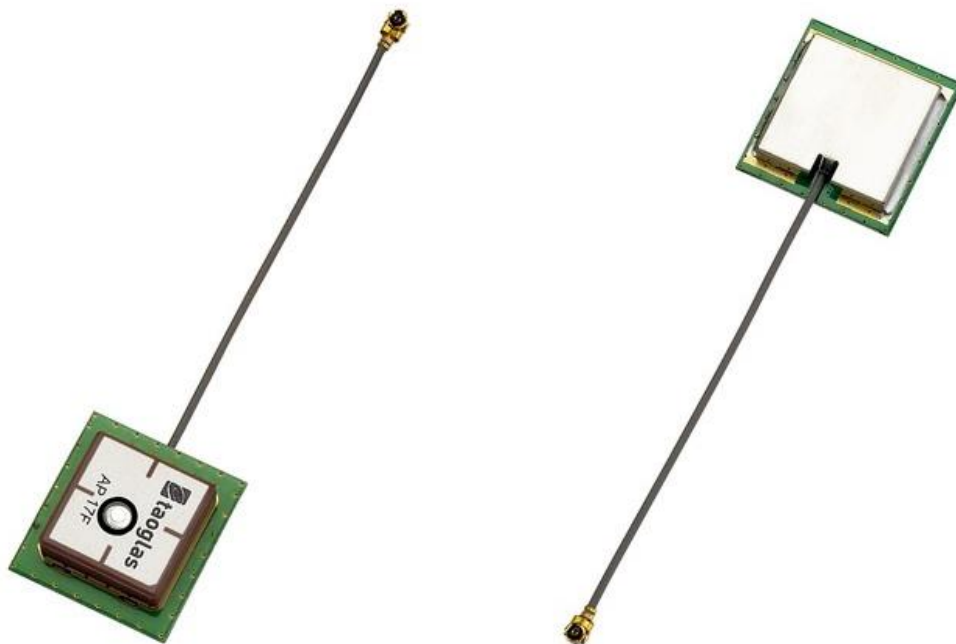


## SPECIFICATION

|              |   |                                                                                                                                     |
|--------------|---|-------------------------------------------------------------------------------------------------------------------------------------|
| Part No.     | : | <b>AP.17F.07.0064A</b>                                                                                                              |
| Product Name | : | 17mm Two Stage GPS/GALILEO Active<br>Patch Antenna Module                                                                           |
| Features     | : | 22.2mm*23.8mm*7.8mm<br>64mm 1.13 IPEX MHFI<br>Wide Voltage Input 1.8V to 5.5V<br>28dB LNA<br>Tested in Free space<br>RoHS Compliant |



## 1. Introduction

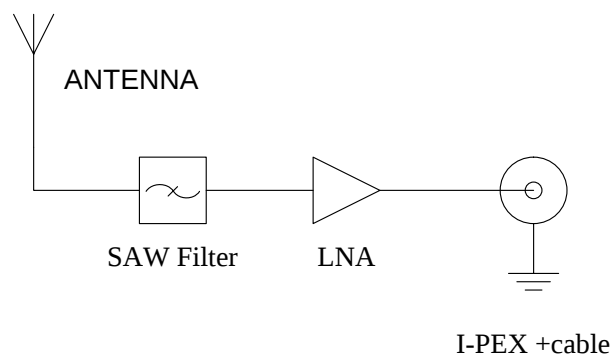
The AP.17F is a two stage 17mm active patch antenna that has been designed specifically for embedded (inside device) integration with GPS/GALILEO receiver modules.

The AP.17F combines a 17\*17\*4mm advanced low profile ceramic patch antenna with a one stage LNA and a front-end SAW filter with ultra thin coaxial cable. It comes with it's own integrated ground-plane. The front end SAW filter reduces the risks where there is a cellular transmitter nearby of interference from out of band frequencies which can cause LNA burn-out, saturation, or radiated spurious emissions.

The antenna can work on a wide input voltage from 1.8V to 5.5V with best in class power consumption figures.

If further tuning and optimization specific to a customer device is required Taoglas offers a custom tuned and optimized part service. Contact [sales@taoglas.com](mailto:sales@taoglas.com) for more information.

