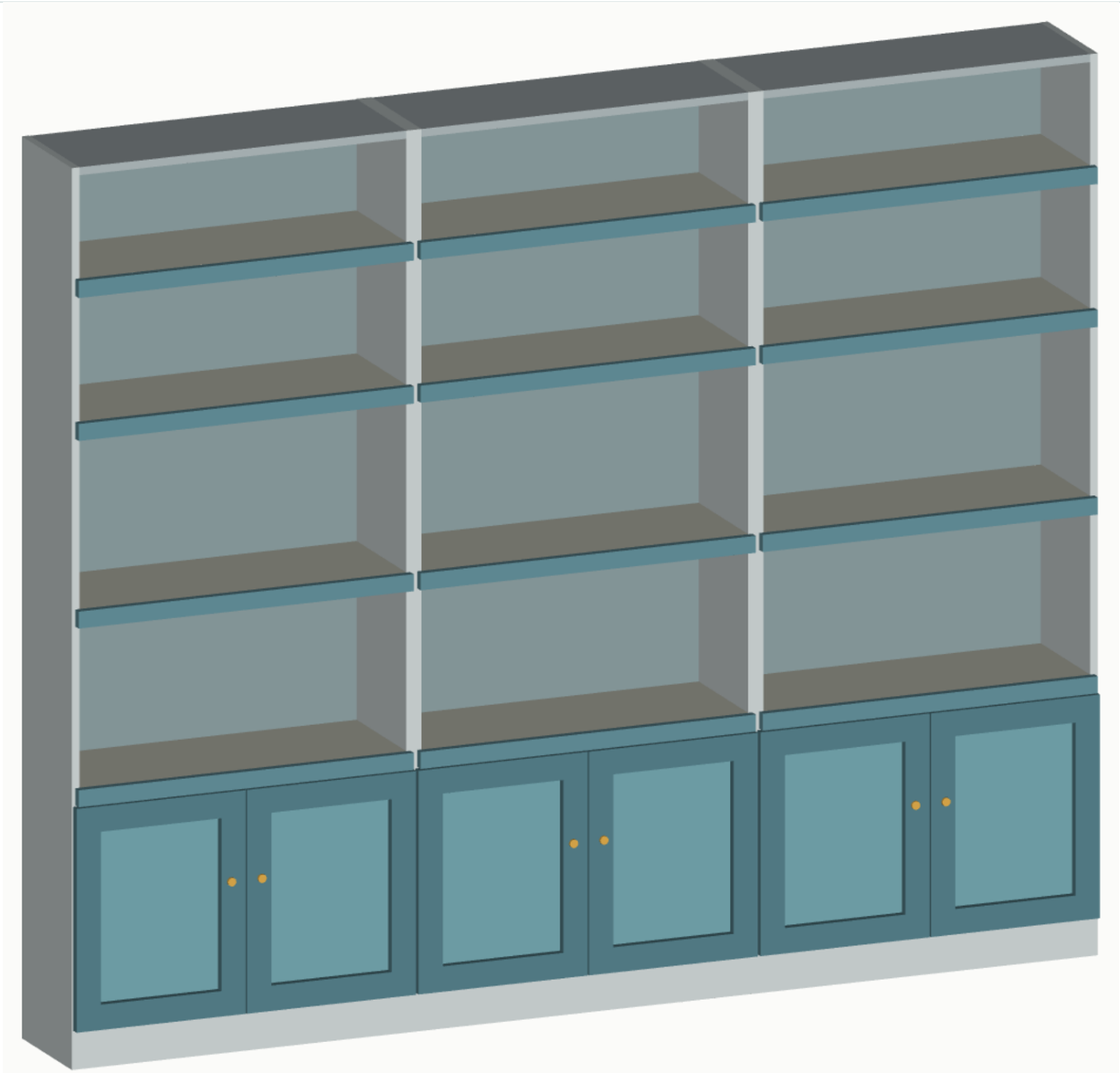
Upright assembly - front-facing isometric

MODEL FORM / APPROVED DIMENSIONAL ENVELOPE / PROXY LEGEND



MODEL V-01 | Front / side / crown shown, perspective derived from actual CAD solids

MODEL STATUS

Three IKEA BILLY units in one three-bay editorial assembly.

Six independent Shaker doors; four trimmed visible shelf lines per bay.

Core cabinet nominal envelope is manufacturer-sourced; internals and hardware are not measured.

All 105 modeled solids re-imported as valid B-rep geometry.

