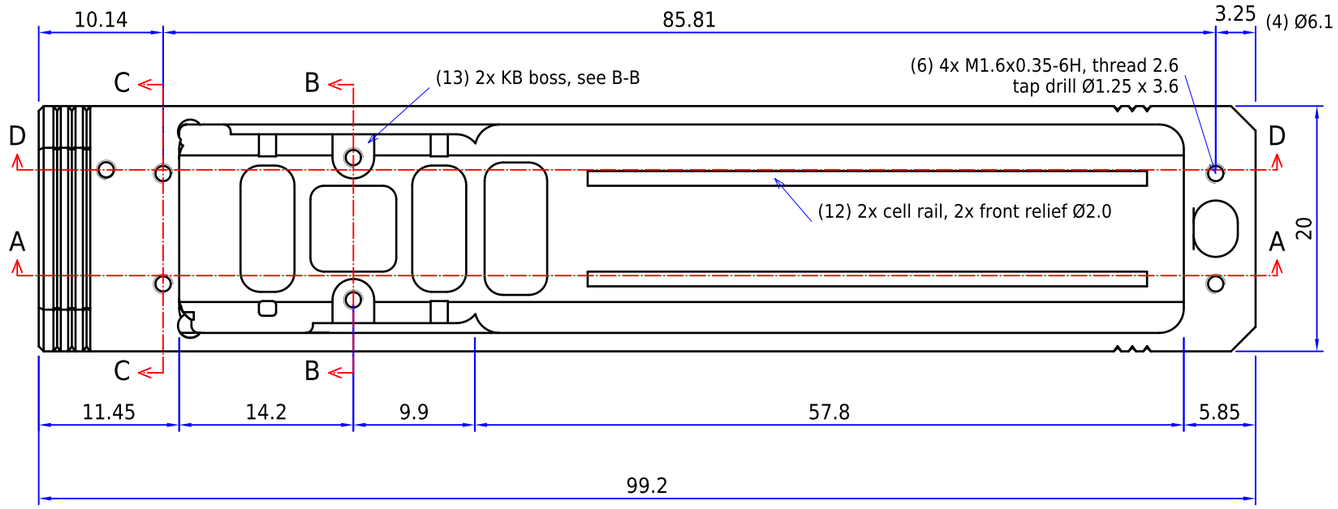
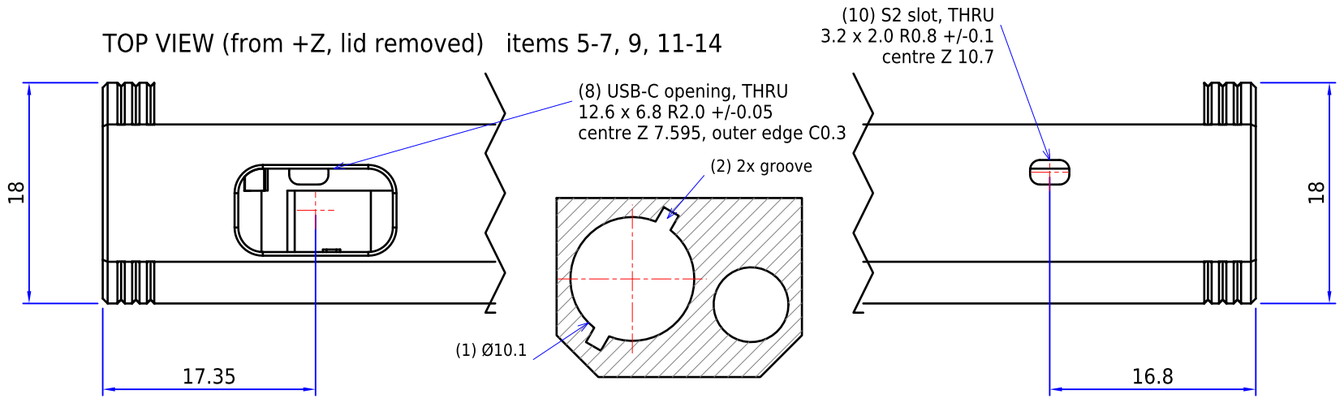