Cables and connectors can be customized according to request.

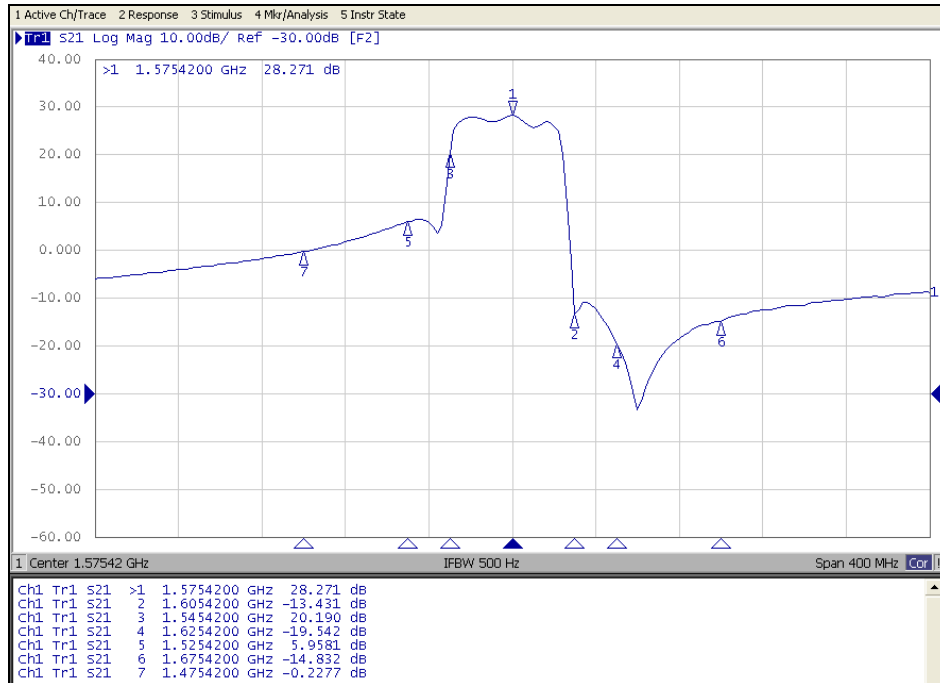


## 2. Specifications

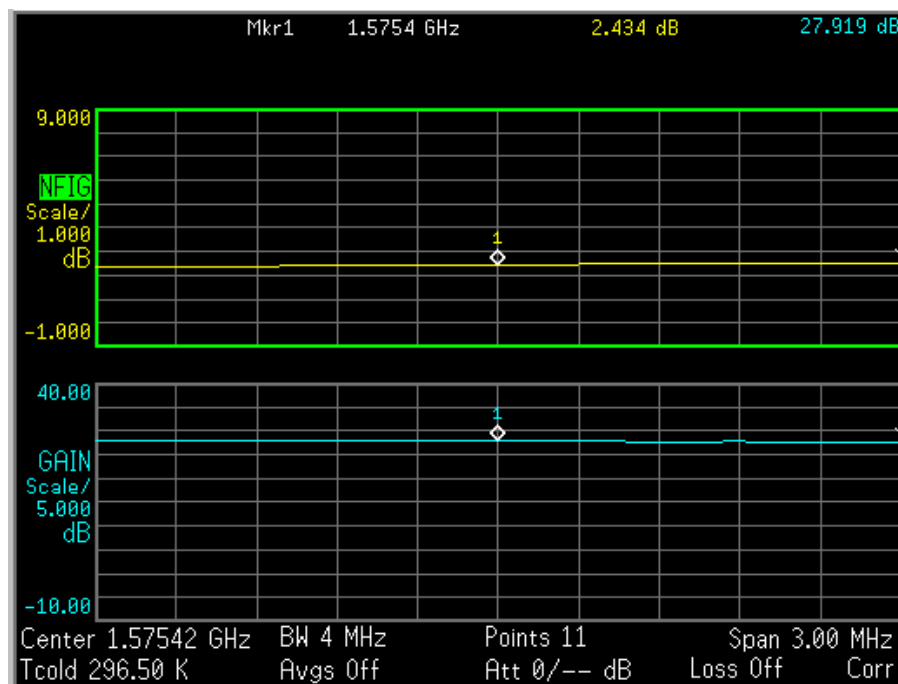
| ELECTRICAL                                   |                               |                               |                     |
|----------------------------------------------|-------------------------------|-------------------------------|---------------------|
| Input Voltage                                | Min:1.8V Typ.: 3.0V Max: 5.5V |                               |                     |
| Frequency Range                              | 1575.42MHz +/- 1.023 MHz      |                               |                     |
| Gain                                         | -1.5dBic Typ. @zenith         |                               |                     |
| Polarization                                 | RHCP                          |                               |                     |
| Axial ratio                                  | Max 3.0dB@zenith              |                               |                     |
| Frequency Range                              | 1575.42MHz +/- 1.023 MHz      |                               |                     |
| Gain (With LNA)                              | At 90°                        | At 5.5V                       | 22.5 ± 3dBic        |
|                                              |                               | At 3.0V                       | 29.5 ± 3dBic        |
|                                              |                               | At 1.8V                       | 32.5 ± 3dBic        |
| Output Impedance                             | 50Ω                           |                               |                     |
| LNA                                          |                               |                               |                     |
| Frequency                                    | 1575.42 ± 1.023MHz            |                               |                     |
| Outer Band Attenuation                       | F0=1575.42MHz                 |                               |                     |