VISUAL CLASSES

- Original bookcase / backing
- Shelves + trim
- Shaker frame + panel
- Knob symbol
- Hinge gauge (not fitted)
- Plate pitch proxy

UNITS AND AXES

X + right across the library wall

Y + up from floor / installed height

Z + backward from facade

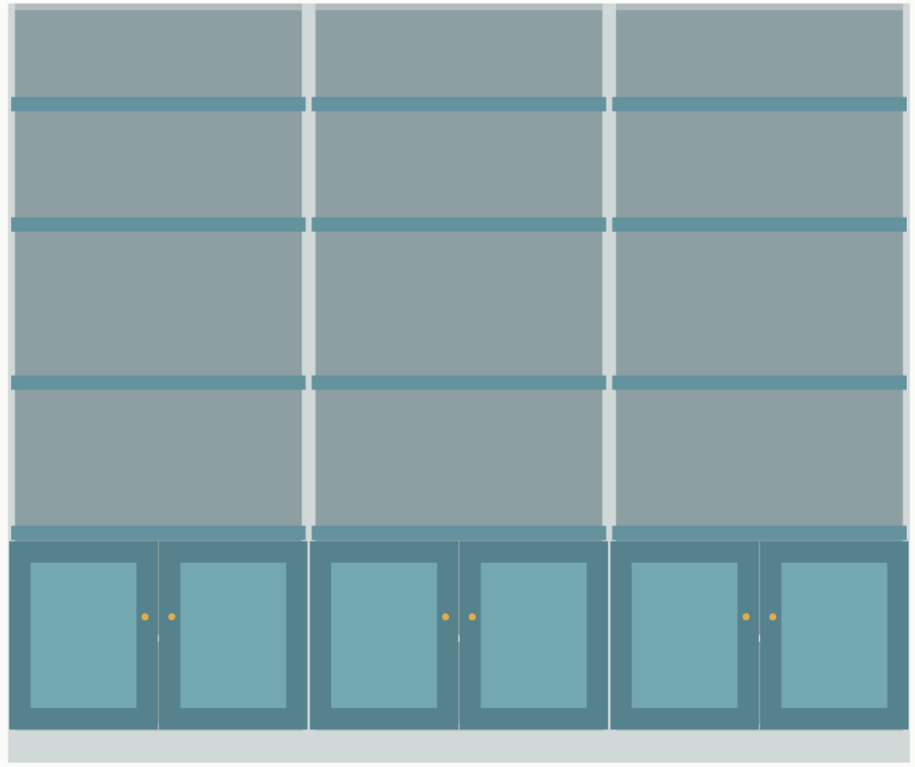
Origin: X=0, Y=0, Z=0 at front / base

No modeled wall or anchoring hardware.

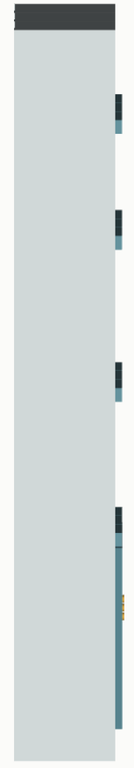
Orthographic shape reconciliation

F-01 FRONT / S-01 RIGHT SIDE / P-01 PLAN | GEOMETRY FROM THE EXPORTED SOLIDS

F-01 | FRONT - 3 BAYS, 6 DOORS, 12 UPPER TRIM SEGMENTS



S-01 | RIGHT SIDE



P-01 | TOP PLAN - 2400 mm WIDTH / 279 mm CARCASS DEPTH



DIMENSION CHECK / STAGE 5 REV A

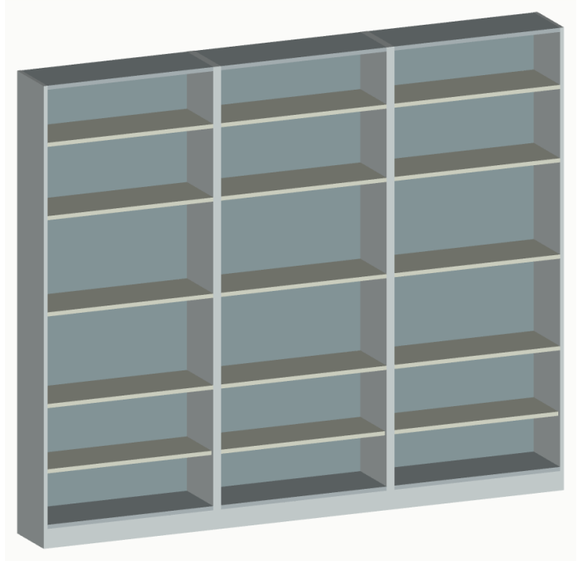
DIM-001 width / bay	**800.000 mm [31.496 in]**
DIM-001 carcass height	**2019.000 mm [79.488 in]**
DIM-001 carcass depth	**279.000 mm [10.984 in]**
DIM-002 assembled width	**2400.000 mm [94.488 in]**
Added door face	**Z = -19.000 mm [0.748 in]**
Symbolic knob projection	**to Z = -25.000 mm**

PASS | Upright X-width, Y-height, Z-depth and principal openings / repeats match E-01, P-01, X-01.

