



Technical Data Sheet

Issued: March 7, 2018

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PLA Premium Filament

SECTION 1, IDENTIFICATION

Product Part Number:

Black	AW3D-F06601	Magenta	AW3D-F06614
White	AW3D-F06602	Black	AW3D-F89501
Natural	AW3D-F06603	White	AW3D-F41302
Red	AW3D-F06604	Blue	AW3D-F80815
Neon Blue	AW3D-F06610	Red	AW3D-F95604
Light Green	AW3D-F06611	Green	AW3D-F38806
Silver	AW3D-F06607	Yellow	AW3D-F72208
Neon Yellow	AW3D-F06612	Natural	AW3D-F30603
Grape	AW3D-F06609	Silver	AW3D-F63107
Neon Orange	AW3D-F06613		

Recommended Use:

3D printing filament

AIRWOLF 3D TESTED PROPERTIES

Ultimate Strength: 64.4 MPa

Elongation at Break: 15.3%

(see "Methodology of Test" for details)

SECTION 2, DESCRIPTION

Description:

More environmentally friendly than other materials, PLA is biodegradable, derived from plants, BPA-free, and contains no phthalates or heavy metals

Poly(lactic acid)

Applications:

3D printing in schools
Prototypes with short shelf life
Toys and promotional items
"Lost Wax" Molds from 3D printed parts

Key Features:

Can be printed on a cold surface -works on heated or unheated beds.
Shiny and smooth appearance compared to ABS
No harmful fumes during printing
Can deform because of heat
Comes in a variety of colors and blends

SECTION 3, SPECIFICATIONS

EXTRUDER TEMPERATURE	195C – 225C
BED TEMPERATURE	60C - 70C
HEATED BED	Optional
RECOMMENDED BUILD SURFACE	WolfBite Nano
DIAMETER	2.88mm
COLOR	Black, Blue, Green, Natural, Red, Silver, White, Yellow
COMPATIBLE MACHINE	AXIOM , AXIOM 20 , AXIOM Dual Extruder, EVO , AXIOMe
GENERAL	
Density ISO 1183	1.24 G/CM3
THERMAL	
Melt Temperature DSC	168 C
Glass Transition DSC	58 C
Melt Flow Rate ISO 1133	8.1 g/10min (210 deg)
MECHANICAL	
Tensile Elongation ISO 527	15.3%
Tensile Strength ISO 527	64.4 Mpa
Flexural Modulus ISO 178	3100 Mpa
Flexural Strength ISO 178	85 Mpa
Impact strength (Charpy) ISO 179	3.2 KJ/m2

SECTION 4, ADDITIONAL INFORMATION

Arrives sealed in an airtight bag with moisture-absorber to keep out dust and moisture. Keep PLA in closed bag or container when not in use.

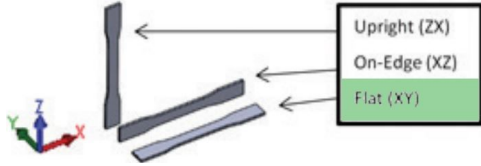
Methodology of tests performed by Airwolf 3D:

Airwolf 3D tested this material, in its 3d printed form, for the mechanical properties of “Ultimate Strength” and “Elongation at Break” per ISO 527 standards. Specimens were printed on an AXIOM 3D printer with a nozzle orifice size 0.5mm. The specimens were “dog bone” shaped with a size of 75mm x 10mm x 2mm and printed with 90% fill density. Wolfbite Nano adhesive was used to adhere the part to the heated bed during print cycle. The default “Standard” setting in APEX slicing software was used.

Details are as follows:

Layer height:	0.25mm
Shell thickness:	1.0mm
Bottom/Top thickness:	1.2mm
Fill density:	90%
Printing temp:	215C
Bed temp:	60C
Flow:	95%
Color:	Yellow

Specimens were printed flat on the XY plane.



The equipment used: MODEL 1ST Electromechanical Testing Machine by Tinius Olsen (Crosshead).

A minimum of six specimens were tested. The Ultimate Strength and Elongation at Break values were determined by calculating the average of all specimens tested.

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AIRWOLF 3D FILAMENT - PLA
YELLOW

ISO 527 Tensile (Crosshead)



Ultimate Strength MPa	Elongation at Break %	Yield Strength MPa
66.7	17.0	N/F
62.9	15.0	N/F
65.2	15.1	N/F
65.2	15.3	N/F
63.1	15.1	N/F
62.7	14.5	N/F
Average 64,4	15,3	N/A
SD	0,883	N/A

