TAOGLAS



Datasheet

Meteor

Part No:
FW.45.B.SMA.M

Description:

450-470MHz Flexible Whip Monopole Antenna SMA(M) Straight

Features:

Monopole Antenna
Designed for Outdoor Use
Over 70% high efficiency*
Over 1 dBi peak gain*
Robust Inner Steel Core
Antenna Length: 290mm
SMA Type(M) Straight Connector
IP65 dust and water-resistant
*Tested on 30cm*30cm Ground Plane
RoHS Compliant

1. Introduction 3
2. Specifications 4
3. Antenna Characteristics 5
4. Radiation Patterns 7
5. Mechanical Drawing 9
6. Packaging 10

Changelog 11

Taoglas makes no warranties based on the accuracy or completeness of the contents of this document and reserves the right to make changes to specifications and product descriptions at any time without notice. Taoglas reserves all rights to this document and the information contained herein. Reproduction, use or disclosure to third parties without express permission is strictly prohibited.

1. Introduction



The FW.45 is a flexible 450-470MHz whip antenna with a SMA type (M) connector for outdoor use. It features excellent efficiency (>70%) and peak gain (>1dBi) at 450-470MHz on a 30x30 cm ground plane. Common applications are smart metering, gateways, wireless monitoring, and mesh networks.

The FW.45 has an excellent omnidirectional radiation pattern, ensuring wide coverage. The antennas 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 fiberglass omni OMB.450 antenna.

The FW.45 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 IP65 rating on the housing ensure high reliability.

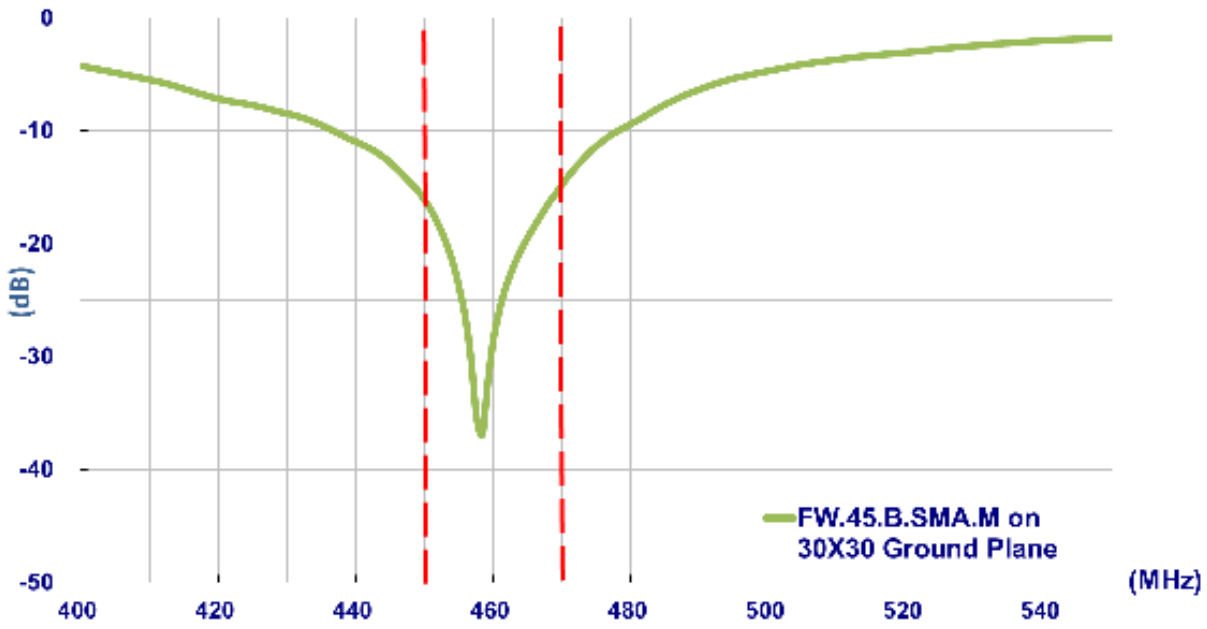
This antenna comes with SMA(M) connector as standard. Other custom variants can be provided subject to NRE and MOQ. Contact your regional Taoglas office for details.