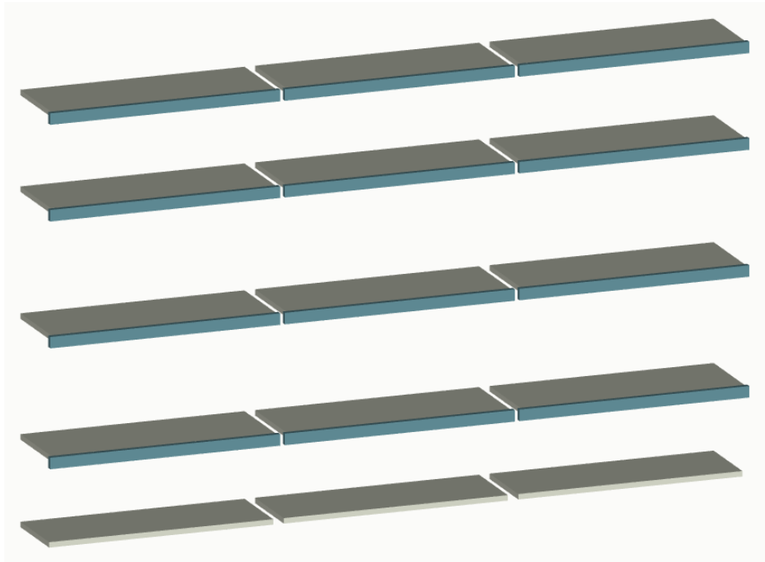
Construction classes and visibility

ACTUAL 3D VIEWS / PURCHASED COMPONENTS SHOWN AS TRANSLATED CONSTRUCTION GEOMETRY

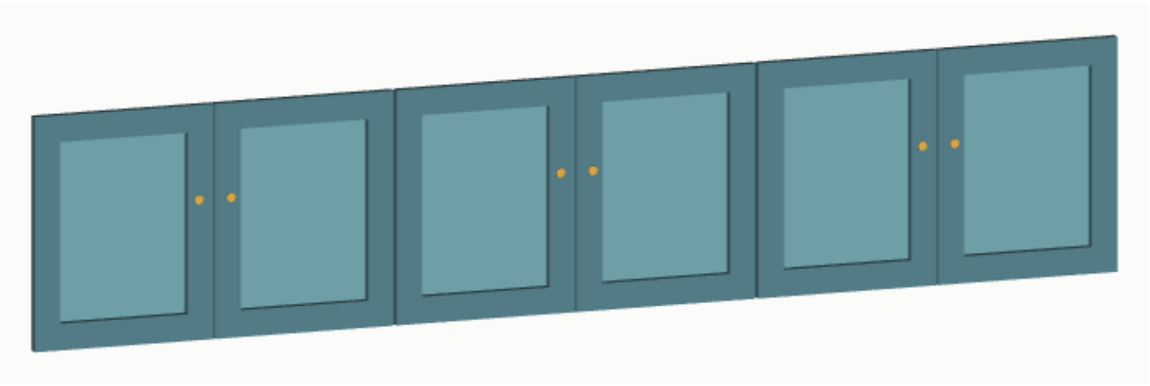
C-01 | ORIGINAL BOOKCASE COMPONENTS - 3 BAYS



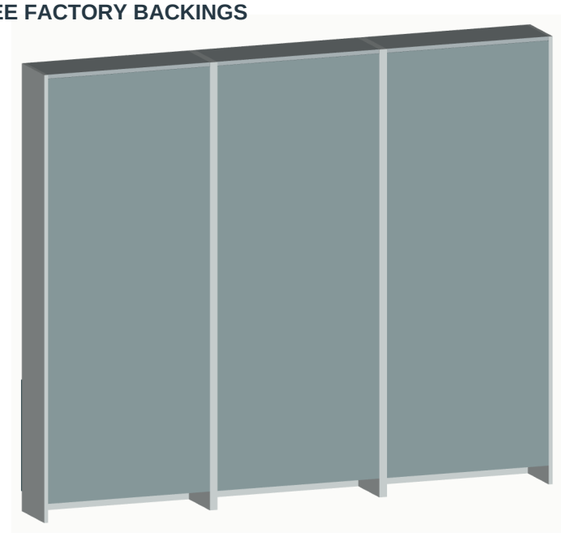
C-02 | ALL 15 SHELVES + 12 SHELF-FRONT STRIPS



