

BambuLab Standard Iris Purple PLA CF Purple

Material Engineering Report
MaterialID MAT0178

3DPiceland Engineering Platform

3DPiceland Labs

Generated with 3DPiceland Engineering Platform v60.0.6

WORKFLOW-RELIABILITY - Bug Fixes and Workflow Reliability

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Public-data contract: This static report contains only allowlisted material identity, public links, canonical MSRP and existing Verified Material Summary / governed score outputs. It excludes raw specimen rows and non-public operational data.

TEST COVERAGE

Complete

ENGINEERING AXES

6/6

PUBLIC MSRP

\$47.92 USD/kg

Material identity

MaterialID	MAT0178
Material	BambuLab Standard Iris Purple PLA CF Purple
Manufacturer	BambuLab
Product line	Standard
Base material	PLA
Category	Standard
Variant / finish	—
Reinforcement	CF
Color	Purple

Governed engineering profile

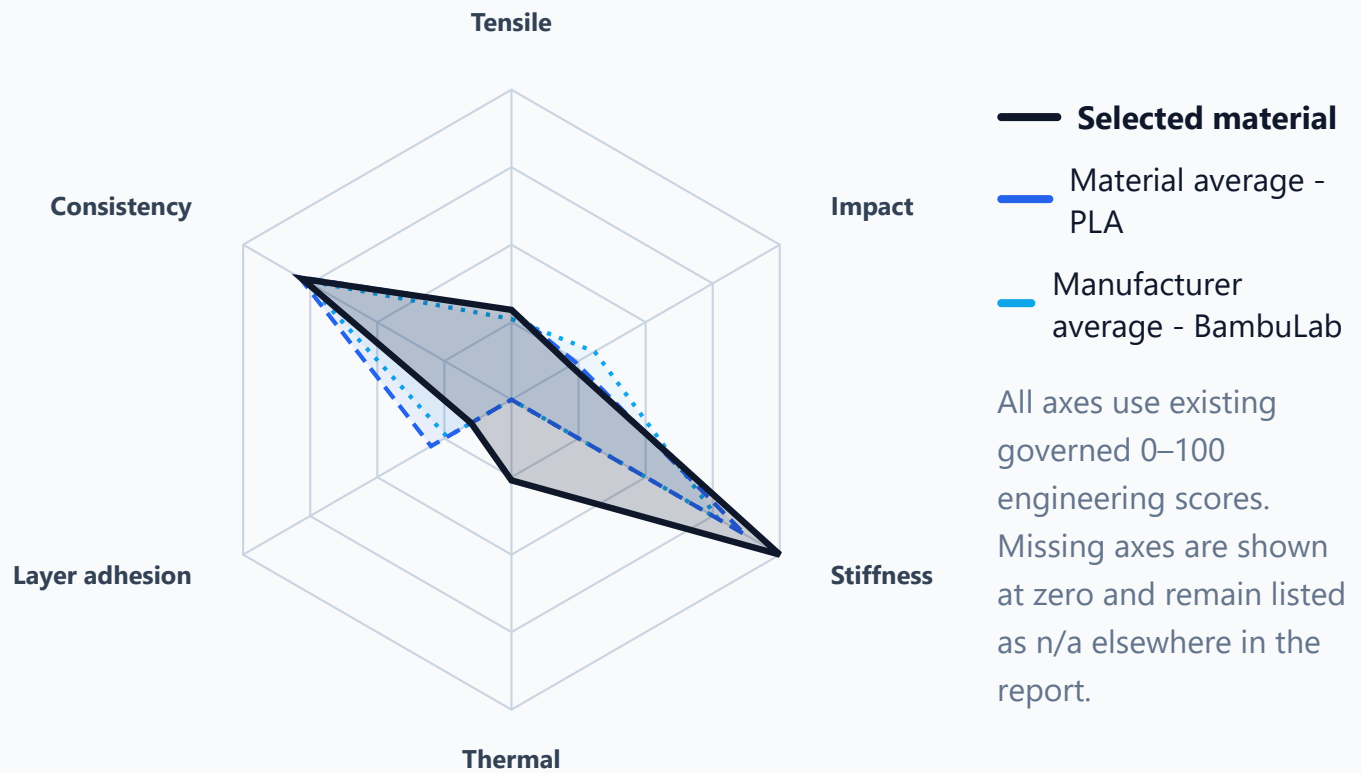
Overall	49/100
Tensile	29/100

Impact	22/100
Stiffness	100/100
Consistency	78/100
Layer adhesion	15/100
Thermal	26/100
Best available axis	stiffness

Engineering score profile



Engineering radar



Fixture thermal result

52 °C · score 26/100 · method 3dp-thermal-deflection-fixture-v1
Nearby BlueDOT probe-indicated fixture temperature from a non-standard comparative 3DPIceland method; not ASTM D648, ISO 75, specimen temperature, certified HDT or a manufacturer limit.

Material and manufacturer context

Metric	Selected material	Material average	Manufacturer average
Overall	49/100	50/100	47/100
Tensile	29/100	29/100	26/100
Impact	22/100	24/100	31/100
Stiffness	100/100	87/100	77/100
Consistency	78/100	79/100	77/100
Layer adhesion	15/100	30/100	24/100
Thermal	26/100	—	—

Verified measurement results

Existing Verified Material Summary outputs. The public renderer does not read raw specimen rows or recalculate these values.

