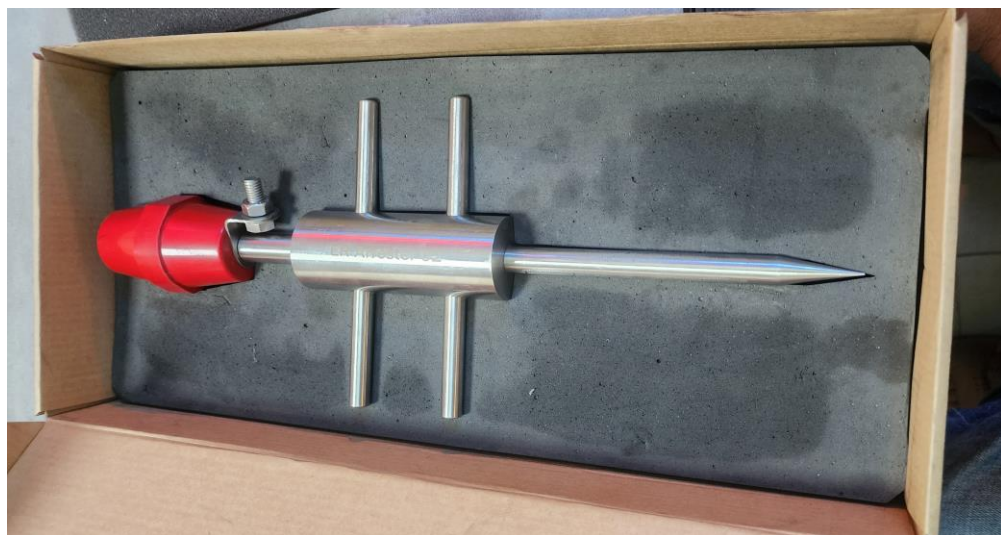


SS Nut bolt  
X 1

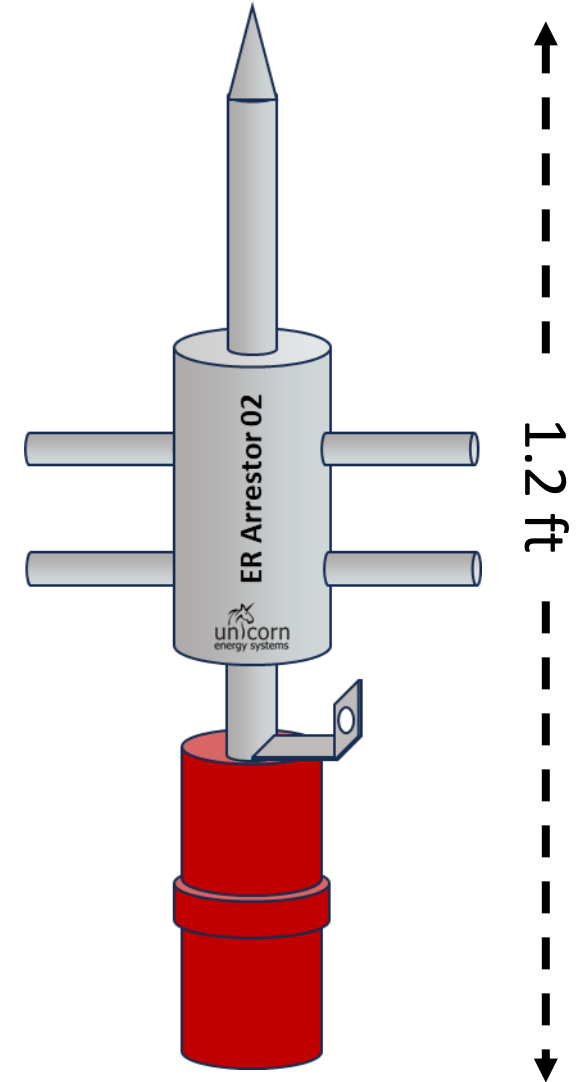
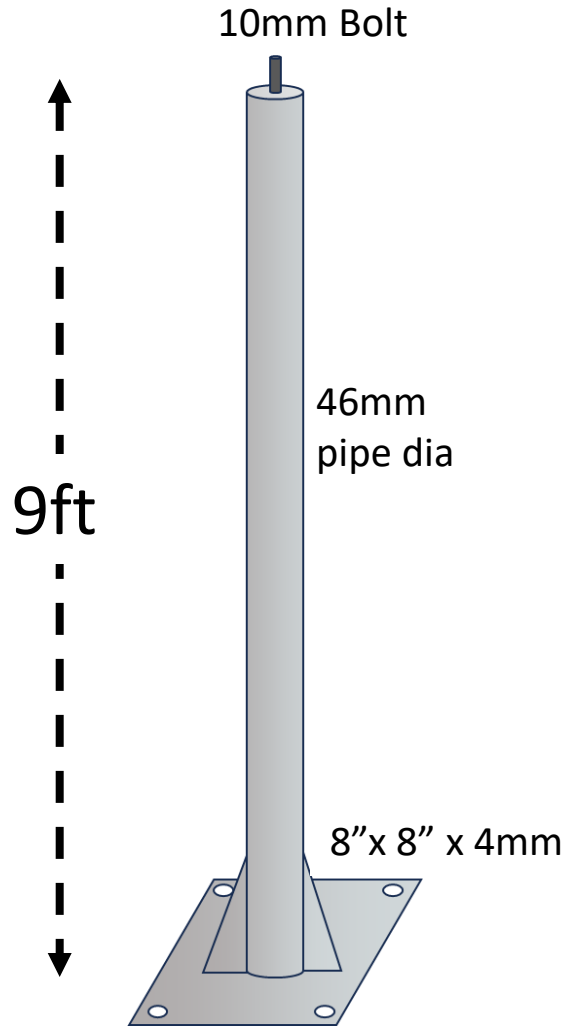


