FLASH VECTRON™

lightning protection

Early Streamer Emission (ESE)
No Power Supply or Solar Cells
No Radioactive,
Discharge Current 300 kA
Protection Radius 85-150 M

HLI
HAMBURG LABORATORY INC.
GERMANY

CE Approved

ILPA
International lightning Protection Association

SNI

ABOUT FLASH VECTRON

FLASH VECTRON LIGHTNING PROTECTION SUPREMACY

Flash Vectron lightning protection is an electrostatic lightning rod, ESE based on and designed specifically for Tropical Zone such as Indonesian Country.

1. Designed by Indonesian lightning engineer and Germany architect,
2. Secure Terminal Unit,
3. Free Maintenance,
   - No Power Supply or Solar Cells
   - No Radioactive
   - Discharge Current 150 KA
4. More Practical, designed easily for installation in the ground,
5. High Quality material,
   - SNI & IEC Standart
6. More Economical and Affordable Prices,
7. Latest Technology (Exceptional for Tropical Zone)
8. Trustworthy Produsen
   - Local Lightning Rod Production Company Cooperate with German Company

FLASH VECTRON lightning protection system is a one system designed to protect a structure from damage due to lightning strikes by intercepting such strikes and safely passing their extremely high voltage currents to "ground". Flash Vectron lightning protection system include a network of lightning rods, metal conductors, and ground electrodes designed to provide a low resistance path to ground for potential strikes.

RECOMENDATION

a. Certification Flash Vectron Lightning Protection
b. 1 (One) year Warranty
c. Labor Department letter
d. State Electricity Firm and - Indonesian LMK

OBJECTIVITY

a. Building
b. Industry Area
c. Factory
d.Huge Electronic Tools/Transmitter
e. Entrepot, etc.



FLASH VECTRON DETAIL

Main Rod Receiver
The rod is made from metal high temperature, this rod has capacity to receive lightning flash up to 350 KA.

Electrodes
This electrodes serves as a main role in collecting deposits and energy reserve as an energy sources for awakening Early Streamer Emission (ESE) system

Compact Ion Carbon/ Generator
Collect energy from electric field, consist of energy capacitor unit and ion awakening, sensoring and protection ware

Wing Disseminator
This part is a conductor to shoot ion

Connector
This part is a connector of down conductor

Operation System
At a time a flock of cloud flow and approach the top of building which has been protected by lightning protection Flash Vectron, These electro attached in the equipment collect and deposit energy from electrical cloud and electric field. In the capacitor unit after refillin has been adequate then flown to the ion generation. In the same time plenty of atmoshpheric electrical energy among the cloud inform ion generator. This information then managed by ion generator as a trigge to discharge the energy. This triggering will result streamer leader from central pick up rod and awakening projection for terminal Unit.

Laboratorium Test

HAMBURG LABORATORY Inc.
Pine Street, Hamburg PA 19521

FLASH VECTRON TYPE

Specification
Type **FV6**

Weight	: 3,5	Kg
Lenght	: 430	mm
Diameter	: 5	Inches
Radius Protection	: 150	Meters

Specification
Type **FV3**

Weight	: 3	Kg
Lenght	: 370	mm
Diameter	: 5	Inches
Radius Protection	: 85	Meters

Lightning strike occur of the change of electrical load (negative charge) from the cloud to the surface of the ground, choose the highest object that containing electrical load (positive charge). We can see "Step leader" lightning strike, it is like a glowing lines on the sky. Effect from the lighting strike can cause very serious damages to building, occupants and electrical Equipment.

Flash Vectron is the pioneer of lightning conductor electrostatis system from Indonesia, have a large protection area, efficient an low maintenance (Flash Vectron use existing power from negative charge of the grounding system).

