



# TAOGLAS®



## Datasheet

### Shockwave ISM 433MHz Permanent Mount

**Part No:**  
TLS.30.1F11

**Description:**

Shockwave 433MHz  
Permanent Mount External Antenna  
N Type(F) connector

**Features:**

ISM 433MHz with 55% efficiency  
Mechanically robust for indoor/outdoor applications  
Height: 79.45mm(3.13") ; Diameter : 42mm(1.65")  
IP67 Waterproof  
N type(F) connector  
RoHS & REACH Compliant

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## 1. Introduction



The Shockwave TLS.30.1F11 is a mechanically robust, waterproof, external antenna operating at the 433MHz band with an N type female connector. It has been designed to be used on a ground plane.

Typical Applications Include:

- Mesh networks
- Indoor/outdoor asset monitoring
- Security systems
- Remote control systems
- Heavy-duty equipment/vehicle communication in harsh environments

The antenna has 51% efficiency and -1.1 dBi peak gain at ISM 433MHz on a 30x30 cm ground plane. Stable radiation patterns over low angles provides consistent gain in the horizontal plane, meaning that it is especially suitable for mesh networks or hot spots.

A unique indent tab on the base of the antenna allows a wrench to be used to solidly lock the antenna on top of its mounting location while tightening up the nut beneath the metal panel. Waterproof O-rings around the bottom base prevent water from leaking under the antenna.

The TLS.30 antenna is IP67 waterproof resistant against high pressure water jets in commercial cleaning environments, which makes the antenna ideal for ISM 433MHz applications in harsh outdoor environments.

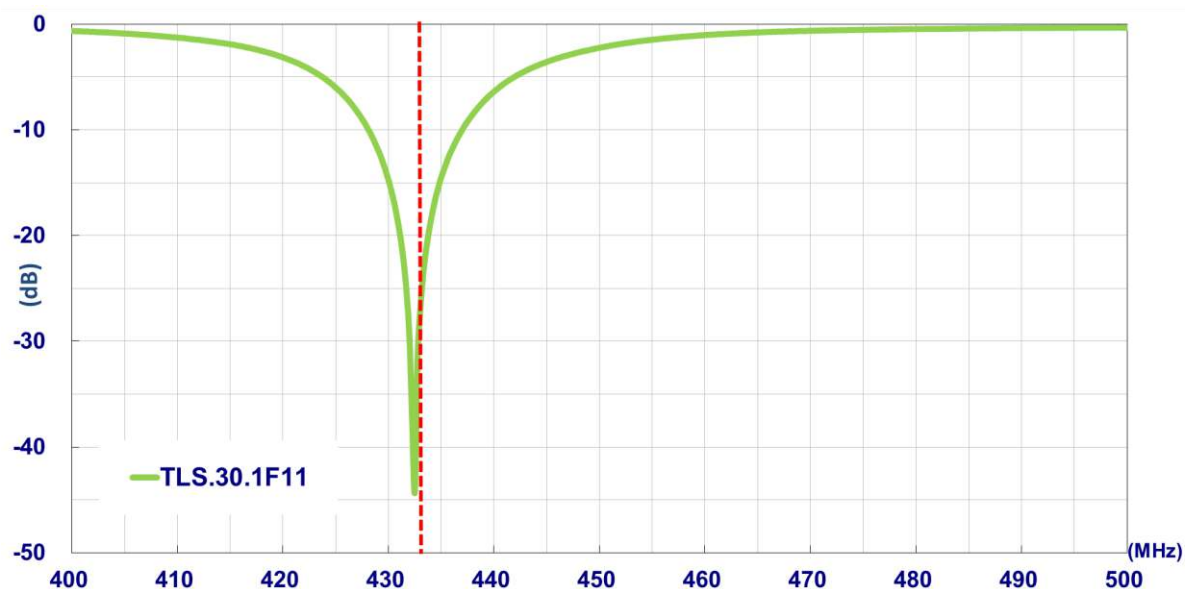
Cable lengths and connector types are customizable. Contact your regional Taoglas customer support team for further information.

