

# star<sup>®</sup> EVOLUTION

Lightning rods - Testing remote

Early streamer Emission (ESE) - Air Terminal



# MANUFACTURER OF LIGHTING PROTECTION AND EARTH PROTECTION EQUIPMENT

PROTECTION **LLAMP**  
**TECH®**

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## OPERATION

The Streamer Advance contained by the CDT, allows the Priming Device STAR® to manage the lightning process, and to ensure the protection of its area.

Description of the protection process :

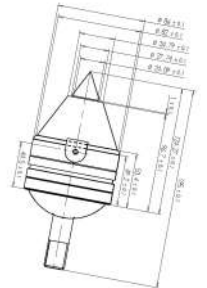
- ✓ The CDT detects the potential rise of the ambient electric field,
- ✓ Protection principle initiation process, prior to atmospheric discharge,
- ✓ Activate the detection of the descending plotter,
- ✓ Creation of the potential difference between the main body of the STAR® and its upper fins,
- ✓ Loading the upper fins of the STAR®,
- ✓ Control of the ascending tracer released by the STAR®, and evacuation in earth.

## THE + PRODUCTS

Products manufactured by Llamptech,  
Range of four powers,  
Functional tests,  
Individual marking protected,

Stand-alone operation,  
Photovoltaic sensors,  
Remote control available,  
Respect the environment,

Industrial verification procedure,  
Choice of aesthetic colors,  
Space and reduced weight,  
Range of products adapted to STAR®  
Easy installation,



Manufacturer warranty.



## TESTS & STAR Validations

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- Compliance with standard NF C 17-102,
- Validation tests carried out in the Laboratory,
- Validation of on-site tests in real protection situations.

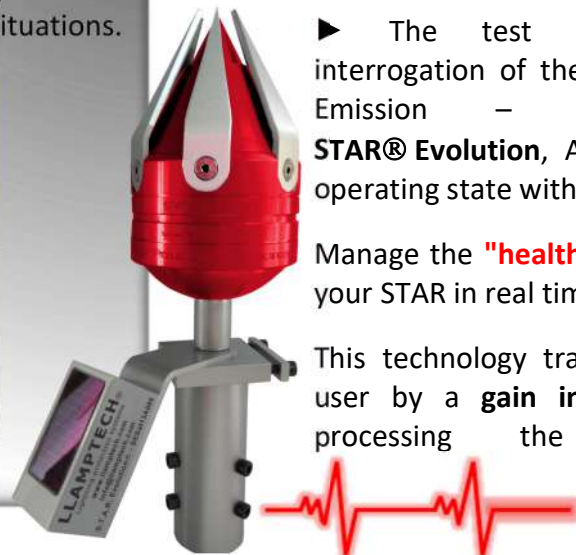


## ESEAT – TESTING REMOTE

► The test system allows interrogation of the Early streamer Emission – Air terminal **STAR® Evolution**, And to know its operating state without moving.

Manage the **"health"** and history of your STAR in real time.

This technology translates, for the user by a **gain in security** after processing the information.



## ESE – Air terminal STAR® and recycling combine to infinity ...

Protecting and safeguarding our environment is one of Llamptech's main objectives.



The recycling of the STAR® lightning conductor saves natural resources and 95% of the energy required to produce the primary metal.

Protecting and safeguarding our environment is an essential objective of a recycling approach.

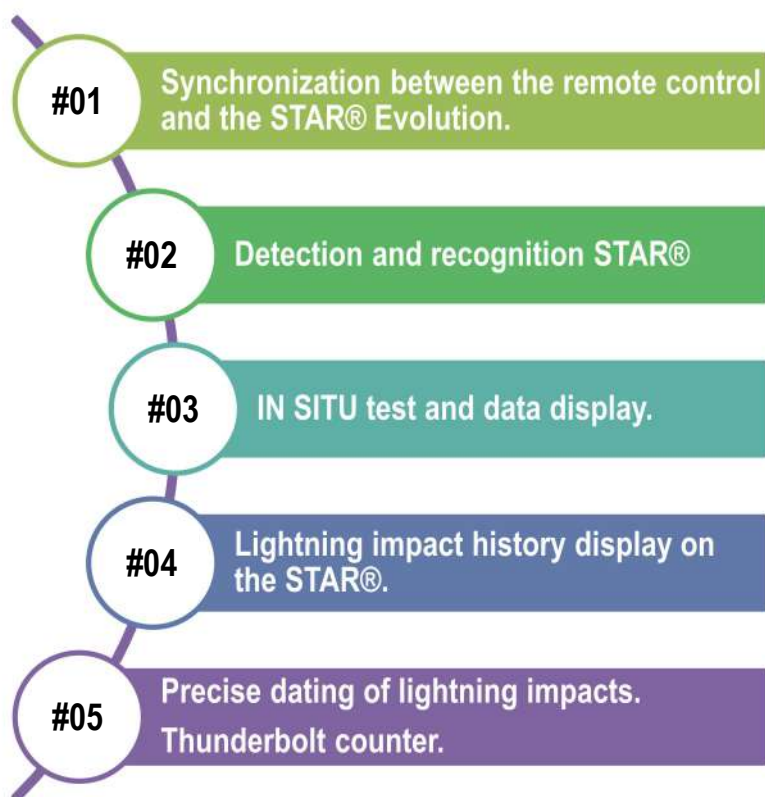
► **That is why the development of our STAR® lightning conductor is partly in MPM.**

## Operation

**STAR® Evolution** Testing remote - Test System.

► The test system is used to interrogate the STAR® Evolution Early Streamer Emission – Air Terminal (ESEAT), and to know its operating status without moving.

Communication process in 5 steps.



Included in the STAR® Evolution pack







## Protection radius for (ESE) Air terminal STAR®

### STAR® 210 EFFICIENCY **+10μs** PROTECTION RADIUS

H meters	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
2	8	13	15	17
3	12	19	20	24
4	17	26	34	38
5	21	32	41	49
10	23	37	48	53
20	24	41	52	55

Protective distances in meters

### STAR® 325 ADVANCED TO PRIMING **+25μs** PROTECTION RADIUS

H meters	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
2	17	23	26	28
3	25	34	35	39
4	34	46	49	54
5	42	57	63	67
10	44	61	70	74
20	45	65	72	77

Protective distances in meters

### STAR® 645 EFFICIENCY **+45μs** PROTECTION RADIUS

H meters	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
2	25	32	34	36
3	38	48	51	55
4	51	65	70	73
5	62	80	83	89
10	64	83	91	94
20	65	86	97	99

Protective distances in meters

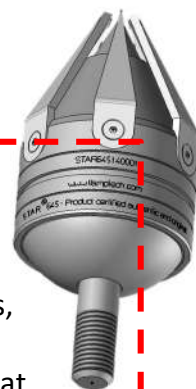
### STAR® 660 EFFICIENCY **+60μs** PROTECTION RADIUS

H meters	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4
2	32	40	42	44
3	48	59	61	65
4	64	78	82	87
5	79	97	99	107
10	80	99	101	109
20	82	101	103	111

Protective distances in meters

### Strengths :

- ▶ 4 operational powers.  
10, 25, 45 and 60 microseconds,
- ▶ Natural dosage of advances at priming, allowing optimum precision,
- ▶ CDT reinforced, with acceleration of the ascending sensor,
- ▶ Optimal reaction with a safety margin in stormy weather,
- ▶ Autonomy, no power source,
- ▶ Star Evolution Air terminal (ESEAT) testing remote
- ▶ Custom reinforced box.



Complies with the requirements of standard NF C 17-102