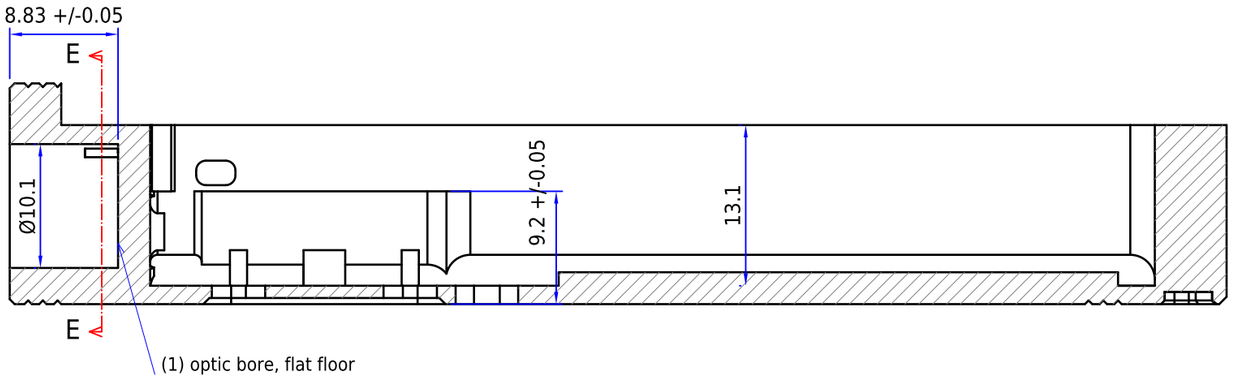
TOP VIEW (from +Z, lid removed) items 5-7, 9, 11-14



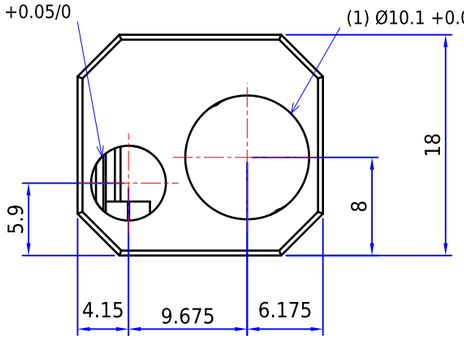
SECTION E-E (X = 7.5) items 1, 2

SIDE VIEW from -Y (control side) item 8

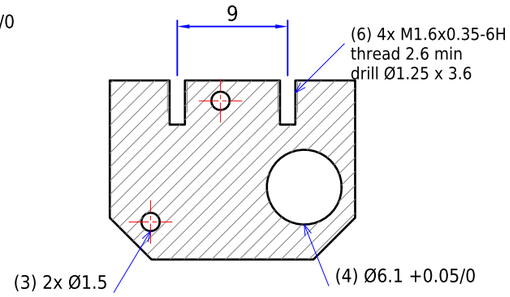
SIDE VIEW from +Y (laser side) item 10



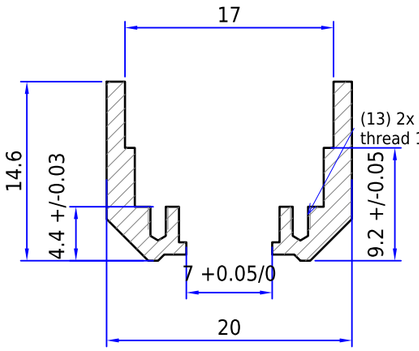
SECTION A-A (Y = -3.825, optic axis) items 1, 7, 11