Measurement	Average	Std. deviation	CV	Samples	Confidence
Tensile upright	6.169 MPa	3.008 MPa	48.7%	9	9/10
Tensile flat	39.898 MPa	4.195 MPa	10.5%	10	10/10
Impact upright	121.207 kJ/m ²	20.152 kJ/m ²	16.6%	10	10/10
Impact flat	310.71 kJ/m ²	31.899 kJ/m ²	10.3%	10	10/10
Stiffness modulus	3024.791 MPa	—	—	—	—
Stiffness deflection	1.794 mm	—	—	—	—

Measurement provenance

Canonical per-module measured dates from SQLite, shown in unambiguous ISO format. Missing dates are not inferred.

Module	Measured date
Tensile	Not recorded
Impact	Not recorded
Stiffness	Not recorded
Thermal	Not recorded

Engineering interpretation

Summary: BambuLab Standard Iris Purple PLA CF Purple has a specialized or limited engineering profile. It is below its material-family average by 1,3 points and above its manufacturer average by 1,8 points. Its strongest measured axis is Stiffness, while the weakest axis is Layer Adhesion.

Data-driven review: BambuLab Standard Iris Purple PLA CF Purple is best understood as a repeatable material for cosmetic, concept and low-load prototype work. Compared with the current verified dataset, it ranks better than 59% overall, is roughly aligned with the material-family average, and is roughly aligned with the manufacturer average. Its strongest engineering signal is Stiffness, while Layer Adhesion is the main limitation to consider before using it for demanding applications.

BEST FEATURE

Stiffness

MAIN LIMITATION

Layer Adhesion

DATASET POSITION

Better than 59%
97 / 234

Strengths

- Consistency: 78/100. Repeatability is one of the stronger signals in this material profile.
- Stiffness: 100/100. Stiffness is a relative advantage in this comparison group.

Limitations

- Tensile: 29/100. Avoid using this as the primary choice for tensile-loaded parts.
- Impact: 22/100. Avoid high impact or shock-loaded components without additional validation.
- Layer adhesion: 15/100. Z-axis performance should be treated with caution.

Engineering trade-offs

- Good repeatability does not compensate for low tensile capability in load-bearing designs.
- Stiffness is useful for shape stability, but impact tolerance is a separate limitation.
- The report should be read as a suitability warning rather than a general-purpose recommendation.

Recommended applications

- Rigid brackets, fixtures and shape-stable prototypes
- Repeatable print jobs and production-style batches
- Cosmetic parts, concept models or low-load prototypes
- Avoid high tensile load applications
- Avoid high impact components

Metric rankings and percentiles

Metric	Score	Rank	Percentile
Overall	49/100	97 / 234	Better than 59%
Tensile	29/100	114 / 226	Better than 50%
Impact	22/100	116 / 226	Better than 49%
Stiffness	100/100	1 / 223	Better than 100%
Consistency	78/100	113 / 231	Better than 52%
Layer adhesion	15/100	166 / 226	Better than 27%
Thermal	26/100	155 / 209	Better than 26%

Decision guidance

- Use this material mainly for low-load, visual or experimental parts.
- Review the listed alternatives if the application needs stronger overall performance.
- Do not choose it as a tensile-strength benchmark material.
- Avoid selecting it for impact-focused testing or shock-loaded designs.

Better alternatives

MaterialID	Material	Manufacturer	Overall	Tensile	Impact
MAT0069	ProtoPasta HTPLA Blood of My Enemies PLA Red	ProtoPasta	100/100	—	—
MAT0079	Polymaker PolyLight PLA Pro Black	Polymaker	65/100	35/100	52/100
MAT0109	Polymaker PolyMax PLA Black	Polymaker	64/100	32/100	62/100

Peer context

Highest-scoring same-base-material peers from the current governed dataset. This context is descriptive and is not recalculated by the public renderer.

MaterialID	Material	Manufacturer	Overall	Tensile	Impact
MAT0069	ProtoPasta HTPLA Blood of My Enemies PLA Red	ProtoPasta	100/100	—	—

MaterialID	Material	Manufacturer	Overall	Tensile	Impact
MAT0079	Polymaker PolyLight PLA Pro Black	Polymaker	65/100	35/100	52/100
MAT0109	Polymaker PolyMax PLA Black	Polymaker	64/100	32/100	62/100
MAT0080	Polymaker PolySonic PLA Pro Blue	Polymaker	64/100	30/100	58/100
MAT0076	BambuLab Tough+ PLA Tough+ Black	BambuLab	63/100	26/100	59/100
MAT0108	Polymaker PolyLight PLA Black	Polymaker	61/100	33/100	14/100
MAT0074	Winkle Matte PLA Matte Red	Winkle	60/100	34/100	—
MAT0122	Add:North Enhanced PLA Clear	Add:North	59/100	40/100	10/100

Public links

[Manufacturer website](#) [Download PDF](#)

Methodology and limitations

Results are comparative 3DPrinted measurements from home-built test equipment. Thermal is a nearby BlueDOT probe-indicated fixture temperature, not ASTM D648, ISO 75 or specimen temperature. Missing evidence remains n/a. Scores and test results are not recalculated by this publishing layer and do not replace certified manufacturer datasheets or accredited laboratory testing.

- [Testing methodology](#).
- [Engineering methodology whitepaper](#)