2. Specifications

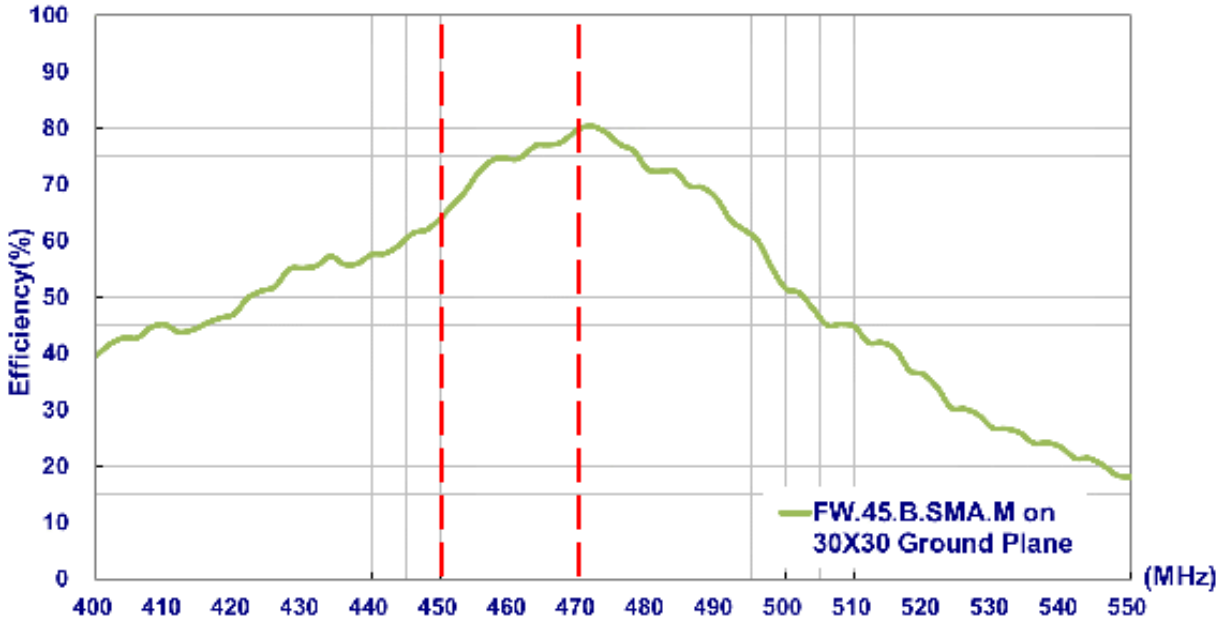
CDMA450 450-470MHz	
Center Frequency	450-470MHz
Design Environment	On 30x30cm ground
Efficiency	73.66%
Peak Gain	1.10dBi
Return loss	< -10dB
VSWR	≤ 2:1
Impedance	50Ω
Polarization	Linear
Radiation Pattern	Omni-Directional
Input Power	2 W
Total Power	10 W
Mechanical	
Dimensions	Height 290 ± 9 mm
Base Diameter	16 ± 0.6 mm
Whip Diameter	6.2 ± 0.6 mm
Casing	ABS
Connector	SMA Type(M) Straight
Weight	63.5 g
Dust and Water Resistance	IP65
Environmental	
Temperature Range	-40°C to 80°C
Humidity	Non-condensing 65°C 95% RH