## 2. Specifications

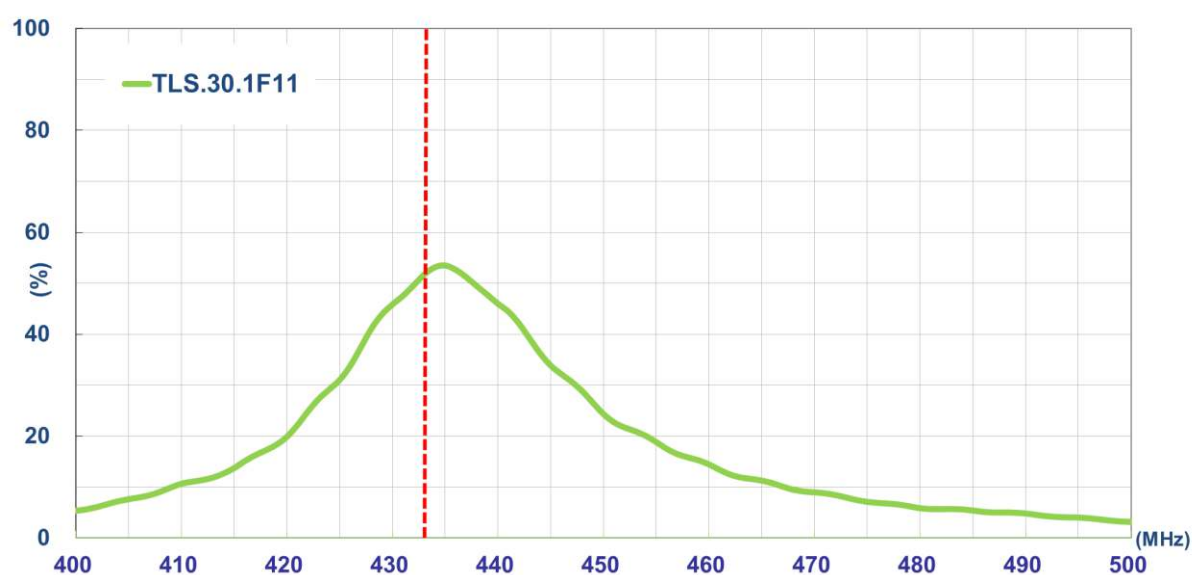
ELECTRICAL	
Application Band	ISM433
Operation Frequency	433 MHz
	On 30 x 30 cm ground plane
Efficiency (%)	51.67%
Peak Gain (dBi)	-1.19
Average Gain (dBi)	-2.87
Return Loss (dB)	< -15
Impedance	50 $\Omega$
Polarization	Vertical
Radiation Property	Omni-Directional
Max Input Power	100 W
MECHANICAL	
Dimension (mm)	Height: 79.45mm (3.13") ; Diameter : 42mm(1.65")
Connector	N type (F)
Material	Housing: UV Resistant ABS, Base: Nickel Plated Zinc Alloy
Weight (g)	169
Rec. Torque for Mounting	4.018 N.m
Max. Torque for Mounting	9.8 N.m
ENVIRONMENTAL	
Waterproof Rating	IP67
Operation Temperature	-40°C to 85°C
Humidity	Non-condensing 65°C 95% RH