ER Arrestor 02  
X 1

## ER Arrestor -02



# ER Arrestor - 02<sup>®</sup>





**HIGH VOLTAGE ENGINEERING LABORATORY**  
DEPARTMENT OF ELECTRICAL ENGINEERING  
UNIVERSITY OF ENGINEERING AND TECHNOLOGY  
LAHORE-54890, PAKISTAN

Unicorn Energy Systems,  
Plot # 3, Khursheed Street, Opposite Rehman City Office,  
0.5 km Saggiyan Bypass, Lahore.

No:Univ./EED/122/24  
Dated: 13.06.2024

Subject: Insulation Test of the Base of the Lightning Arrestor

The following Lightning Arrestor with Insulator was tested on 03.06.2024 in the High Voltage Engineering Laboratory. In lieu of this testing, a testing fee was deposited in Habib Bank Limited, Engineering University Branch, Lahore. The testing results are presented below:

**TEST REPORT:**

**Equipment Tested:** ER Light Arrestor with Insulator  
**Manufacturer:** Unicorn Energy Systems

**TEST DESCRIPTION:**

**Objective:**

To measure the insulation resistance of the insulator and determine its 50% flashover impulse voltage.

**Test Method:**

1. Measurement of insulation resistance using a Megger at 5000 V DC.
2. Determination of 50% flashover impulse voltage.

**TEST CONDITIONS:**

**Ambient Temperature:** 37 °C  
**Humidity:** 40 %

**TEST RESULTS:**

- I. Measured Insulation Resistance: Above 10 TΩ (Tera Ohm)**  
**Performance:** The insulator exhibited excellent insulation properties with Insulation resistance well above the acceptable threshold.
- II. 50% Flashover Impulse Voltage: 80 kV (1.2/50 μs standard lightning impulse)**  
**Performance:** The insulator demonstrated a 50% flashover impulse voltage of 80 kV, indicating its capability to withstand high voltage stress.