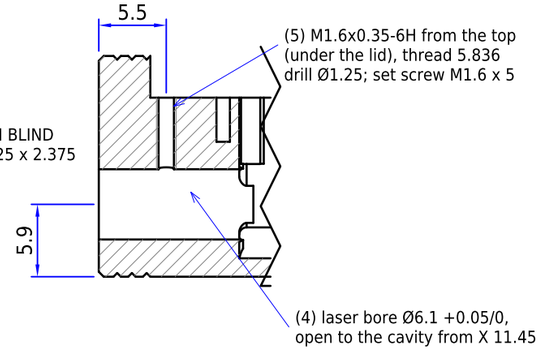
FRONT VIEW (from -X) items 1-4



SECTION C-C (X = 10.14) items 3, 4, 6



SECTION B-B (X = 25.65) items 7, 9, 11, 13



SECTION D-D (Y = 4.8) items 4, 5

ID	FEATURE	SPECIFICATION	TOLERANCE / NOTE
1	Optic bore (front)	Ø10.1 x 8.83 deep, flat floor; axis Y -3.825, Z 8.0 = 6.175 from the control-side face; centres the TIR optic and the LED board	Ø +0.05/0; depth +/-0.05 floor flat 0.03, Ra 1.6
2	LED wire grooves 2x	in the bore wall, 30 deg from 12 and 6 o'clock (upper one towards +Y): 1.4 wide, bottom R6.35 from the axis, X 6.13 to 8.83 (bore floor)	+/-0.1
3	LED wire holes 2x	Ø1.5 on the groove lines, R5.7 from the axis; upper: Y -0.975, Z 12.94, to X 11.46; lower: Y -6.675, Z 3.06, to X 12.64 (cavity corner)	+/-0.1
4	Laser bore (front)	Ø6.1, axis Y 5.85 (4.15 from the +Y face), Z 5.9; open to the cavity at X 11.45 (module Ø6 x 12, recess 0.3)	Ø +0.05/0; axis +/-0.05
5	Laser set-screw hole (top)	M1.6x0.35-6H from the head-block top (under the lid) into the laser bore, X 5.5, Y 4.8; tap drill Ø1.25, thread 5.836	6H; position +/-0.1 hidden under the lid
6	Lid screw threads 4x	M1.6x0.35-6H, drill Ø1.25 x 3.6 deep (flat), thread 2.6 min; X 10.14 and 95.95, Y +/- 4.5	6H; position +/-0.1
7	PCB ledges	Z 9.2, 0.8 wide, X 11.45 to 35.55. None: -Y at X 12.45 to 22.35 (USB-C); +Y at X < 15.65 (laser)	Z +/-0.05; both ledges coplanar within 0.05
8	USB-C opening (-Y wall)	12.6 x 6.8 R2.0 through; centre X 17.35, Z 7.595; outer edge C0.3	+/-0.05
9	Key openings 3x (floor)	through, centres X 18.65 / 25.65 / 32.65, Y 0.0; side keys 4.4 x 10.3 R1.6, main key 7.0 x 7.0 R1.1; bezel: sheet 2	+0.05/0; position +/-0.05 edges sharp inside
10	S2 slot (+Y wall)	3.2 x 2.0 R0.8 through; centre X 16.8, Z 10.7	+/-0.1
11	Cavity	17.0 wide (1.5 walls), floor Z 1.5, lid seat Z 14.6, vertical corners R2.0; 45 deg floor corners (1.5 walls), trough 15.4 between the ledges	+/-0.1
12	Cell rails 2x, front reliefs 2x	rails |Y| 3.5 to 4.7, top Z 2.6, X 44.75 to 90.35 (the cell rests on the inner edges); front reliefs Ø2.0, Z 9.2 up, X 12.35, Y +/- 7.9	rails top +/-0.05 reliefs +/-0.1
13	Key-board bosses 2x	Ø3.4 at X 25.65, Y +/- 5.8, joined to the trough wall, top Z 4.4; M1.6 blind: drill Ø1.25 to Z 2.025, thread to Z 2.55 (screw M1.6 x 2.5)	top Z +/-0.03, flat 0.02 no break-through
14	Key-board ribs 4x	1.4 wide at X 18.6 and 32.6, |Y| 5.9 to the trough wall; top Z 4.4; -Y at X 18.65 (USB-C gap): free post |Y| 5.9 to 7.1	coplanar with 13 within 0.03

NOTES

1 Material: aluminium 6061-T6. Geometry per FlashKa_tray.step; this sheet adds threads, fits, finish and notes. Exterior (octagon facets, panels, texture, grooves, key bezel, floor RF window, tail): sheet 2. Lid: drawing FK-H-02.

2 General tolerances ISO 2768-mK; toleranced values are critical.

3 Threads are tapped before anodising and gauged after finishing. The two key-board taps (13) are blind: do not drill through the floor.

4 Break all sharp edges 0.05-0.1. Deburr the USB-C and S2 openings, the key openings from inside and the optic bore edge: the TIR optic (Ø10.0) and the LED board (Ø10.0) must drop in; the bore centres both.

5 Finish: fine glass-bead blast, then anodise type II matte black (8-12 um). Tolerances apply after finishing. No marking of any kind.

6 Optic bore floor (X 8.83) is the LED board contact face (heat path): flat 0.03, Ra 1.6, no burr or anodise step.

7 Thin walls in the STEP (mm; none below 0.5): 1.125 optic bore to control face; 1.1 laser bore to +Y face; 0.685 front tap to head back face and 0.685 to the optic bore floor (0.51 and 0.51 at the thread crest); 0.751 upper LED wire groove (2) to the head-block top; 0.8 tail front wall; 1.0 floor under the key bezel; 1.3 floor web between two key openings; 1.649 metal under a key-board tap drill. Finish them in a light last pass.

