

# SPECIFICATION

- Part No. : FW.86.B.SMA.M
  
- Description : Meteor  
 ISM Band 868MHz Flexible Whip  
 Monopole Antenna SMA(M) Straight
  
- Features : External 868MHz Monopole Antenna  
 Designed for Outdoor Use  
 Over 70% high efficiency\*  
 2.82 dBi high peak gain\*  
 Robust Inner Steel Core  
 Antenna Length: 240mm  
 SMA Type(M) Straight Connector  
 IP65 dust and water-resistant  
 \*Tested on 30cm\*30cm Ground Plane  
**RoHS Compliant ✓**



## 1. Introduction

The FW.86 is a flexible 868MHz whip antenna with a SMA type (M) connector for outdoor use. It features excellent efficiency (>70%) and high peak gain (>2.82 dBi) at 868MHz on a 30\*30cm ground plane.

The antenna was developed for low power radio networks (LORA / LPWAN), monitoring systems, and smart metering.

The FW.86 has an excellent omnidirectional radiation pattern, ensuring wide coverage. The antenna's high efficiency means that it allows your radio to consume less power than with a lower efficiency antenna when transferring data. It also means a better signal strength and better sensitivity in areas of low signal levels. The antenna performs at its best while attached to a ground plane with dimensions of at least 30x30 cm. For an environment where there is no ground-plane available we recommend to use the terminal antenna the TI.18 or the outdoors fiberglass omni antenna the OMB.868.

The FW.86 whip is made of a flexible inner steel core covered by PE so it is extremely resistant to abrasion and maintains its original shape and RF performance even after shock. This rugged design and IP67 rating on the housing ensure high reliability.

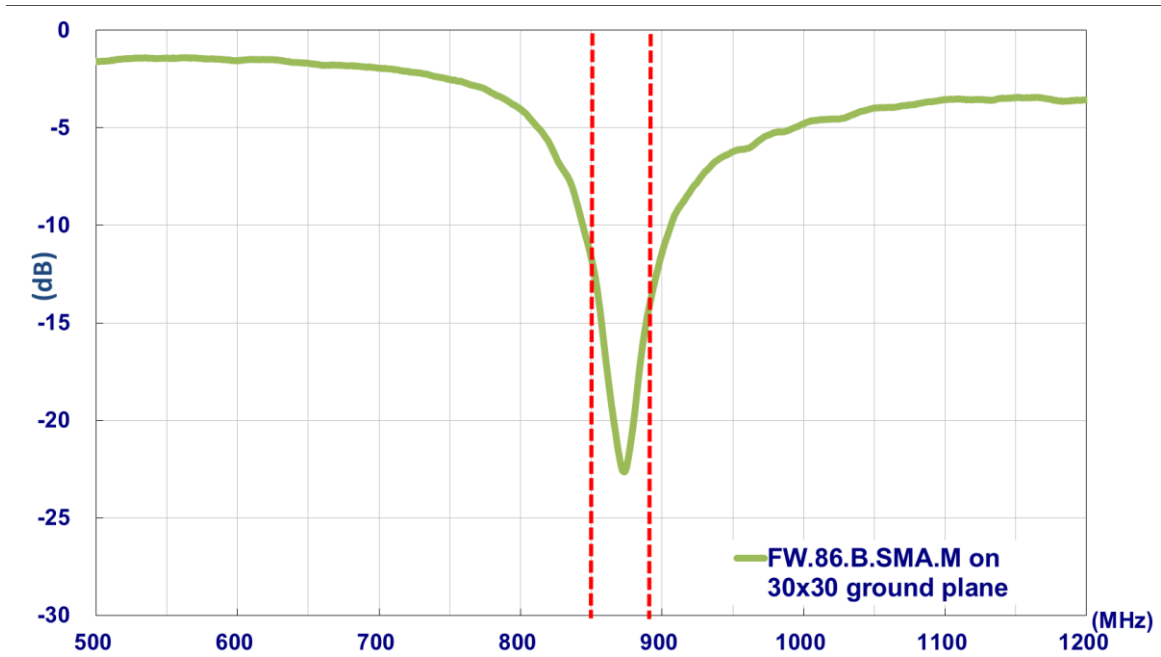
This antenna comes with SMA(M) connector as standard. Other custom variants can be provided subject to NRE and MOQ. Contact your regional Taoglas office for details.