|                                              | F0±30MHz                      | 6dB min.                      |                     |
|                                              | F0±50MHz                      | 20dB min.                     |                     |
|                                              | F0±100MHz                     | 25dB min.                     |                     |
| Output Impedance                             | 50Ω                           |                               |                     |
| Output VSWR                                  | 2.0 Max                       |                               |                     |
| Pout at 1dB Gain                             | Typ. -5dBm                    |                               |                     |
| Compression point                            | Min. -9dBm                    |                               |                     |
| LNA Gain, Power Consumption and Noise Figure |                               |                               |                     |
| Voltage                                      | LNA Gain<br>(Typ)             | Power Consumption<br>(mA) Typ | Noise Figure<br>Typ |
| Min. 1.8V                                    | 21dB                          | 3.3mA                         | 2.7dB               |
| Typ. 3.0V                                    | 28dB                          | 7.5mA                         | 2.5dB               |
| Max. 5.5V                                    | 31dB                          | 15.5mA                        | 2.7dB               |

| MECHANICAL            |                                     |
|-----------------------|-------------------------------------|
| RF Cable              | Ø1.13 RF Coaxial Cable L=64mm±1.5mm |
| RF Connector          | I-PEX(MHF) - U.FL Comp.             |
| Dimensions            | 22.2mm*23.8mm*7.8mm                 |
| ENVIRONMENTAL         |                                     |
| Operation Temperature | -40°C to + 85°C                     |
| Storage Temperature   | -40°C to + 85°C                     |
| Relative Humidity     | 40% to 95%                          |

## 2.1. LNA Gain and Out Band Rejection @3.0V

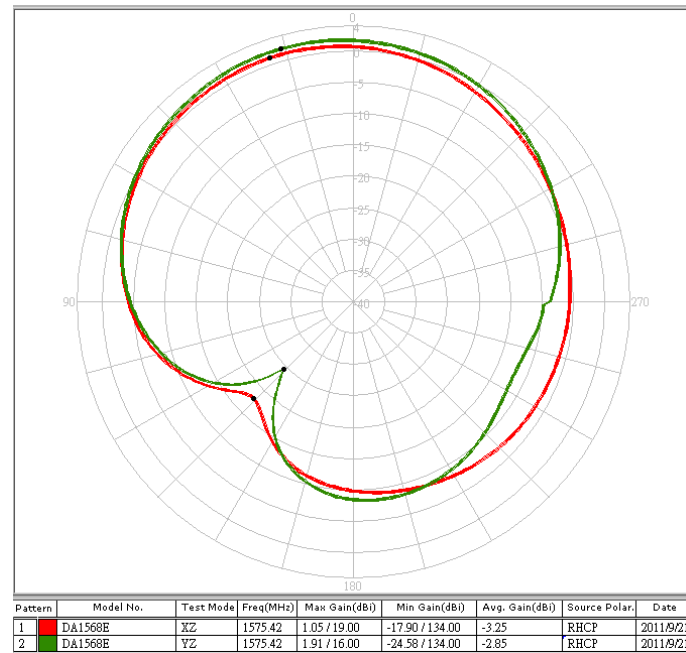


## 2.2. LNA Noise Figure @3.0V

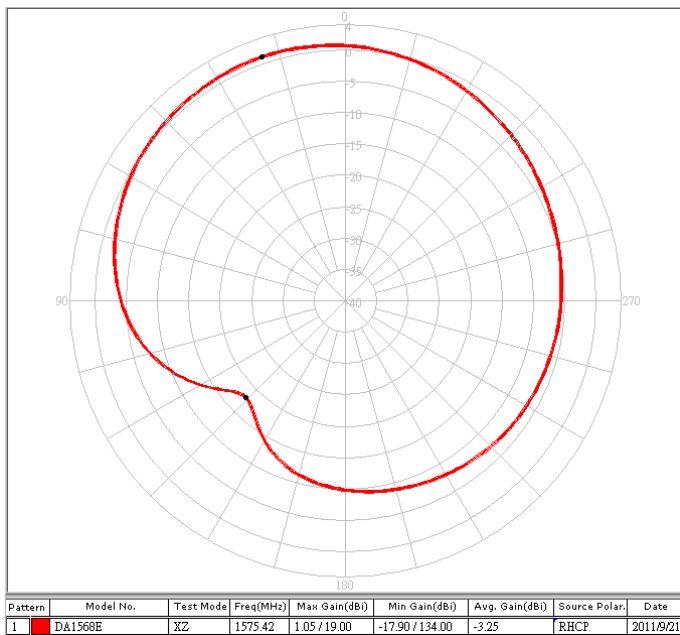


### 3. Radiation Patterns

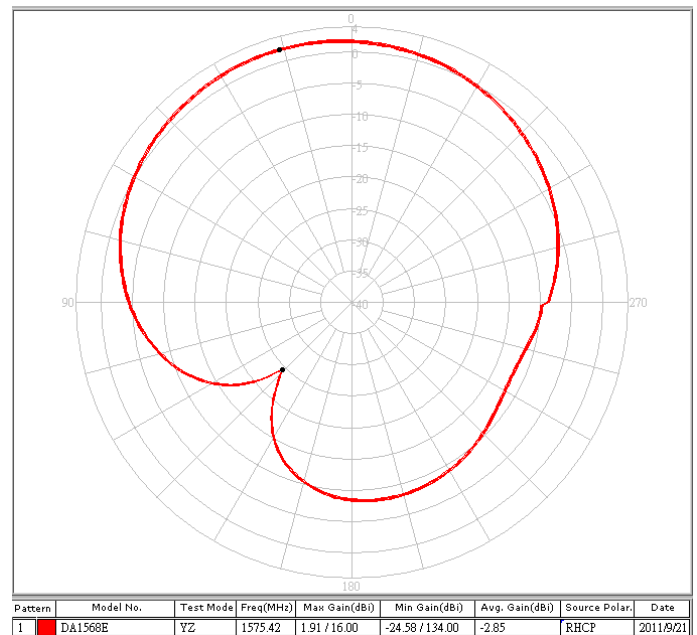
XY Plane



XZ Plane



YZ Plane

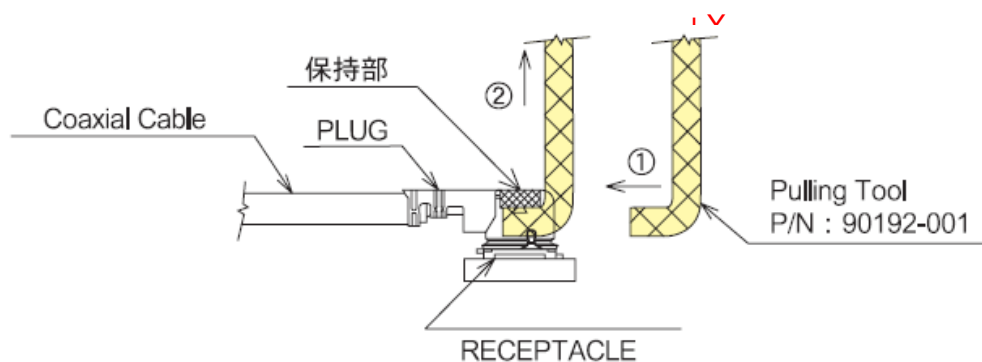


## 4. Plugs Usage Precautions

### 4.1. Mating / Unmating

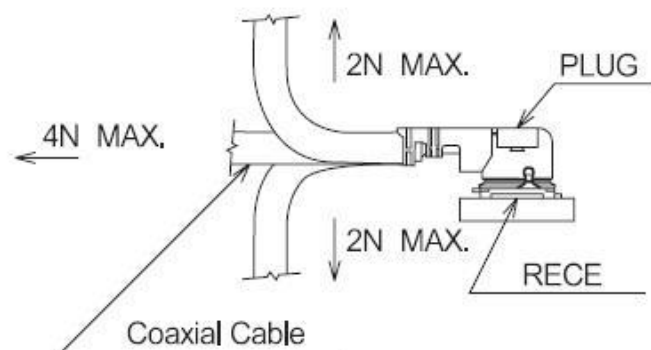
(1) To disconnect connectors, insert the end portion of I-PEX under the connector flanges and pull off vertically, in the direction of the connector mating axis.

(2) To mate the connectors, the mating axes of both connectors must be aligned and the connectors can be mated. The "click" will confirm fully mated connection. Do not attempt to insert on an extreme angle.

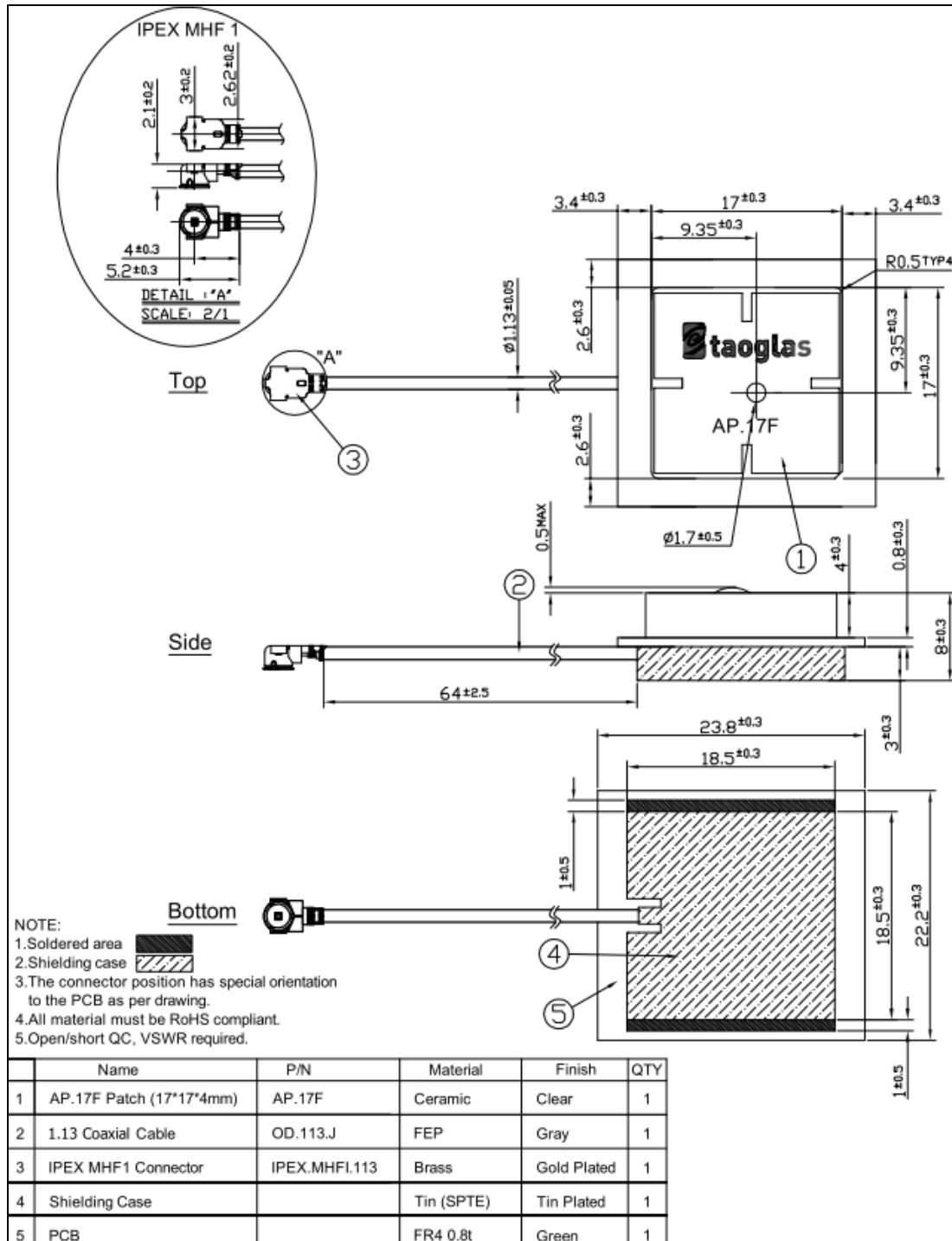


### 4.2. Pull forces on the cable after connectors are mated

After the connectors are mated, do not apply a load to the cable in excess of the values indicated in the diagram below.

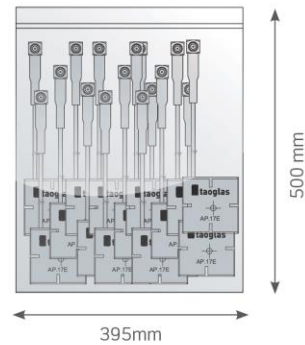


## 5. Mechanical Drawing (Unit: mm)

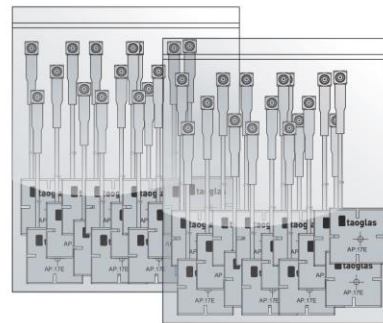


## 6. Packaging

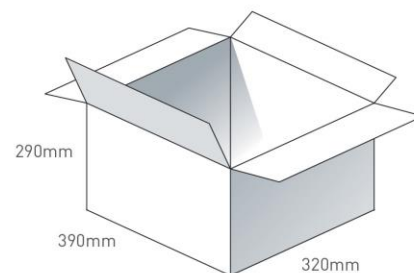
60 pc AP.17E.07.0064A in Vacuum Bag  
 Dimensions - 500\*395mm  
 Weight - 650Kg



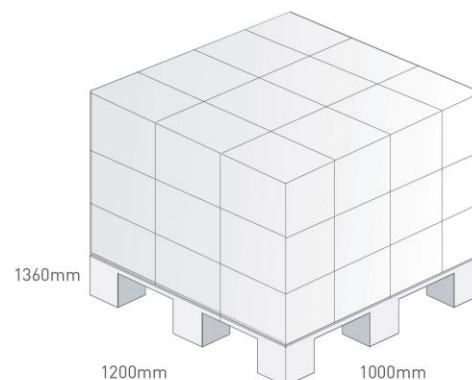
Batch of 2, 120pc AP.17E.07.0064A in Vacuum Bags  
 Dimensions - 500\*395mm  
 Weight - 1.3Kg



10 Vacuum Bags  
 600 pcs in one carton  
 Carton Dimensions - 390\*320\*290mm  
 Weight - 6.3Kg



Pallet Dimensions 1200\*1000\*1360mm  
 36 Cartons per Pallet  
 9 Cartons per layer  
 4 Layers



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