## 3. Antenna Characteristics

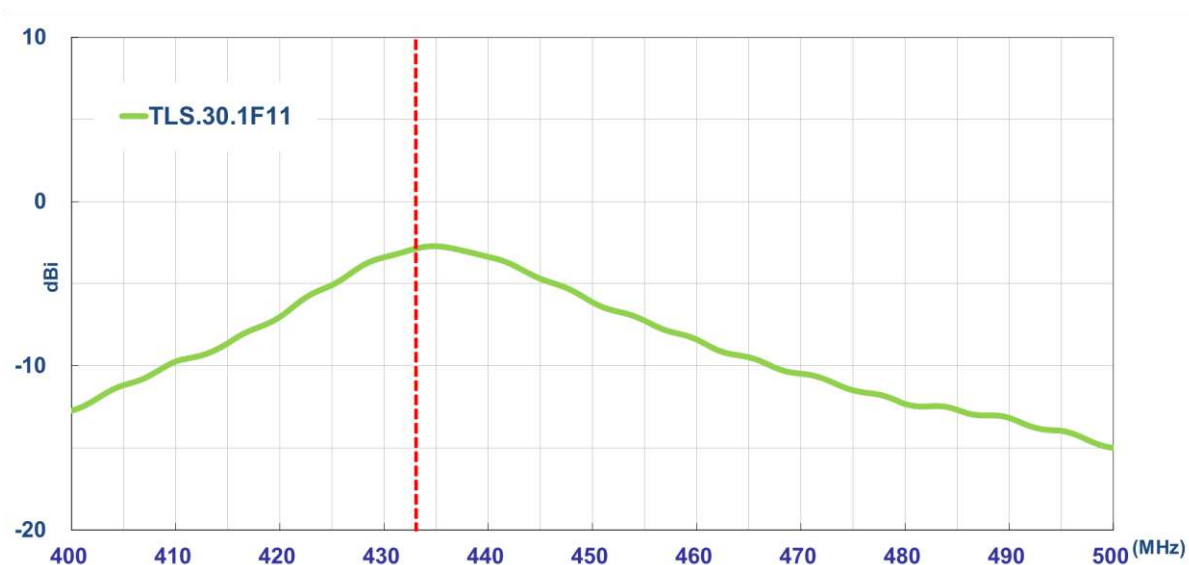
### 3.1 Return Loss



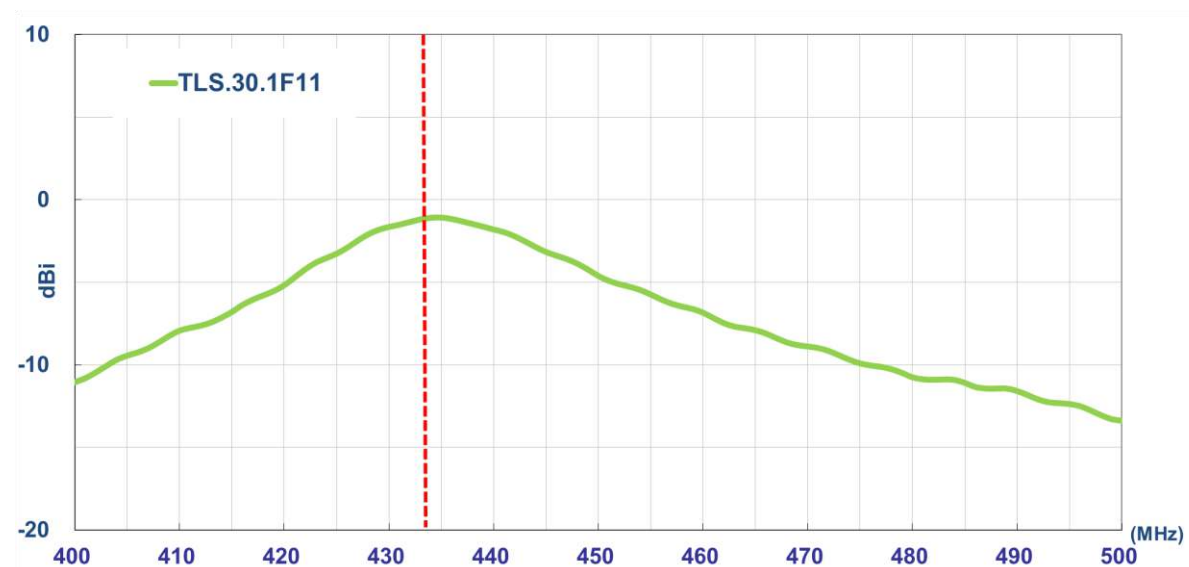