3. Antenna Characteristics

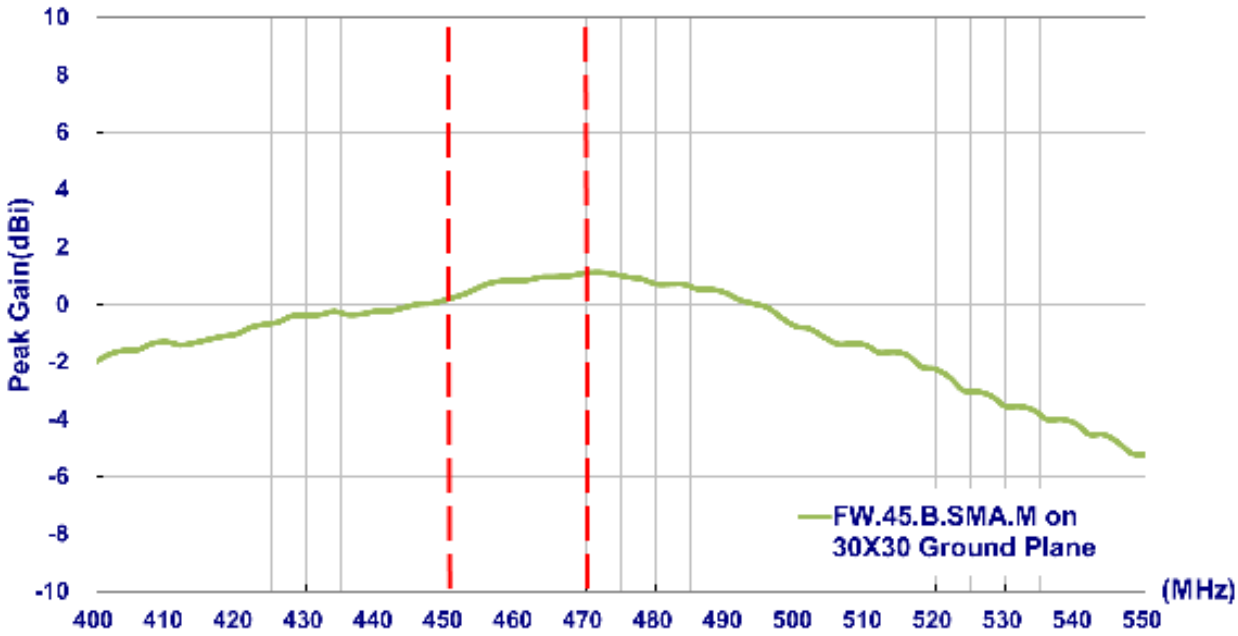
3.1 Return Loss



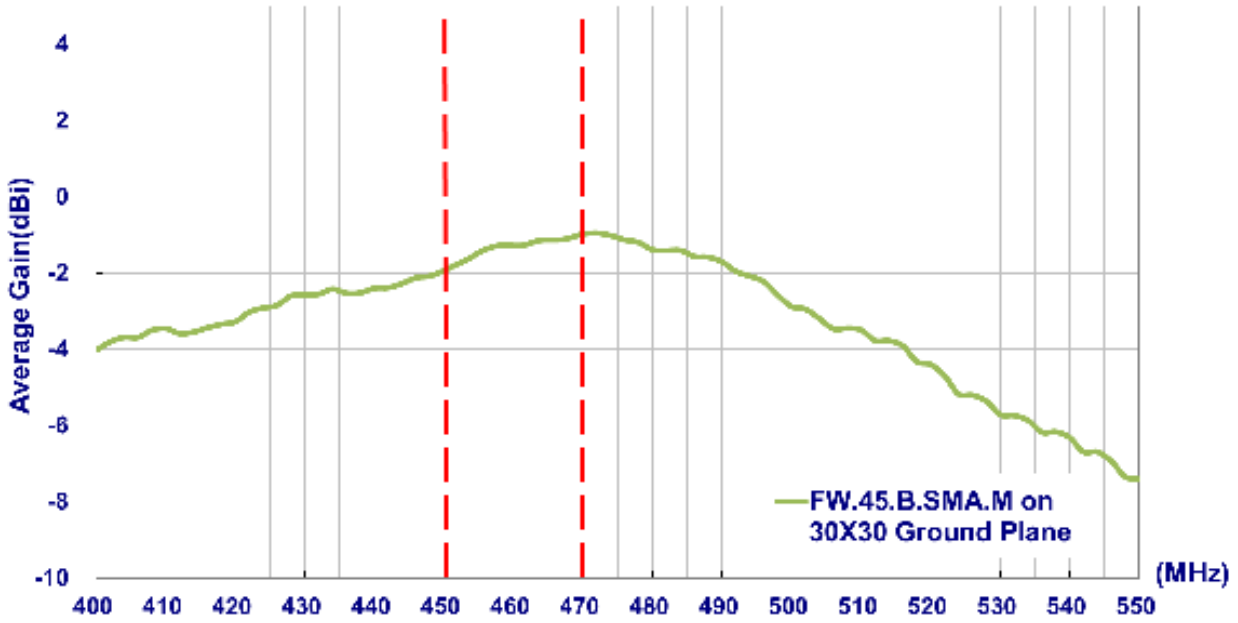
3.2 Efficiency



3.3 Peak Gain

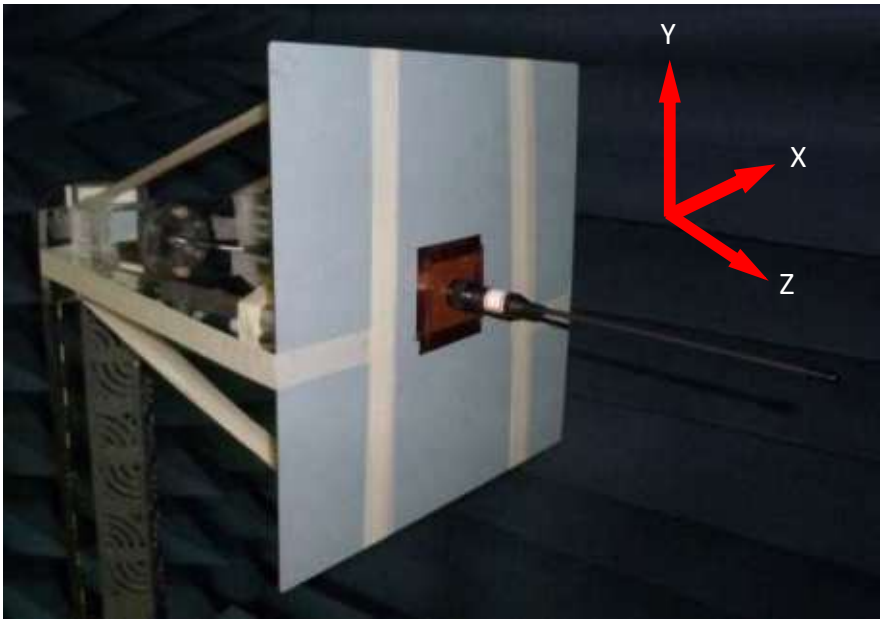


3.4 Average Gain



