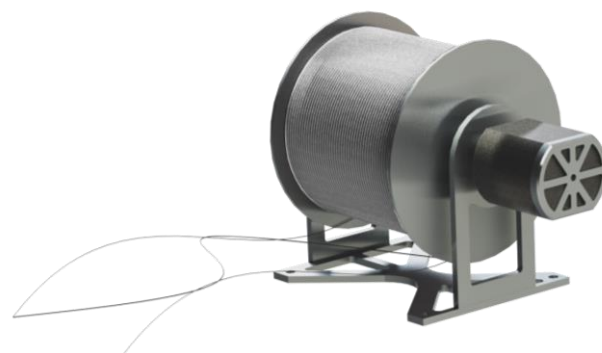


Plasma Brake Module (PBM)

A lightweight deorbiting system for use in Low Earth Orbit. It is most effective on orbits where atmospheric drag is nonexistent. PBM is capable of deorbiting up to 1000kg satellite from up to 1000km. As the module is lightweight and requires little power to work, it is excellent for deorbiting CubeSats also.

Plasma Brake Module consists of a tether of required length on a roll, deployment system and control electronics.



Science behind the technology

The plasma brake uses Coulomb drag to interact with the upper atmosphere plasma, slowing down a spacecraft. As the spacecraft slows down its orbit starts to shrink. As the spacecraft comes closer to the ground it will start to deorbit naturally and will burn up in the atmosphere. The main use for plasma brake is to deorbit a satellite at the end of its life.

Modular structure for custom requirements

PBM can be fitted with 100 to 5000 meters long tether. Multiple Plasma Brake Modules can be fitted in to a satellite for quicker deorbiting. PBM can be fitted with specialized solar panels for increased reliability for situations in which the satellites power production is faulty.

Specs that can be modified for customer's needs:

- Length of the tether (amount of drag created by it)

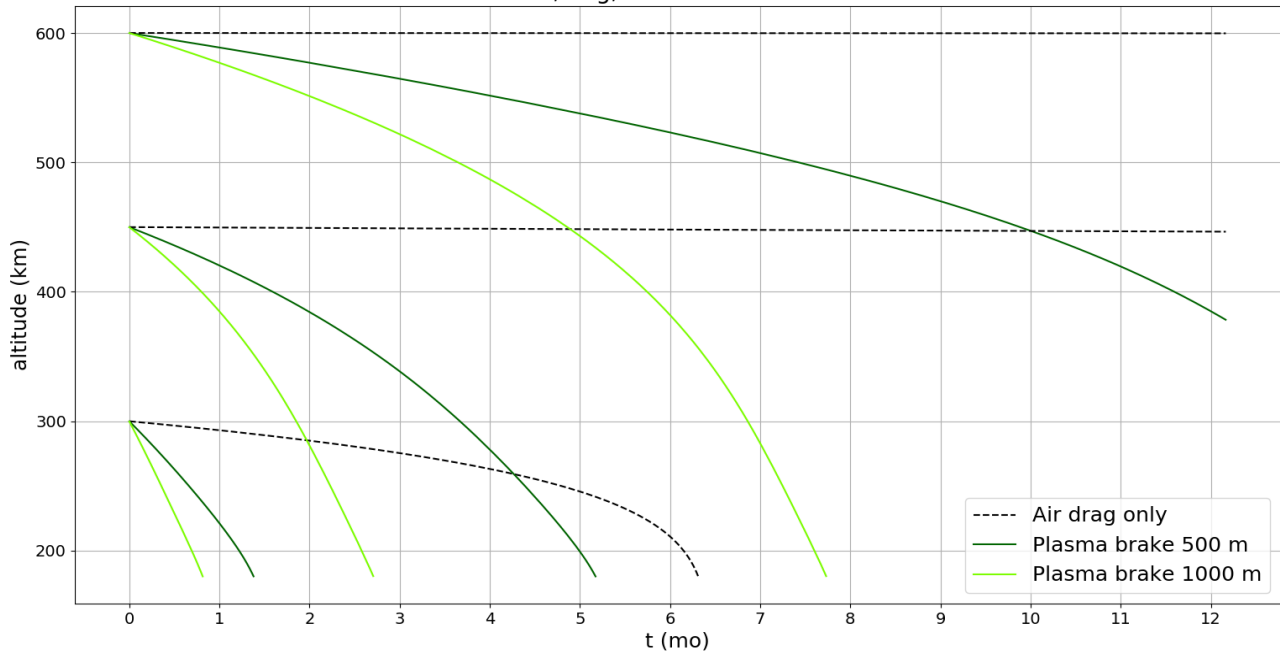
Safety

Plasma brake is safe to use due to its low requirements for deorbiting. It needs to be opened and charged electrically. The power requirements are tiny compared to the drag created by the brake. Plasma Brake is also safe for other satellites due to its micro-scale thickness. A tether hitting another satellite, which is highly unlikely, can only leave a mark few micrometers deep.

Specs (Preliminary)

	CubeSats	Micro and small satellites
Power	0.25 – 1 W	1 – 4 W
Thrust	Up to 100 nN / m	Up to 100 nN / m
Mass	< 100 g (target 50 g)	< 1 kg
Form	3 x 5 x 5 cm	10 x 10 x 10 cm
Date available	Samples: Q1 2020 Deliveries: Q3 2020	Samples: Q1 2020 Deliveries: Q3 2020
Price: (vat 0%)	15k€+ (Tethers from 100 m to 1000 m)	50k€+ (Tethers from 1000 m to 5000 m)

CubeSat 3U, 6kg, 500 m and 1000 m tethers



Microsatellite 50 kg, 2000 m and 5000 m tethers