### 3.2 Efficiency



### 3.3 Average Gain

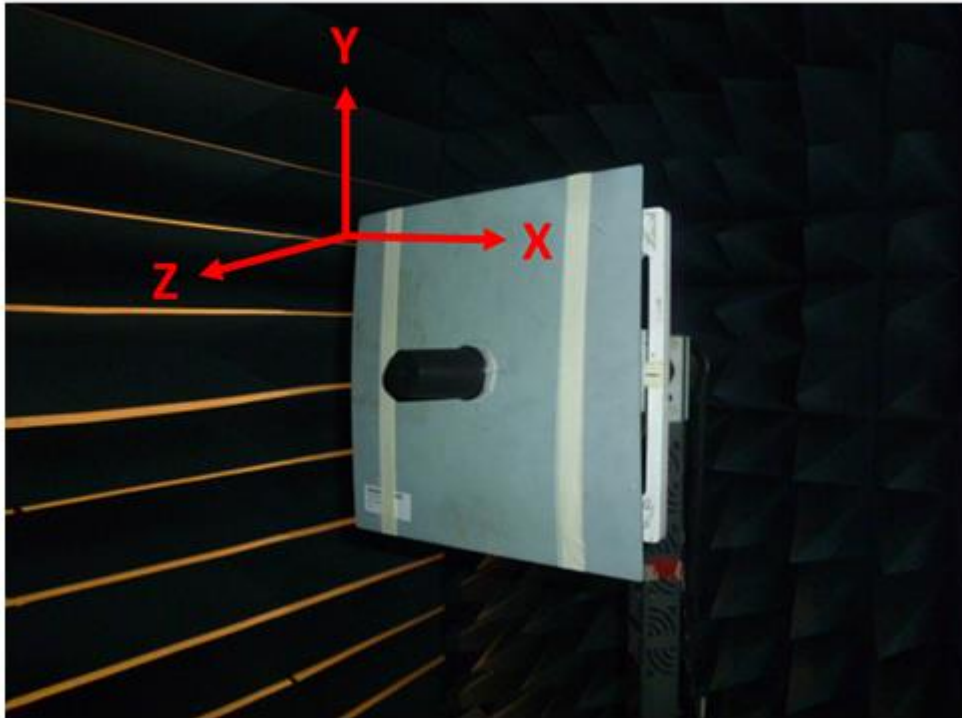


### 3.4 Peak Gain



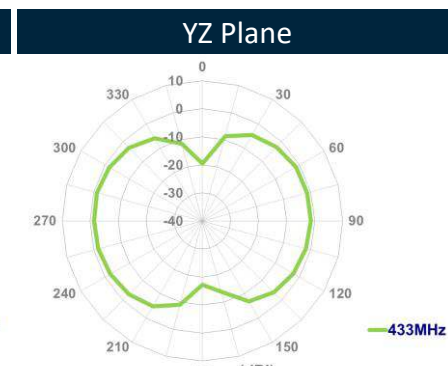