## 2. Specification

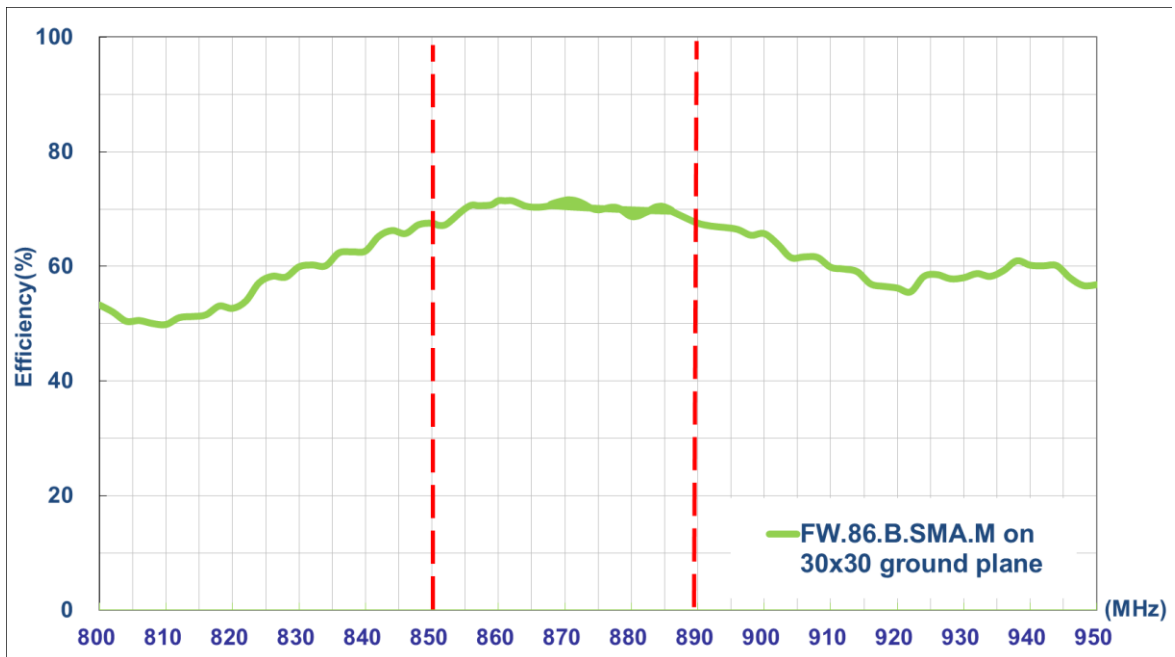
ISM Band 868 MHz			
Center Frequency	850 MHz	868 MHz	890MHz
Design Environment	On 30x30cm ground		
Efficiency	67.52%	70.60%	67.53%
Peak Gain	1.81dBi	2.82dBi	3.57dBi
Return loss	< -10 dB		
VSWR	≤ 2:1		
Impedance	50 Ω		
Polarization	Linear		
Radiation Pattern	Omnidirectional		
Input Power	2 W		
MECHANICAL			
Dimensions	Length 240 ± 6mm		
Base Diameter	16 ± 0.6mm		
Whip Diameter	6.2 ± 0.6mm		
Casing	ABS		
Connector	SMA Type(M) Straight		
Weight	39 g		
Dust and Water Resistance	IP65		
ENVIRONMENTAL			
Temperature Range	-40°C to 85°C		
Humidity	Non-condensing 65°C 95% RH		