C-03 | SIX DOORS / SIX SYMBOLIC KNOBS



C-04 | REAR FACING - THREE FACTORY BACKINGS

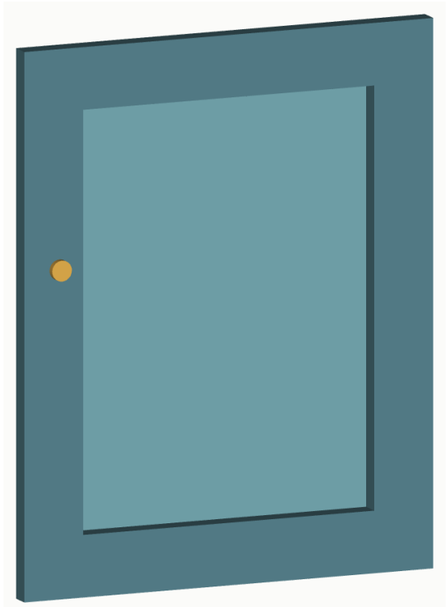


Visibility proof: factory sides, tops, backs, shelves, Shaker frames, panels, noses and knobs shown by class.

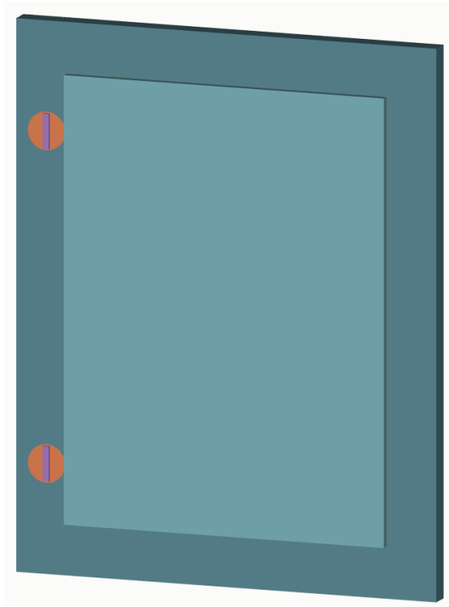
Door construction and unfixed interfaces

ILLUSTRATIVE FABRICATION GEOMETRY IS NOT A VERIFIED HINGE OR ANCHORING TEMPLATE

D-01 | ONE SHAKER DOOR - FRONT



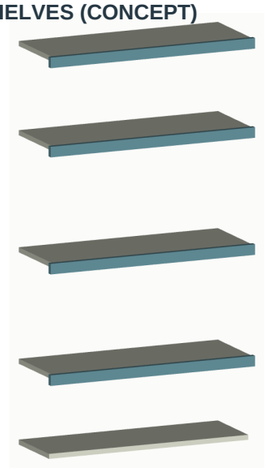
D-02 | REAR PANEL + CUP GAUGE



D-03 | HINGE / PLATE GAUGES



D-04 | TRIM BOARD ON EXISTING SHELVES (CONCEPT)



BUILD-INTERFACE REGISTER

SUPPORTED | Shaker door frame

57 mm poplar rails/stiles, 19 mm nominal stock; pocket-hole and glued frame, square before panel fixing.

SUPPORTED | Rear panel

6.35 mm plywood panel; 10 mm illustrative overlap over rear of frame. Check squareness and panel seating.

BOUNDARY | Hinge position

35 mm cup / 13 mm depth are documented; modeled cup center is illustrative. DO NOT DRILL from model.

BOUNDARY | Factory shelf front

38.1 mm face x 18.26 mm projecting trim. Foil-to-wood fixing method unverified.

B-01 / B-02 / B-03: Attachment strength, overlay, shelf fixing and wall connection remain field-verification boundaries.

Component occurrences and coverage

SCHEDULE CROSS-CHECKED AGAINST 105 STEP SOLIDS / SELECTED PRODUCT IDENTITIES

IDENTITY	CONSTRUCTION CLASS	STEP SOLIDS	INSTALL / USE	EVIDENCE STATE	VISIBLE IN PDF
PROD-001	IKEA BILLY 205.220.46 carcass	**33**	3 units	Outer size: verified; internal: proxy	M-01, M-03 C-01 / C-04
CMP-001	Door frame: poplar rails and stiles	**24**	6 doors	Custom / 19 mm x 57 mm	M-01, M-03 C-03; M-04 D-01
CMP-002	Rear panel: cabinet-grade plywood	**6**	6 panels	Custom / nominal 1/4 in	M-01, M-04 D-02
PROD-005	Shelf-front: primed 1x2 pine	**12**	12 strips	38.1 x 18.26 mm / length P	M-01; M-03 C-02; M-04 D-04
PROD-002	Blum 71B3550 - cup gauge only	**12**	12 P	35 mm dia, 13 mm deep	M-04 D-03; M-05 H-01
PROD-003	Blum 173L6100 - pitch marker	**12**	12 P	32 mm pitch; shape is proxy	M-04 D-03; M-05 H-01
PROD-004	Amerock Arden BP37340CZ - symbol	**6**	6 knobs	R9.5 symbol, non-factory size	M-01, M-03 C-03