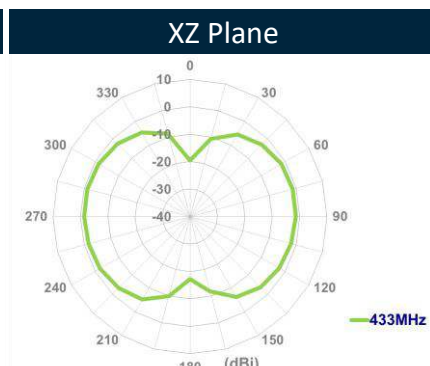
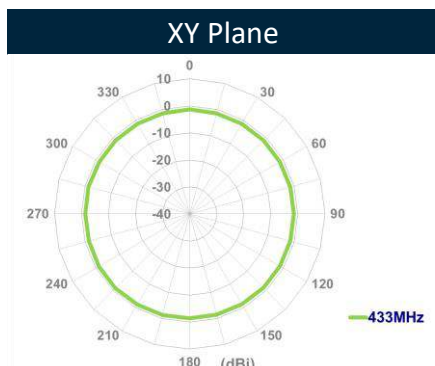
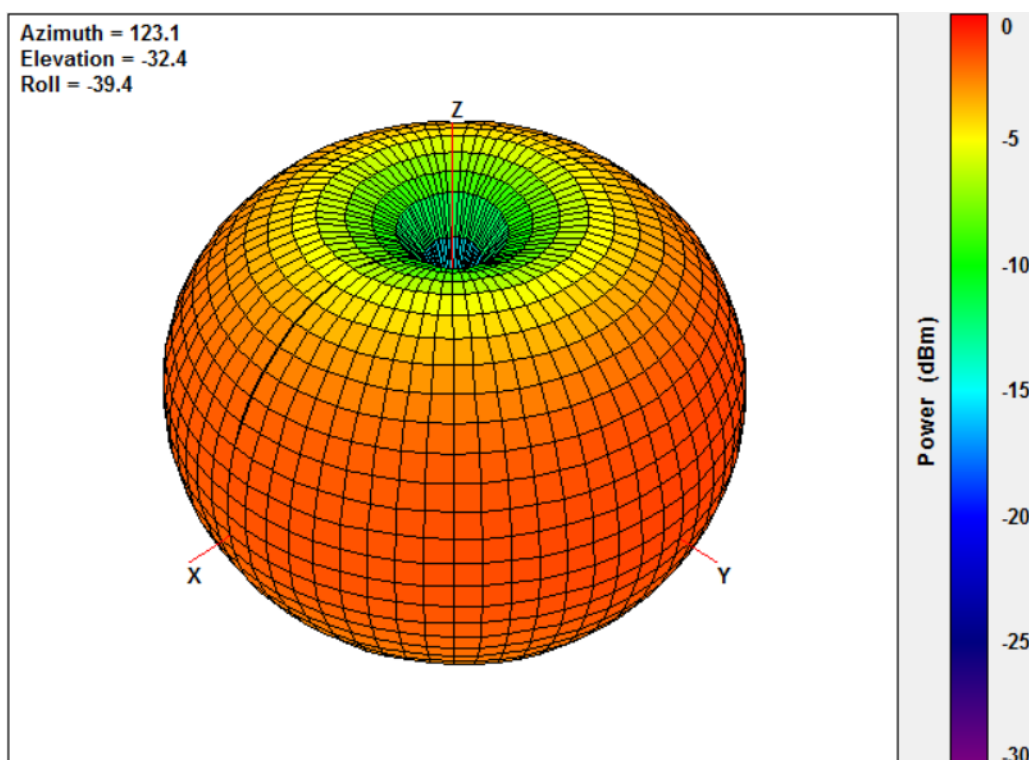
## 4. Radiation Patterns