### 3. Antenna Characteristics

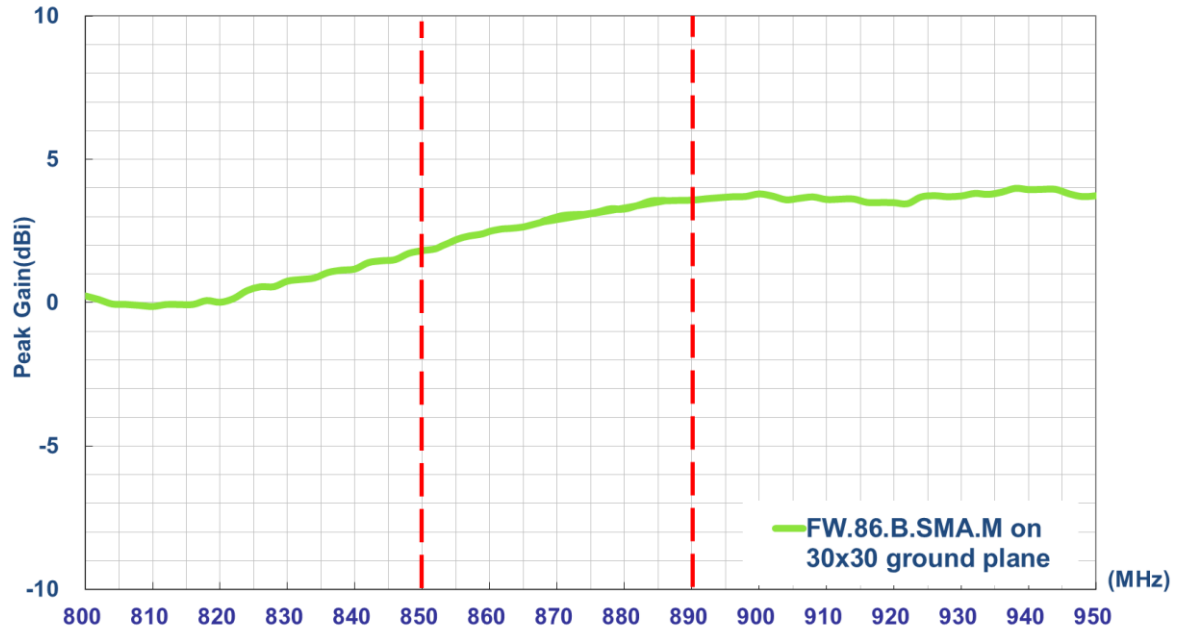
#### 3.1. Return Loss



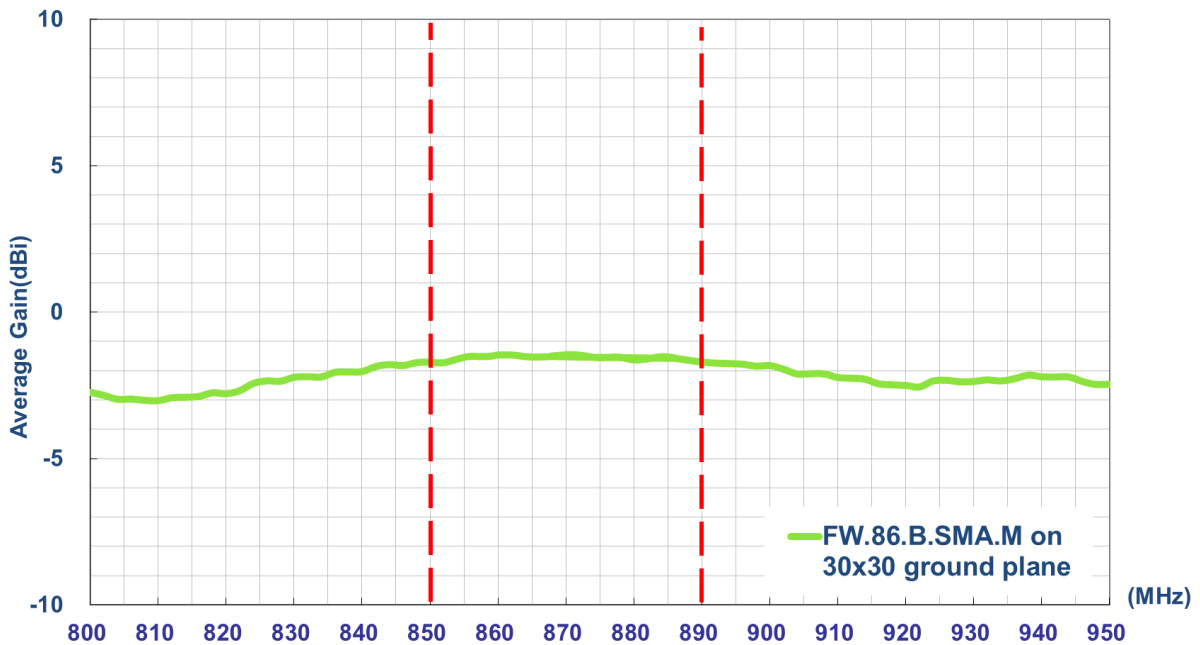
#### 3.2. Antenna Efficiency



### 3.3. Peak Gain



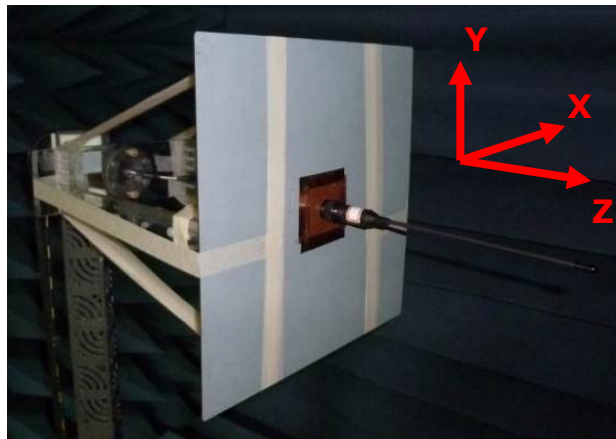
### 3.4. Average Gain



## 4. Antenna Radiation Pattern

### 4.1. Antenna Setup

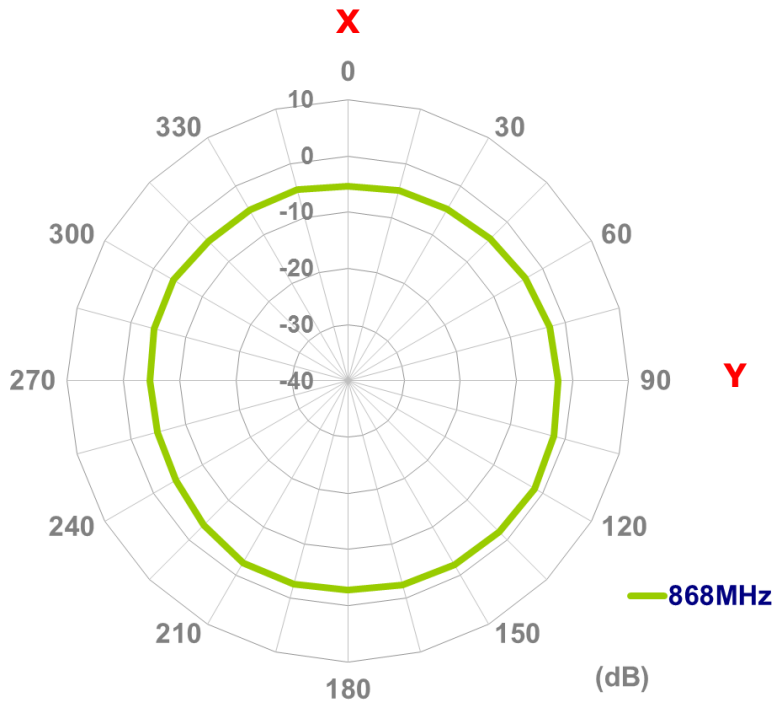
On 30\*30cm ground plane