**Test(s) witnessed by:**

Mr. Muhammad Bilal,  
Assistant Professor, Department of Electrical Engineering,  
UET, Lahore.



Chairman  
CHAIRMAN  
Electrical Engineering Department  
Deptt. of Elect. Engg.  
University of Engineering  
& Technology, Lahore



Dr. Muhammad Asghar Saqib  
Director  
High Voltage Engineering Laboratory

Page 1 of 1



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DEPARTMENT OF ELECTRICAL ENGINEERING  
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LAHORE-54890, PAKISTAN

Unicorn Energy Systems,  
Plot # 3, Khursheed Street, Opposite Rehman City Office,  
0.5 km Saggiyan Bypass, Lahore.

No:Univ./EED/121/24  
Dated: 13.06.2024

Subject: Testing of Lightning Arrestor

The following Lightning Arrestor was tested on 03.06.2024 in the High Voltage Engineering Laboratory. In lieu of this testing, a testing fee was deposited in Habib Bank Limited, Engineering University Branch, Lahore. The testing results are presented below:

**TEST REPORT:**

**Equipment Tested:** ER Light Arrestor 02 with Insulator  
**Manufacturer:** Unicorn Energy Systems

**TEST DESCRIPTION:**

**Objective:** To verify the performance of the lightning arrester under high-voltage impulse conditions.  
**Test Method:** Application of high-voltage impulses to the lightning arrester to ensure it conducts the impulses as expected.

**TEST CONDITIONS:**

**Impulse Voltage Applied:** 110 kV (1.2/50 μs standard lightning impulse)  
**Number of Impulses:** 10  
**Ambient Temperature:** 37 °C  
**Humidity:** 40 %

**TEST RESULTS:**

**Impulse Conductance:** The lightning arrester successfully conducted all 10 applied impulses.  
**Performance:** The arrester performed as expected without any failure or deviation from the expected behaviour.

**Visual Inspection:** Post-test visual inspection showed no signs of physical damage or degradation.

**Test(s) witnessed by:**

Mr. Muhammad Bilal,  
Assistant Professor, Department of Electrical Engineering,  
UET, Lahore.



Chairman  
CHAIRMAN  
Electrical Engineering Department  
Deptt. of Elect. Engg.  
University of Engineering  
& Technology, Lahore