H-01 | ALL TWELVE HINGE CUP / MOUNTING-PLATE PAIRS - SYMBOLIC POSITION



USE ALLOCATION AUDIT

3 BILLY purchases (33 construction solids)

6 doors (24 frame bars + 6 rear panels)

12 trim strips / 4 locations per bay

12 hinge gauges + 12 plate markers

6 brass knob symbols

TOTAL EXPORTED CLOSED SOLIDS: 105

PROD-007/008 primer and paint are finish specifications, not physical solids. Fasteners, adhesive, filler, wall anchors and decor are not modeled.

Saved-file verification and limitations

UNIT-SCALE PROOF / SOLID RE-IMPORT / EXACT CIRCULAR FEATURES / FIELD BOUNDARIES

STEP IMPORT / PHYSICAL BOUNDS

Application protocol	**ISO 10303 AP214**
Saved length unit	**SI_UNIT(.MILLI.,.METRE.) x 1.000 mm**
Raw min -> max	**(0, 0, -25) -> (2400, 2019, 279)**
Physical X / Y / Z	**2400 / 2019 / 304 mm**
Physical size in inches	**94.488 / 79.488 / 11.969 in**
Imported solids / valid	**105 / 105 watertight B-rep**
Assembly orientation	**X right / Y up / Z back**

TRACEABLE PROTOTYPE DESIGN SIZES

Door example	**395.5 W x 500.9 H x 19 mm**
Frame pieces	**57 mm rails and stiles; clear 281.5 W**
Panel example	**301.5 W x 406.9 H x 6.35 mm**
Trim section	**38.1 face x 18.26 projection**
Trim front levels	**630 / 1030 / 1450 / 1770 mm**
Concealed shelf	**340 mm - illustration only**
Hardware	**See detailed analytic feature audit below**

ANALYTIC GEOMETRY AUDIT - VERIFIED FROM THE SAVED STEP

FEATURE / AUTHORITY	REQUIRED PHYSICAL	SAVED STEP ENTITIES	SAVED RAW / UNIT	RE-IMPORTED PHYSICAL	COUNT / RESULT
Blum hinge cup / DIM-007	Diameter 35; R17.5; depth 13 mm	CYLINDRICAL_SURFACE / CIRCLE	R17.5 / mm	R17.5 mm [0.689 in]	**12 gauges: PASS**
Illustrative stile bore / PMA-02	R17.5, depth 13 mm	CYLINDRICAL_SURFACE / CIRCLE	R17.5 / mm	R17.5 mm [0.689 in]	**12 cuts: PASS***
Knob marker / DXF circle	R9.5 mm symbol ONLY	CYLINDRICAL_SURFACE / CIRCLE	R9.5 / mm	R9.5 mm [0.374 in]	**6: PASS***
Mounting plate pitch / source	32 mm linear spacing	LINE / planar surfaces	32 mm / mm	32 mm [1.260 in]	**12 proxies: PASS***

***PASS means the saved curve matches the illustrative CAD geometry, NOT that the bore/knob/plate design is product-fit verified.**

Saved STEP entity counts: CIRCLE 120 | CYLINDRICAL_SURFACE 30 | MANIFOLD_SOLID_BREP 105 | POLYLINE 0.

FIELD VERIFICATION / CONSTRUCTION LIMITS

1. Measure true BILLY internal opening sizes, shelf pin positions and stationary shelf height; internal panel thicknesses are PMA-01.
2. Verify Blum hinge center setback, fixing to foil-covered particleboard, overlay, swing clearance and hardware screw strength.
3. Confirm wood trim attachment to factory-finished shelves without damaging the manufactured structure.
4. Select actual wall anchoring/anti-tip fixings for the substrate under the bookcase manufacturer instructions.
5. Test finish adhesion to IKEA paper foil; published primer and paint specifications do not prove factory-equivalent durability.

NOT A CUT LIST OR VERIFIED SITE INSTALLATION. STEP preserves editable B-rep solids; it does not preserve native feature history.