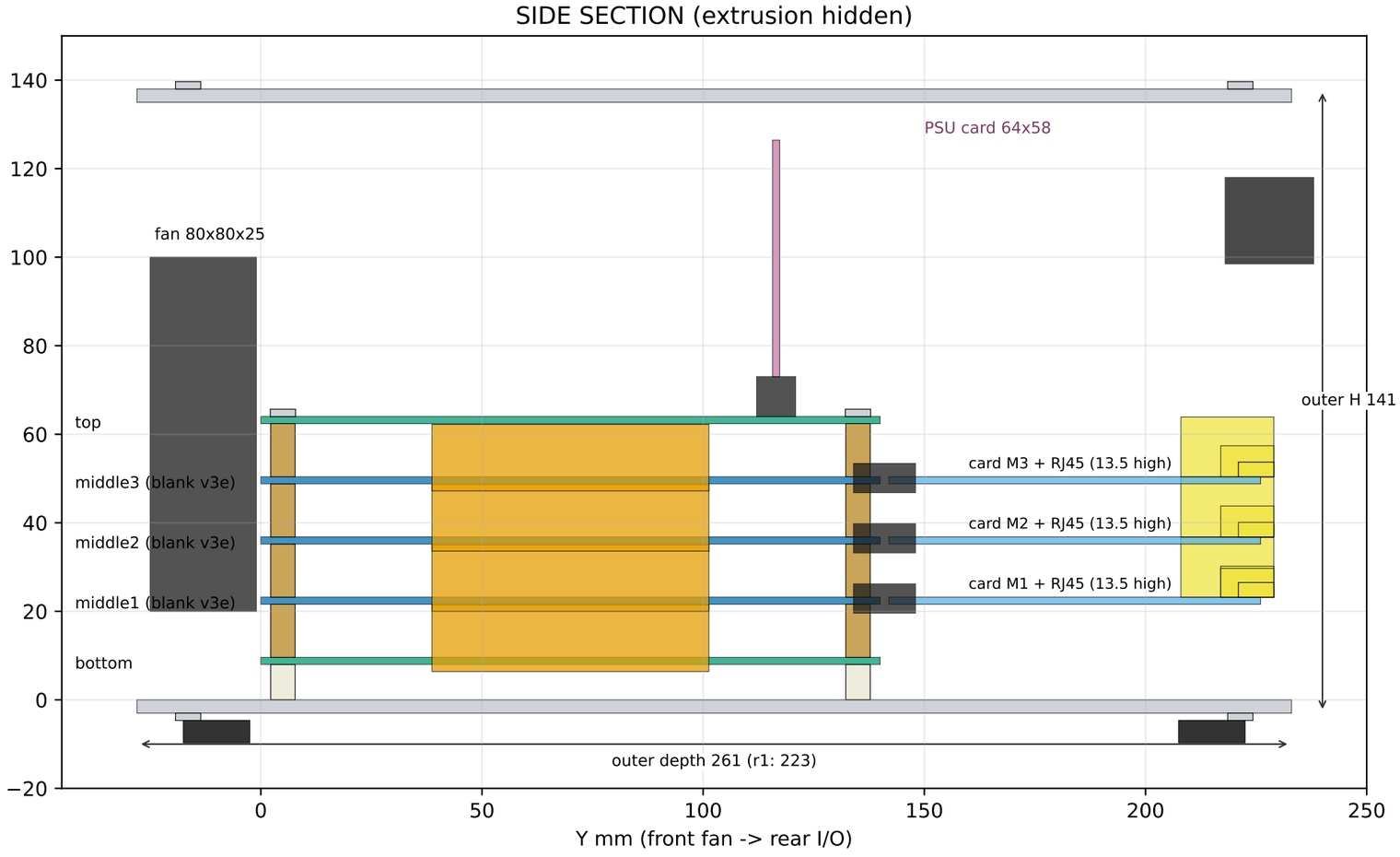
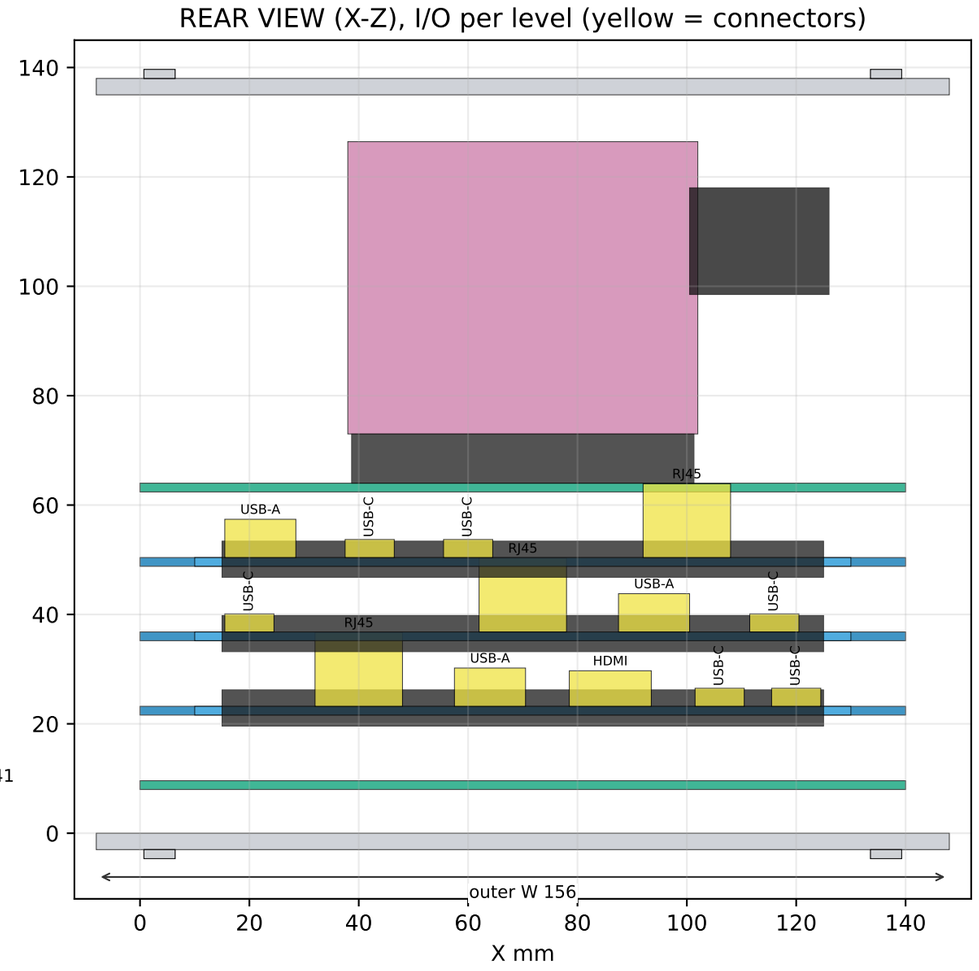
Example enclosure r3: side section (Y-Z) and rear view (X-Z) - one-piece aluminum extrusion case, R25 corners

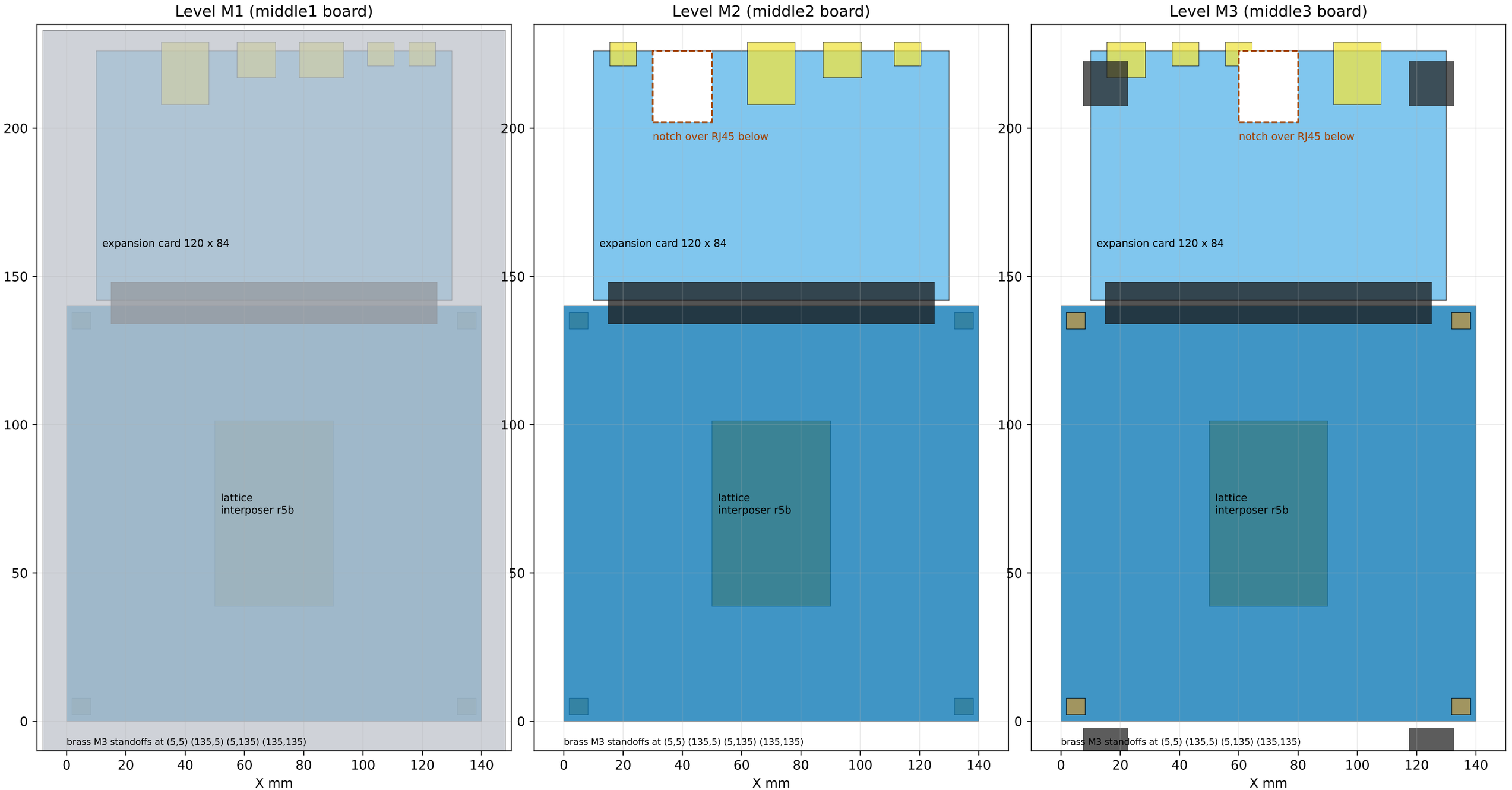




r3 changes vs r2:
- sides + front + back = ONE 6063-T5 aluminum extrusion, wall 3, R25 outside / R22 inside corners
- 4 integral M3 screw ports (D8) in the corners, top + bottom plates screw in (M3x8 ISO7380)
- r2 corner posts and the 4 flat side/front/rear plates removed
- stack, RJ45 card cutouts, notches and standoff fit unchanged from r2
- IEC C14 + fuse moved 5 mm -X (X 100-126.5) to clear the inner fillet