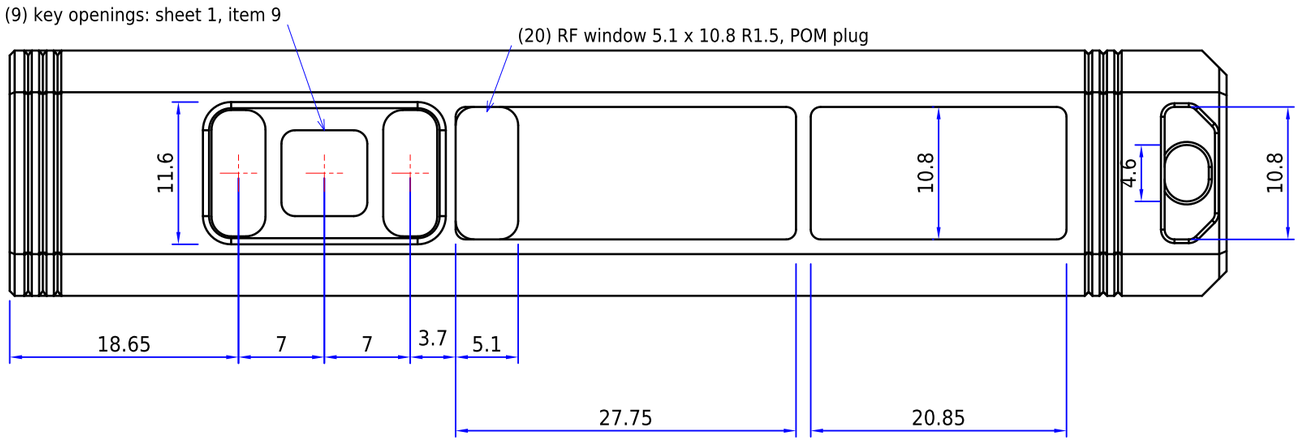
8 Inner vertical corners R2.0 (pocket 13.1 deep); the front corner reliefs (12) are intended. The tops of the bosses (13) and ribs (14) carry the key board: machine them in one setup.

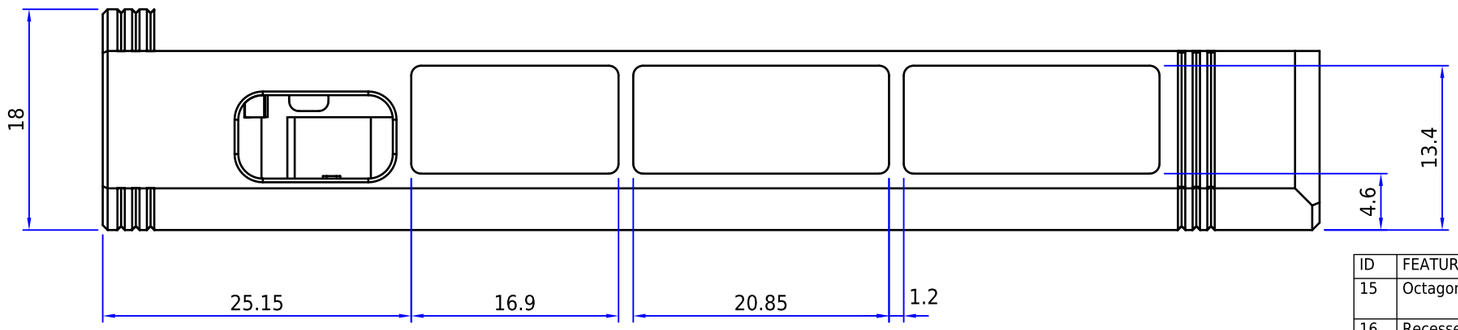
9 Sections: A-A at Y -3.825 (optic axis), D-D at Y 4.8 (laser set screw), B-B at X 25.65 (main key, bosses), C-C at X 10.14 (front taps, LED wire holes).

MAIN BODY (TRAY)

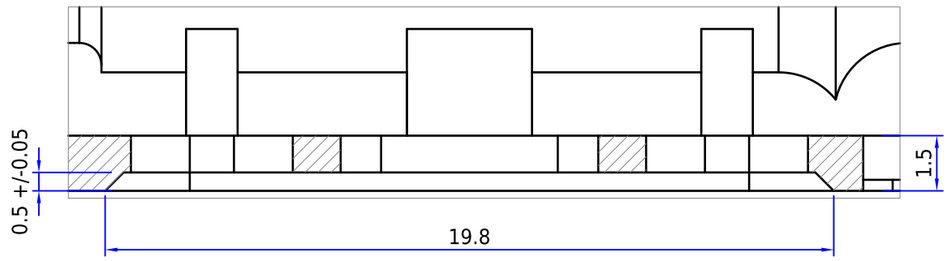
Part: FK-H-01 FlashKa_tray.step	SCALE 2:1 (details as marked) SHEET 1/2
FlashKa Keychain v0.7 2026-10-23	Units mm | ISO 2768-mK