### 4.1 Test Setup



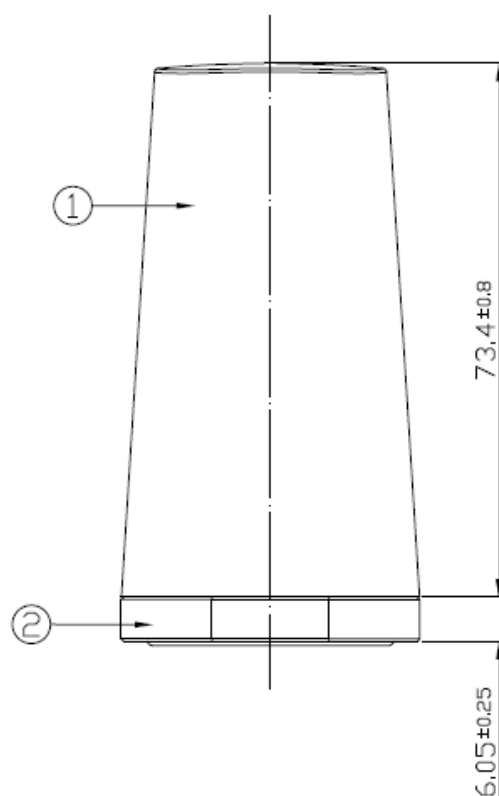
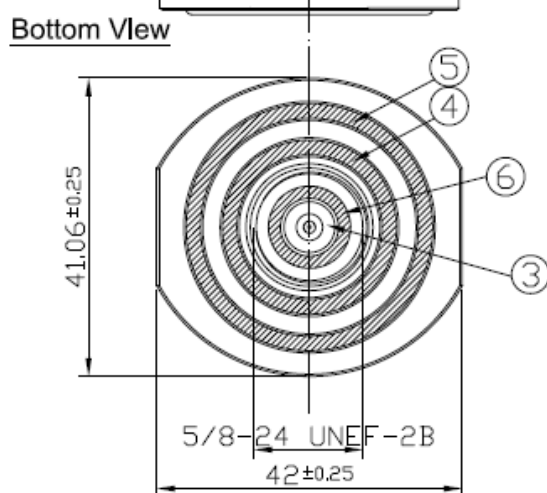
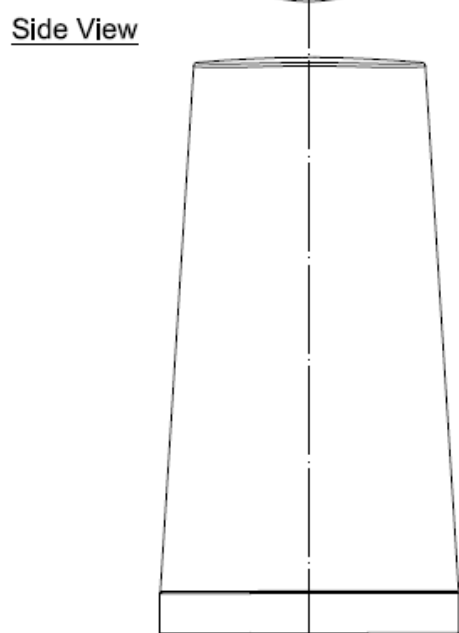
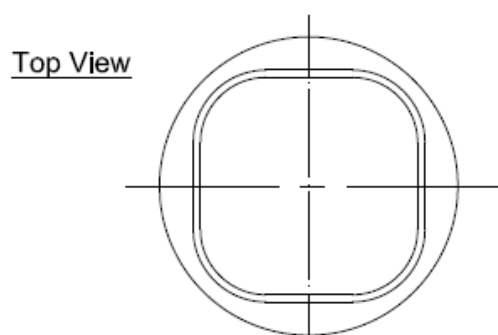
## 4.2 3D and 2D radiation Patterns