TABLE OF HIGH RISK PROTECTION RADIUS

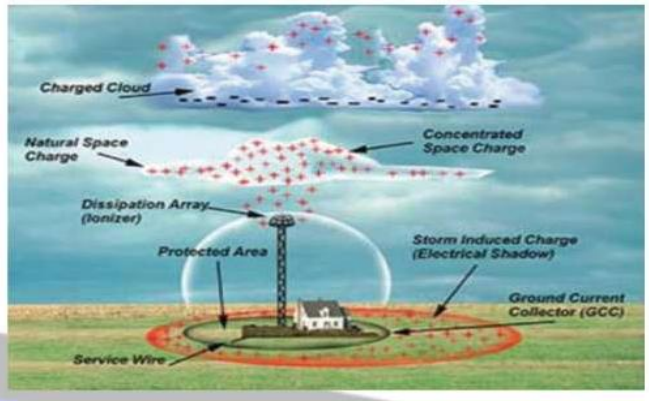
HIGH	3M	4M	5M	6M	7M	8M	9M	10M	20M
Fv3	53	62	69	76	82	88	93	98	139
Fv6	76	88	98	108	116	124	132	140	197

TABLE OF STANDARD PROTECTION RADIUS

HIGH	3M	4M	5M	6M	7M	8M	9M	10M	20M
Fv3	67	78	87	95	103	110	117	123	174
Fv6	95	110	123	135	146	156	166	175	247

Protection Shape

Protection Shape of this Flash Vectron as similiar with a cage (look at figur below) so everything under and inside of the cage will be safe from direct lightning flash



FLASH VECTRON LIGHTNING CABLES

EXTERNAL INSTALLATION

INTERNAL/EXT. INSTALLATION

HIGH EXTERNAL INSTALLATION

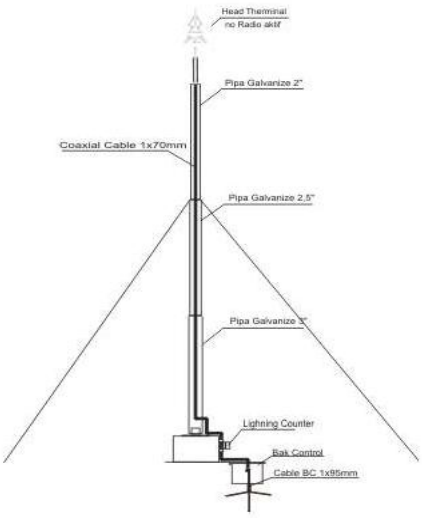
When the installation of lightning conductor cable placed outside away from buildings and other installation (electrical and data) or away from the reach of the occupants can use the cable cord BCC (Bare Copper Conductor) at least 50mm, with cheap consideration .
Meanwhile, when the anti-lightning conductor cable in put away from the buildings and other installation (electrical, data) or away from the reach of the occupants can use cable NYY 50mm or 70mm cable with consideration enough to withstand lightning induction.
NYA exact same cable with NYY, which make into the NYY cable that has two insulators or two layers of copper wrapping, wrapping one layer while the NYA or the insulator.
And when the path installation can not keep it away from other installations (electrical, data, control, etc) then the cable types HVSC (High Voltage Single Core) the should be used as the only cable that can withstand voltage breakdown/induction (Inception Voltage) flow lightning , for example N2XSY Coaxial Cabel and 2x35MM.

SURGE ARRESTER CABLES

NYAF 16mm cable is usually used in the installation of internal protection (Surge Arrester Power), because in addition to bending this cable also has an insulator or wrapping copper, unlike cable BC. Even the installation is also highly recommended to wear conduite. In terms of installation must be connected to the grounding cable that typically use 50mm BC cable or connected directly to Ground Rod.

In the Installation of Internal protection (Surge Arrester PABX) used to use a regular telephone wires, generally the type of coaxial cable used is small in size. This is of course adapted to the use of its PABX installation on the cable. If you have installed the cable should remain connected to the grounding system , installation so that It can funciton optimaly.

MONO POLE LIGHTNING ROD



Mono pole can be used as an option Lightning contruction poles, from of contruction is ideal for securing hilly areas or wide area air.

Ideal function of mono pole is focused bolt of lightning in the lightning channel point, beacause with the sharpening of a static object thing then charge the earth will be more focused on the end, of course it is ideal for electrostatic lightning rod, lightning rod because utilizing electrostatic energy the system work.

This type of contruction has the technical term ranging from Mono Pole, Single-Pole, Free Standing, which is clearly the from that this contruction standing upright without any support , either in the from of pipe or steel wire/sling . The from can be pipe (round) or polygon.

Materials which it is possible to make a single pillar/mono pole is plumbing, galfanise, staenles steel, scedule. with a minimum thickness of 4mm when the bottom of the pipe will make the pole as high as +/- 20Mtr, of follow the pole height to be made should the Higher thick (more than 4mm)

FLASH VECTRON
INDONESIA

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Distributor: