

# SUCTION CUPS / Mark free flat Structure

## FF15X



### Features and Strengths

Excellent performance for very thin and light weight products  
Mark free

### Examples of use

Semiconductor, Display, Thin Film



### Recommended Lifting Force (Max.)

Model	Volume (cm <sup>3</sup> )	Lifting Force (Kg) - Perpendicular		
		- 20 kPa	- 60 kPa	- 90 kPa
FF15X	0.12	0.35	0.36	0.50

※ The lifting force above does not include safety factor

### Material Specifications

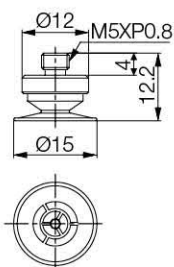
Material	Hardness Shore (°)	Color	Temperature (°C)
NBR	60	Black	-20~110
Silicone	55	Red	-70~200
White Silicone	55	Translucent White	-70~200
White Silicone (FDA)	55	Translucent White	-70~200
High temp. Silicone	50	Blue	-70~280
Conductive Silicone	70	Smoky Black	-45~90
Urethane	60	Dark Green	0~100
Mark Free	75	Black	-10~100

### Material Resistance

Description	NBR	Silicone	White Silicone	High temp. Silicone	Conductive Silicone	Urethane	Mark Free
Wear Resistance	Excellent	Good	Good	Good	Good	Excellent	Good
Oil	Excellent	Poor	Poor	Poor	Poor	Excellent	Excellent
Weather / Ozone	Fair	Excellent	Excellent	Excellent	Excellent	Excellent	Excellent
Alcohol	Good	Good	Good	Good	Good	Fair	Good
Acid	Fair	Poor	Poor	Poor	Poor	Poor	Excellent

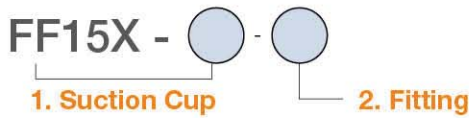
### Dimension

[ Unit : mm ]



[With M5M fitting]

## I Build an Ordering No.



1. Suction cup	Description	Symbol
	Mark free and Flat structure suction cup, 15mm diameter, Nitrile (NBR)	FF15X-N
	Mark free and Flat structure suction cup, 15mm diameter, Silicone	FF15X-S
	Mark free and Flat structure suction cup, 15mm diameter, White silicone	FF15X-WS
	Mark free and Flat structure suction cup, 15mm diameter, White silicone (FDA)	FF15X-WS (FDA)
	Mark free and Flat structure suction cup, 15mm diameter, High temperature silicone	FF15X-HS
	Mark free and Flat structure suction cup, 15mm diameter, Conductive silicone	FF15X-CS
	Mark free and Flat structure suction cup, 15mm diameter, Urethane	FF15X-U
	Mark free and Flat structure suction cup, 15mm diameter, Mark free	FF15X-A

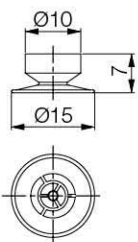
2. Fitting	Description	Symbol
	Fitting, M5 male	M5M

## I Spare Parts – Rubber Parts

Part No.	Description	Weight (g)	Color
FF15X-N	Mark free and Flat structure suction cup, 15mm diameter, Nitrile (NBR)	0.46	Black
FF15X-S	Mark free and Flat structure suction cup, 15mm diameter, Silicone	0.43	Red
FF15X-WS	Mark free and Flat structure suction cup, 15mm diameter, White silicone	0.44	Translucent White
FF15X-WS (FDA)	Mark free and Flat structure suction cup, 15mm diameter, White silicone (FDA)	0.44	Translucent White
FF15X-HS	Mark free and Flat structure suction cup, 15mm diameter, High temperature silicone	0.47	Blue
FF15X-CS	Mark free and Flat structure suction cup, 15mm diameter, Conductive silicone	0.45	Smoky Black
FF15X-U	Mark free and Flat structure suction cup, 15mm diameter, Urethane	0.47	Dark Green
FF15X-A	Mark free and Flat structure suction cup, 15mm diameter, Mark free	0.49	Black

## I Dimension

[ Unit : mm ]



## I Spare Parts – Fittings

Part No. (Code No.)	Fitting size	Description	Weight (g)
350 007 0103	M5M	M5 male	2.41