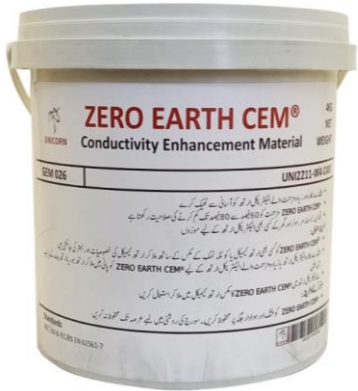


Dr. Muhammad Asghar Saqib  
Director  
High Voltage Engineering Laboratory

Page 1 of 1

## Test Certificate

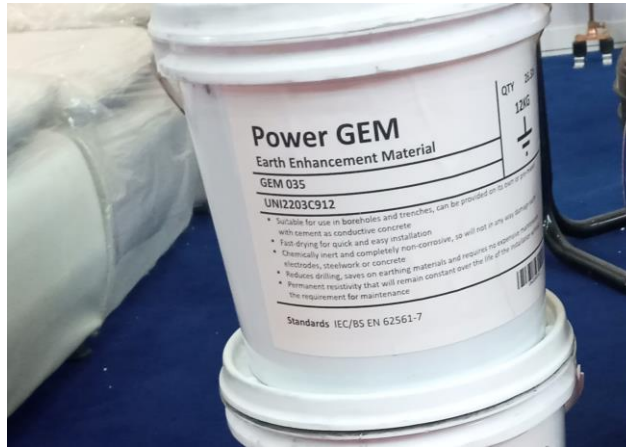
## Other Products



**Zero Earth CEM™**



**Super Earth GEL Powder™**



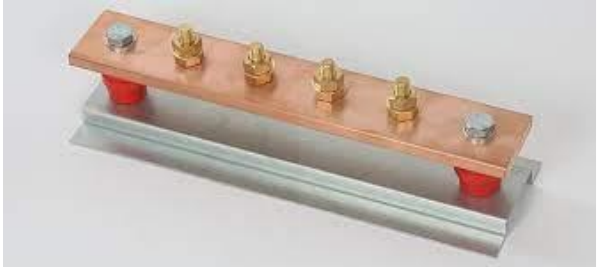
**Power GEM™**



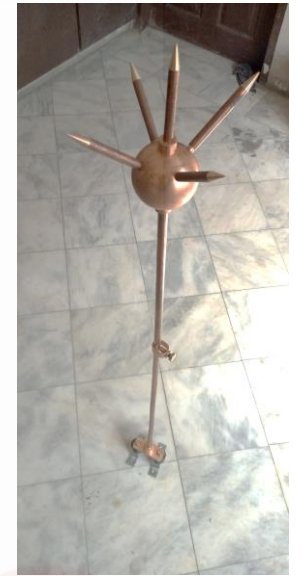
**Power Earth GEM  
Pre Fabricated Rod**

## Other Products

ECP



Earth PIT



Lighting Arrestor

Clumps and Earth Wire



Earth PIT  
Cover



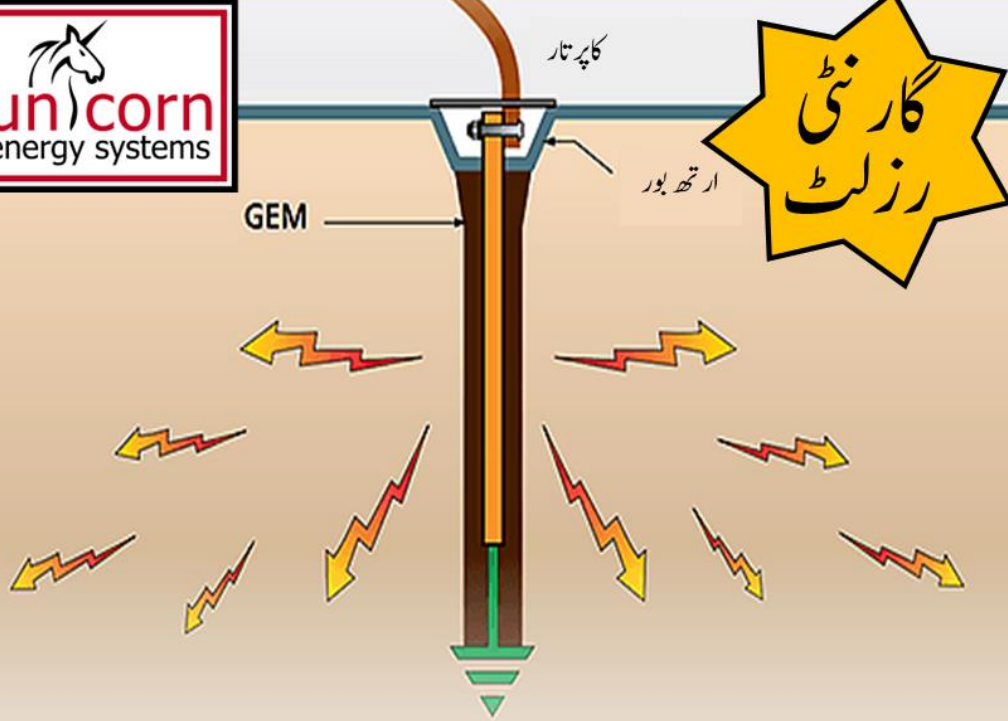
ECP Terminal  
Box



ESE Arrestor

# الیکٹریکل ارتھ کے لیے بہترین فارمولا

ارتھ کی مزاحمت کو 30 سے 60 فیصد تک کم کرے



Bentonite Based Composition



## خصوصیات

- ✓ ارتھ مزاحمت کو 30% سے 60% تک کم کرنے کی صلاحیت
- ✓ لمبے عرصے تک نمی کو جذب کرنے کی صلاحیت 300% زیادہ
- ✓ خصوصی تیار کردہ فارمولا ہر زمین کے لیے موزوں