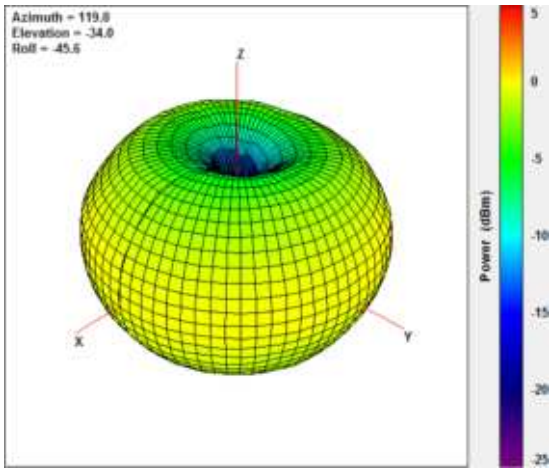
4. Radiation Patterns

4.1 Test Setup

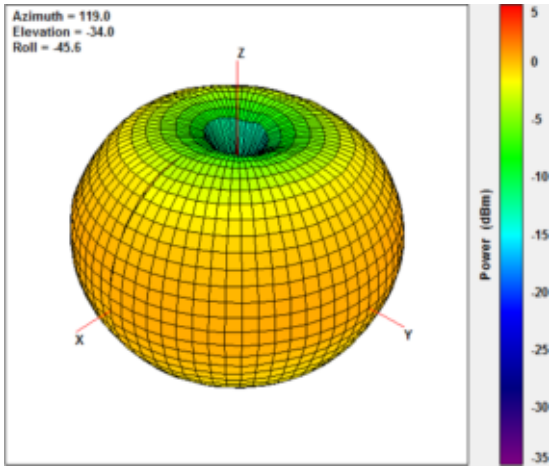


On 30x30 cm ground plane

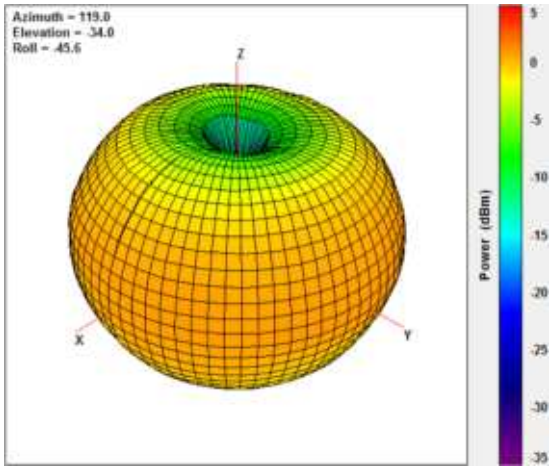
4.2 3D and 2D Radiation Patterns (On 30cm*30cm Ground Plane)