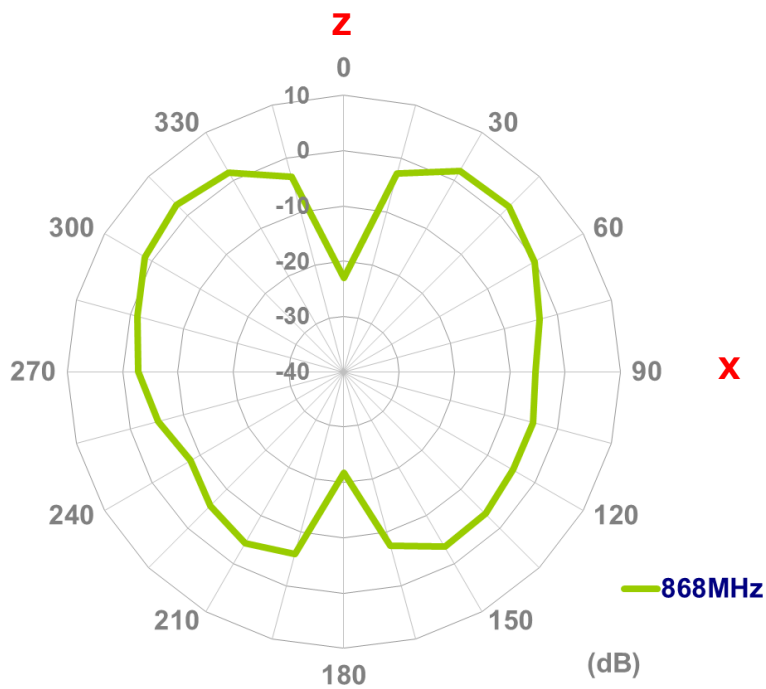
## 4.2. 2-D Radiation Pattern

On 30\*30cm Ground Plane

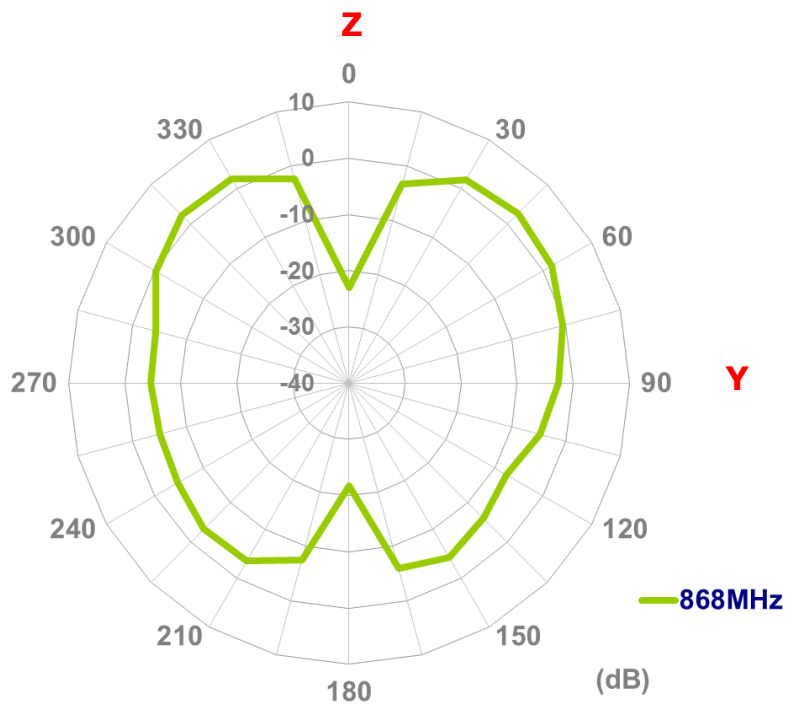
XY Plane



XZ Plane



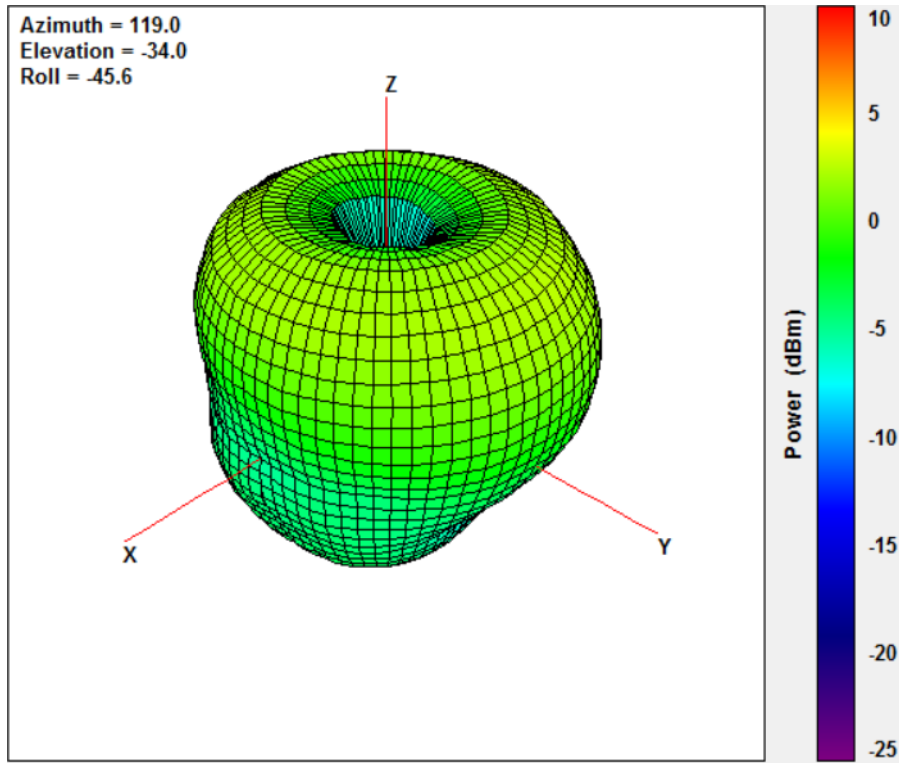
YZ Plane





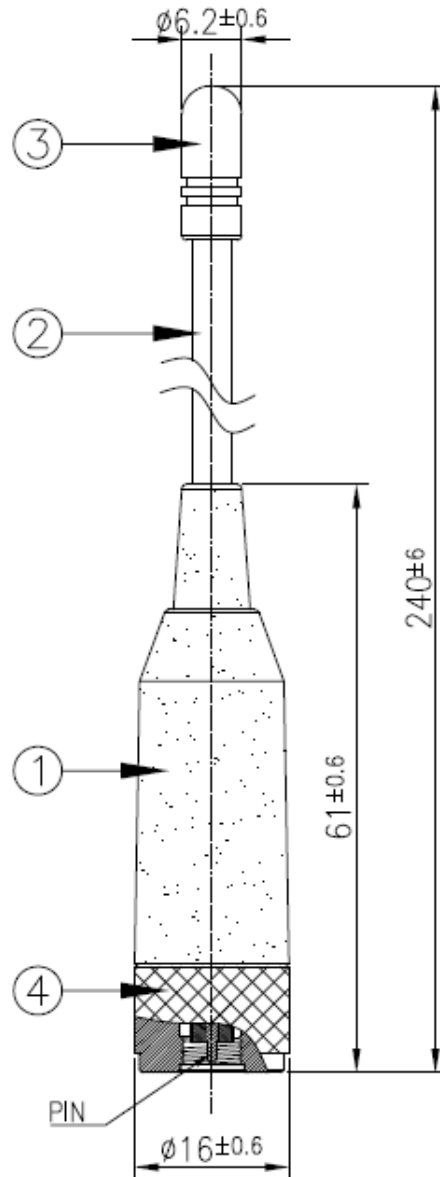
### 4.3. 3-D Radiation Pattern

On 30\*30cm Ground Plane



@ 868MHz

## 5. Antenna Drawing



Unit: mm

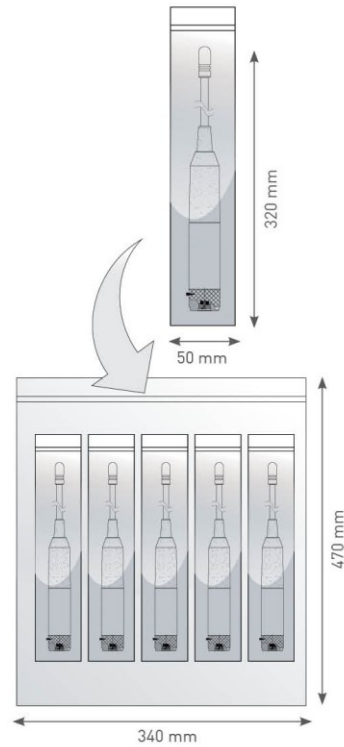