## استعمال کا طریقہ

- 1 پاؤڈر اور پانی کی مقدار لیں
- 2 5 منٹ تک ملائیں
- 3 آمیزہ کاپرٹارڈ کے ارد گرد ڈالیں



- ✓ سوپر ارتھ جیل کو کسی برتن میں پانی کے ساتھ اچھی طرح ملائیں۔ پانی آہستہ آہستہ ڈالیں اور تب تک ملائیں جب تک ملائم جیل بن جائے۔ پانی زیادہ ہونے سے کوئی مسئلہ نہیں۔
- ✓ سوپر ارتھ جیل کو کم سے کم 5 منٹ ضرور پانی کے ساتھ ملائیں۔ پھر زمین میں کاپرٹارڈ کے ارد گرد ڈال دیں اور بور میں مزید پانی ڈالیں۔
- ✓ سوپر ارتھ جیل بور میں ڈالنے کے بعد بور میں عام مٹی ڈالیں۔ ریت نہ ڈالیں۔
- ✓ سوپر ارتھ جیل پاؤڈر شکل میں بور میں ڈال کر اوپر سے پانی نہ ڈالیں۔ کیونکہ ایسے ارتھ جیل پانی میں کس نہیں کیا جاسکتا۔
- ✓ بور کے اندر 1 میٹر الیکٹروڈ کے لیے 1 سے 2 بالٹی۔ کاپر پلیٹ کے لیے 2 سے 3 بالٹی۔

www.unicornenergysystems.com

Standards

NEC 250 & IEC/BS EN 62561-7



UNI2302-W12-C700



UNICORN

# ZERO EARTH CEM®

Conductivity Enhancement Material

4KG

NET

WEIGHT

GEM 026

UNI2211-W4-C400

- پہلے سے ناکارہ اور زیادہ مزاحمت والے الیکٹریکل ارتھ کے لیے آسانی سے ٹھیک کرے
  - ZERO EARTH CEM® مزاحمت کو 60 فیصد سے 80 فیصد تک کم کرنے کی صلاحیت رکھتا ہے
  - فیکٹری، ٹرانسفارمر، سولر اور گھر کے کسی بھی الیکٹریکل ارتھ کے لیے موزوں
- طریقہ استعمال:

- پہلے سے ناکارہ الیکٹریکل ارتھ یا زیادہ مزاحمت والے الیکٹریکل ارتھ کے لیے ZERO EARTH CEM® کو پانی میں ملا کر ارتھ بور یا ارتھ پٹ کے پائپ میں ڈالیں
  - نئے الیکٹریکل ارتھ میں ZERO EARTH CEM® کا مکس ارتھ کیمیکل میں ملا کر استعمال کریں
  - ZERO EARTH CEM® کو کسی بھی ارتھ کیمیکل یا کوئلہ نمک کے مکس کے ساتھ ملا کر ارتھ کیمیکل کی خصوصیات اور بہتر کی جاسکتی ہیں
- سٹور کرنے کا طریقہ:
- ZERO EARTH CEM® کو خشک اور ہوادار جگہ پر محفوظ کریں۔ سورج کی روشنی میں لمبے عرصہ تک محفوظ نہ کریں

## Standards

NEC 250 & IEC/BS EN 62561-7



UNI2211-W4-C400



# Power Earth GEM

## Pre Fabricated Earth Rods



UNI2303-W7-C7000

Standards

NEC 250 & IEC/BS EN 62561-7