- cutouts (fan D76, rear I/O, IEC, grille) by tube laser or CNC after extrusion

NOTE: an extrusion is outside the FDM / mSLA / laser-cut custom-part rule;
Darrin asked for it explicitly (flagged in CHANGES.md)

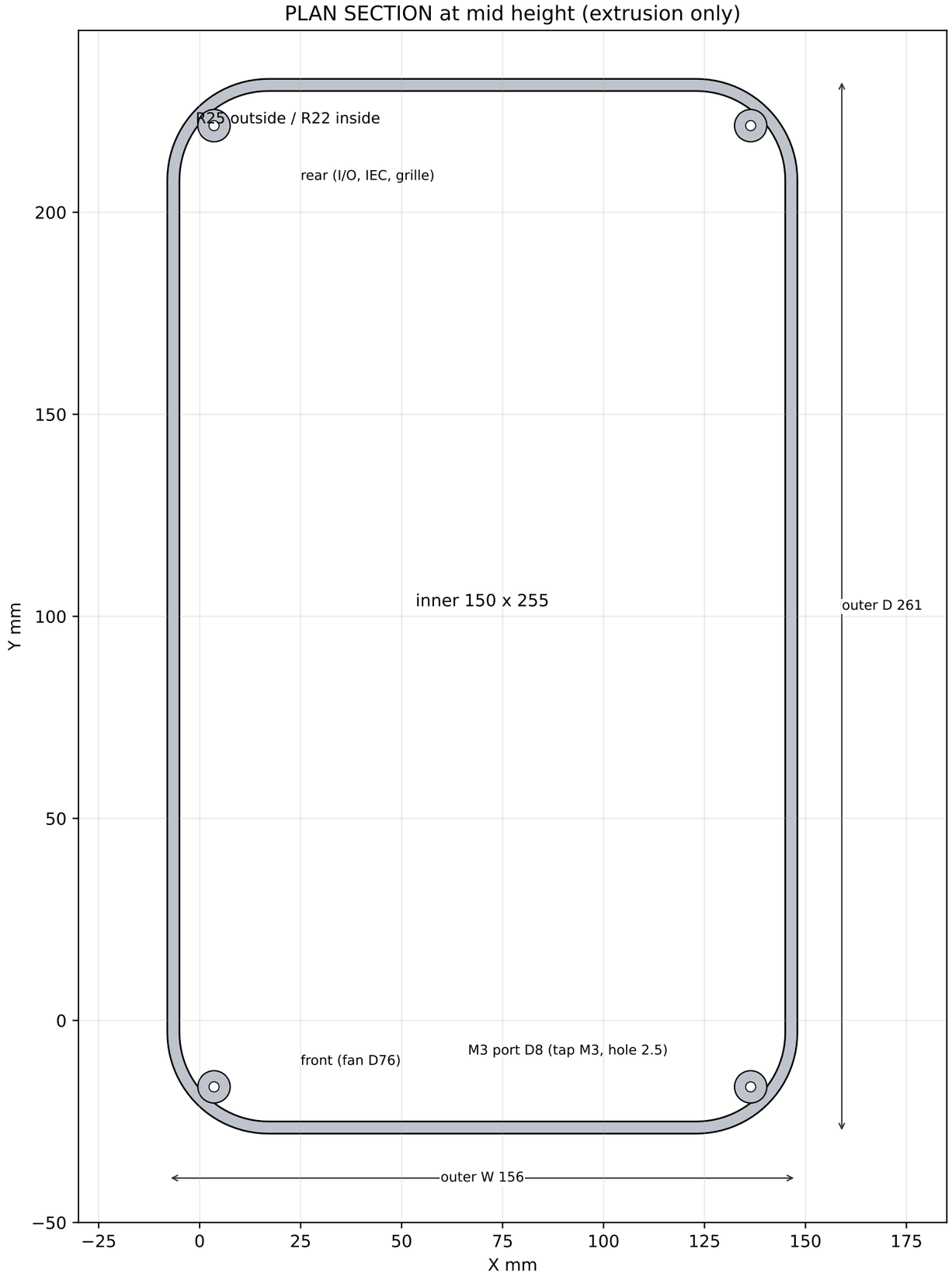
Example enclosure r3: top view per level - board, interposers, corner standoffs, expansion card, RJ45 and notch



Example enclosure r3: parts list (no prices)

part	qty	bbox mm	process
mpc_IEC_C14_fuse_inlet_rear	1	26 x 20 x 19.5	purchased
mpc_board_bottom_OSSO_blank_v3e_outline_140x140x1p6	1	140 x 140 x 1.6	purchased
mpc_board_middle1_OSSO_blank_v3e_outline_140x140x1p6	1	140 x 140 x 1.6	purchased