	Name	Material	Finish	QTY
1	Housing	ABS	Black	1
2	Flexible Whip	Steel+PE Jacket	Black	1
3	Cap	ABS	Black	1
4	SMA(M)ST	Brass	Black	1

## 6. Packaging

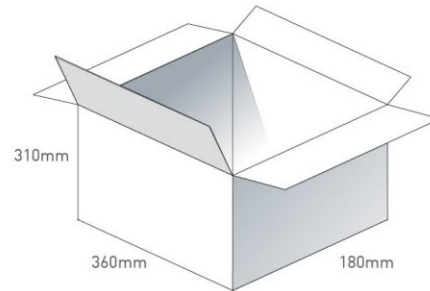
### FW.86.B.SMA.M Packaging Specifications

1 pcs FW.86.B.SMA.M per PE Bag  
PE Bag Dimensions - 350 x 50mm  
Weight - 39g

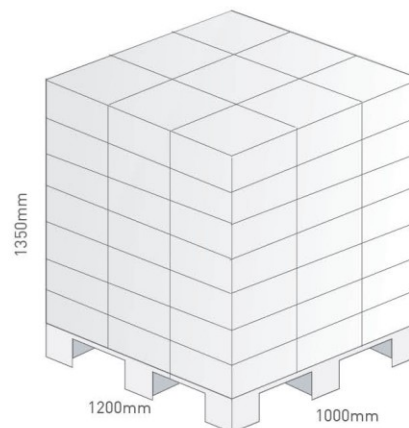
50 PE Bags per Large PE Bag  
50 pcs FW.86.B.SMA.M per Large PE Bag  
Large Polybag Dimensions - 470 x 340mm  
Weight - 2kg



5 Large PE Bags per carton  
250 pcs FW.86.B.SMA.M per carton  
Carton Dimensions - 360 x 310 x 180mm  
Weight - 10.5kg



Pallet Dimensions 1200 x 1000 x 1350mm  
63 Cartons per Pallet  
9 Cartons per layer  
7 Layers





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