433MHz



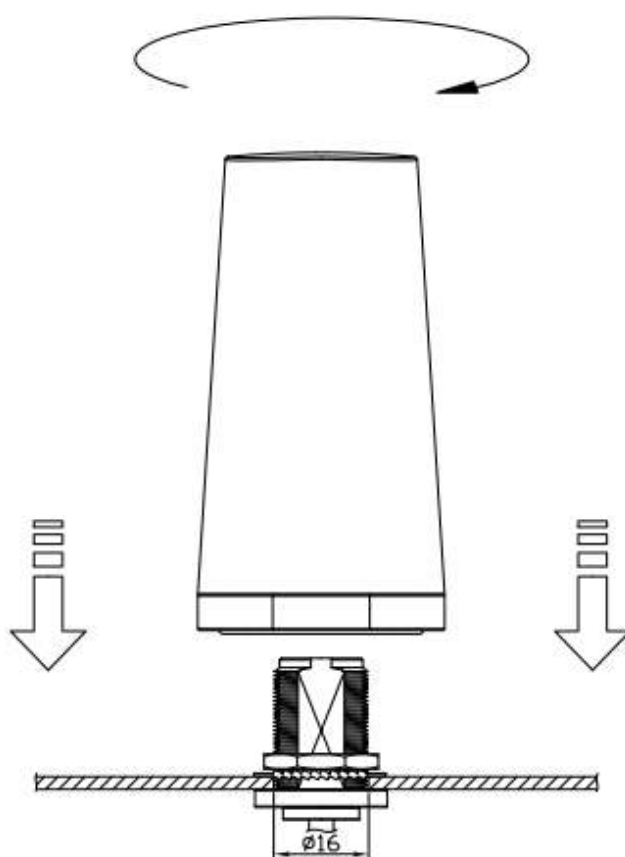


## 5. Mechanical Drawing (Units: mm)



	Name	Material	Finish
1	Antenna Top	ABS	Black
2	Antenna Bottom	Zinc Alloy	NI Plated
3	N Type M	Brass	NI Plated
4	O Ring 1	NBR	Black
5	O Ring 2	NBR	Black
6	O Ring 3	NBR	Red

## 6. Installation Guidelines



Recommended torque for mounting is 4.018 N.m or 41 kgf.cm

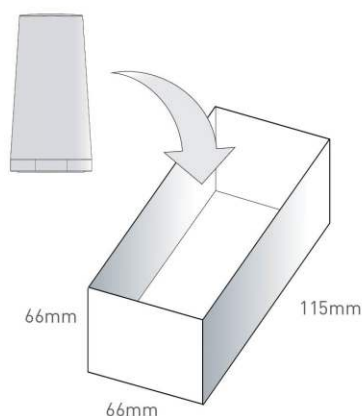
Maximum torque for mounting is 9.8 N.m or 100 kgf.cm

## 7. Packaging

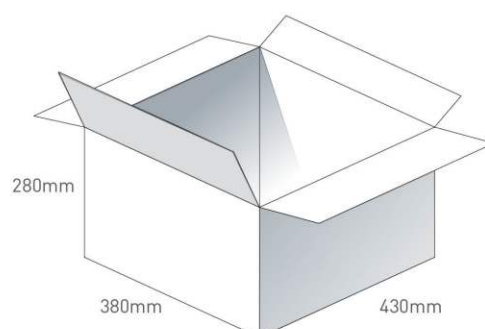
### TLS.30.1F11

#### Packaging Specifications

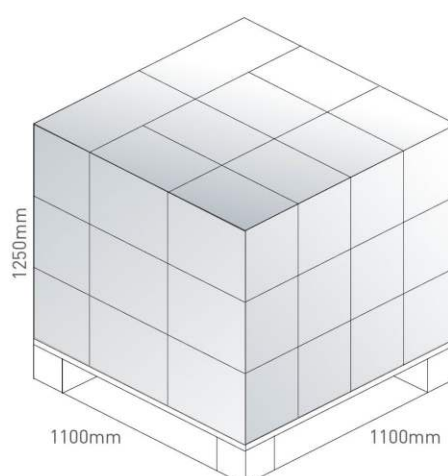
1 No. TLS.30.1F11 per small box  
Box Dimensions - 66 x 66 x 115mm  
Weight - 170g



1 Outer Carton  
Carton Dimensions - 430 x 380 x 280mm  
60 pcs TLS.30.1F11 per carton  
Weight - 10.59Kg



Pallet Dimensions 1100\*1100\*1250mm  
30 Cartons per Pallet  
10 Cartons per layer  
3 Layers



## Changelog for the datasheet

**SPE-15-8-068 – TLS.30.1F11**

### Revision: B (Current Version)

Date:	2022-09-08
Changes:	Updated specifications
Changes Made by:	Cesar Sousa

### Previous Revisions

#### Revision: A (Original First Release)

Date:	2021-09-28
Notes:	
Author:	Jack Conroy



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