BOTTOM VIEW (from -Z) items 15-23 (transverse groove positions: table, item 18)



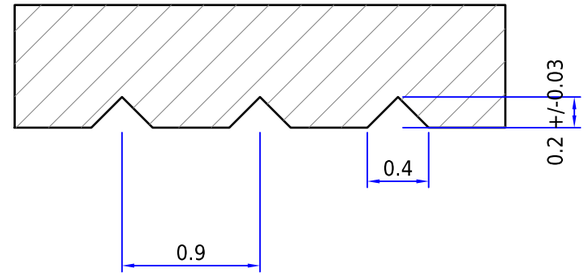


SIDE VIEW from -Y (the +Y side is the mirror image, its PCB-zone panel starts at X 19.6) items 15-18

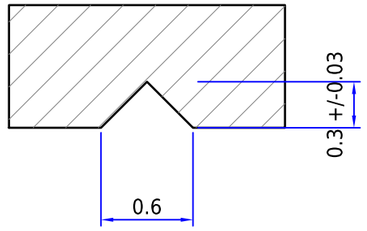


SECTION K-K (Y = 0, keys removed, 6:1) items 9, 19

DETAIL T (panel texture, 90 deg V, 25:1) item 17



DETAIL G (transverse groove, 90 deg V, 25:1) item 18



ID	FEATURE	SPECIFICATION	TOLERANCE / NOTE
15	Octagon section	20 x 18, 45 deg legs 3.4: bottom / top facets 13.2, sides 11.2, diagonals 4.81; front outline C0.4, tail outline C0.6; flat lid joint at Z 14.6 (upper facet edges)	ISO 2768-mK
16	Recessed panels	0.3 deep, corners R0.8; frame bands 1.2, rails 1.2 along the facet edges; bottom: 2 panels, sides: 3 panels (layout in housing_interface.json)	depth +/-0.03 position +/-0.1
17	Panel texture	90 deg V grooves 0.2 deep (0.4 wide), pitch 0.9, at 45 deg on one grid per face (lines X -/+ v = k x 1.273); land 0.5	depth +/-0.03
18	Transverse grooves	90 deg V, 0.3 deep: head set X 1.5, 2.7, 3.9 (top, bottom, diagonal facets only), tail set X 88, 89.2, 90.3 all round (apex positions)	depth +/-0.03 X +/-0.1
19	Key bezel (bottom)	recess 0.5 deep, 45 deg walls, floor 0.3 beyond the keys (stadium X 15.75 to 35.55, Y +/- 5.8 at the face)	depth +/-0.05
20	Floor RF window	5.1 x 10.8 R1.5 through, X 36.35 to 41.45; POM-C plug of the antenna spacer flush with the panel floor, textured (FK-H-05)	+/-0.05
21	Tail window (bottom)	4.1 x 10.8, 1.0 deep, corners R0.8 / R1.8, chamfer C0.3; X 94.15 to 98.25	+/-0.1
22	Lanyard slot, THRU	stadium 3.6 x 4.6, centre X 95.95; chamfer C0.25 both faces	+/-0.1
23	Tail facets	2.0 x 45 deg on the two vertical tail corners	ISO 2768-mK

NOTES
1 Order: finish the body, then the panels (16) with a flat end mill, then the texture (17) and the grooves (18) with one 90 deg V engraving cutter (tip R <= 0.03), then blast and anodise. Do not deepen the texture: the metal under it is 1 mm at the thinnest spot.
2 The bottom and side views show the panels without the texture lines; the texture covers every panel and stops at the panel wall.
3 Finish: fine glass-bead blast, anodise type II matte black (8-12 um); break the panel and groove edges 0.05. No marking of any kind.
4 The keys sit 0.15 (main key) and 0.30 (side keys, chevron 0.10) inside the bottom-face plane, in the bezel (19); the floor RF window plug and the lid RF insert carry the same texture (FK-H-05).

MAIN BODY (TRAY) - EXTERIOR

Part: FK-H-01 FlashKa_tray.step	SCALE 2:1 (details as marked) SHEET 2/2
FlashKa Keychain v0.7 2026-10-23	Units mm | ISO 2768-mK