450MHz

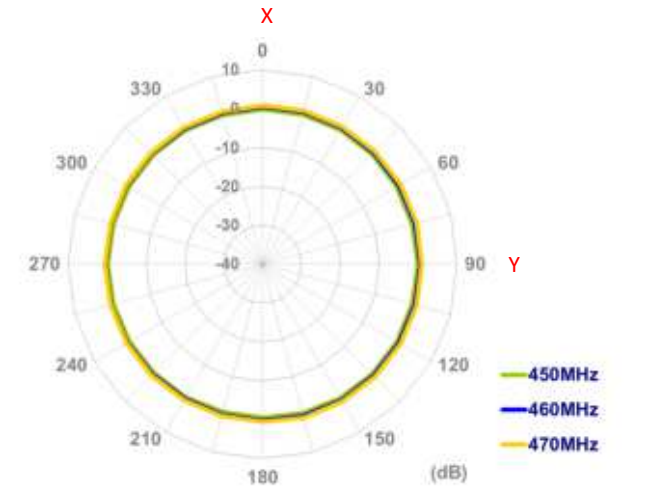


460MHz

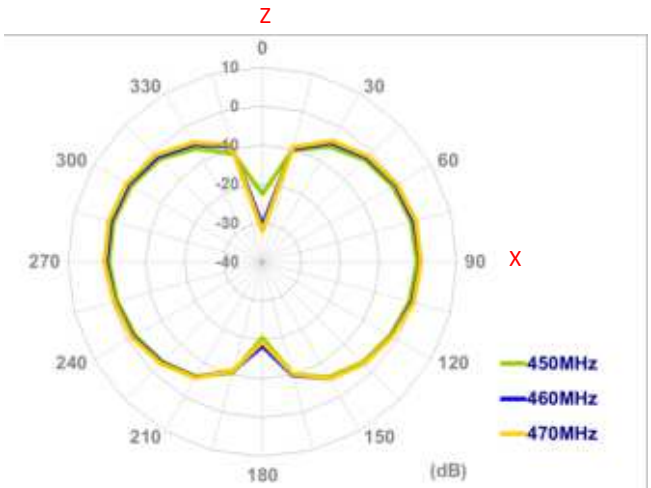


470MHz

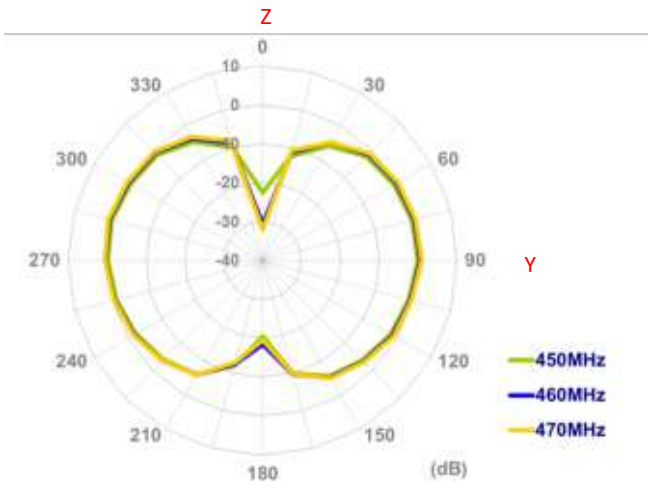
XY Plane



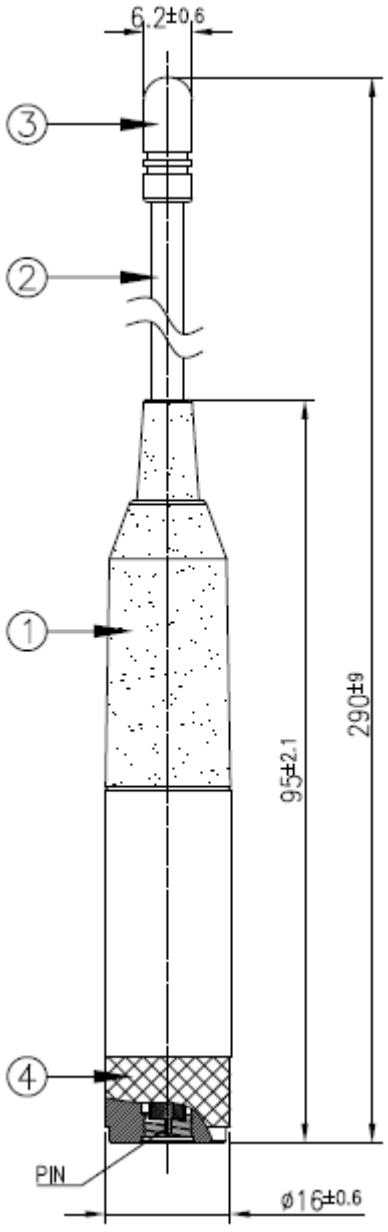
XZ Plane



YZ Plane



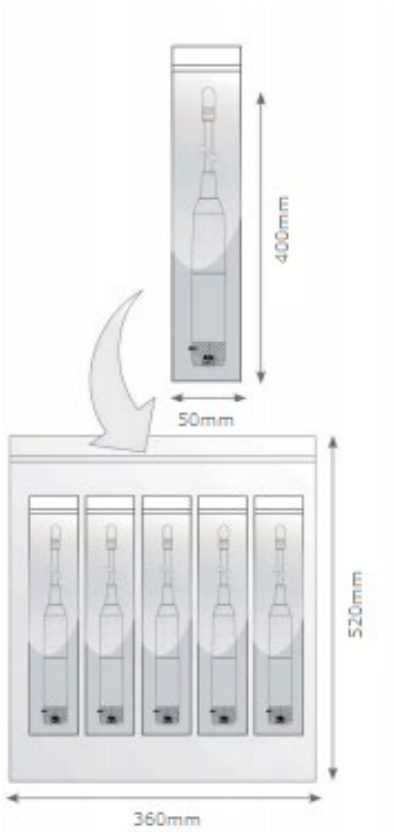
5. Mechanical Drawing (Units: mm)



	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

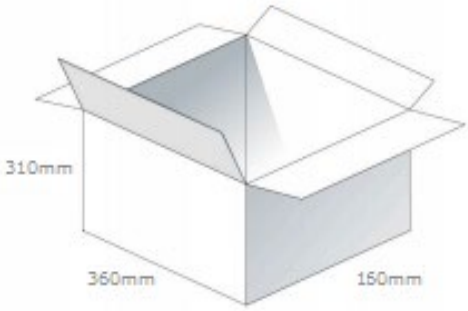
6. Packaging

1pcs FW.45.B.SMA.M per PE Bag
Bag Dimensions - 400*50mm
Weight - 63.5g

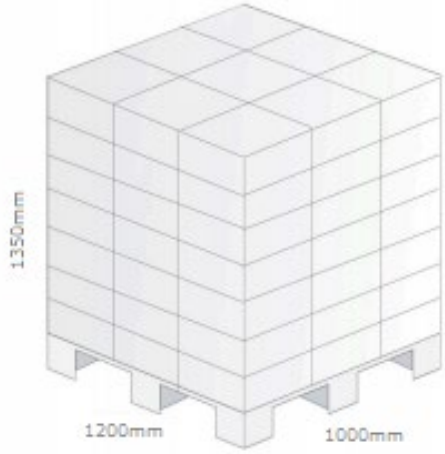


50 PE Bags per Large PE Bag
50 pcs FW.45.B.SMA.M per Large PE Bag
Large PE Bag Dimensions - 520*360mm
Weight - 3.4Kg

4 Large PE Bags per Carton
200 pcs FW.45.B.SMA.M per Carton
Carton Dimensions - 360*310*160mm
Weight - 13.6Kg



Pallet Dimensions:
1200*1000*1350mm
63 Cartons Per Pallet
9 Cartons Per Layer
7 Layers



Changelog for the datasheet

SPE-16-8-005 - FW.45.B.SMA.M

Revision: E (Current Version)	
Date:	2025-03-24
Changes:	Updated max operation temperature to 80°
Changes Made by:	Conor McGrath

Previous Revisions

Revision: D	
Date:	2019-08-16
Changes:	Updated to new format
Changes Made by:	Dan Cantwell

Revision: C	
Date:	2016-11-07
Changes:	
Changes Made by:	Andy Mahoney

Revision: B	
Date:	2016-26-10
Changes:	
Changes Made by:	Andy Mahoney

Revision: A (Original First Release)	
Date:	2015-12-01
Notes:	
Author:	Wayne Yang

TAOGLAS®

www.taoglas.com



© Taoglas