mpc_board_middle2_OSSO_blank_v3e_outline_140x140x1p6	1	140 x 140 x 1.6	purchased
mpc_board_middle3_OSSO_blank_v3e_outline_140x140x1p6	1	140 x 140 x 1.6	purchased
mpc_board_top_OSSO_blank_v3e_outline_140x140x1p6	1	140 x 140 x 1.6	purchased
mpc_card_edge_straddle_connector_M1	1	110 x 14 x 6.6	purchased
mpc_card_edge_straddle_connector_M2	1	110 x 14 x 6.6	purchased
mpc_card_edge_straddle_connector_M3	1	110 x 14 x 6.6	purchased
mpc_case_EXTRUSION_6063T5_one_piece_sides_front_rear_156x261_R25_wall3	1	156 x 261 x 135.0	extrusion (exception)
mpc_case_bottom_plate_LASERCUT_3_5052_R25	1	156 x 261 x 3.0	laser-cut
mpc_case_top_plate_LASERCUT_3_5052_R25_louvres	1	156 x 261 x 3.0	laser-cut
mpc_conn_HDMI_M1_x86	1	15 x 12 x 6.5	purchased
mpc_conn_RJ45_M1_x40	1	16 x 21 x 13.5	purchased
mpc_conn_RJ45_M2_x70	1	16 x 21 x 13.5	purchased
mpc_conn_RJ45_M3_x100	1	16 x 21 x 13.5	purchased
mpc_conn_USBA_M1_x64	1	13 x 12 x 7.0	purchased
mpc_conn_USBA_M2_x94	1	13 x 12 x 7.0	purchased
mpc_conn_USBA_M3_x22	1	13 x 12 x 7.0	purchased
mpc_conn_USBC_M1_x106	1	9 x 8 x 3.3	purchased
mpc_conn_USBC_M1_x120	1	9 x 8 x 3.3	purchased
mpc_conn_USBC_M2_x116	1	9 x 8 x 3.3	purchased
mpc_conn_USBC_M2_x20	1	9 x 8 x 3.3	purchased
mpc_conn_USBC_M3_x42	1	9 x 8 x 3.3	purchased
mpc_conn_USBC_M3_x60	1	9 x 8 x 3.3	purchased
mpc_expansion_card_M1_120x84x1p6_extends_past_board	1	120 x 84 x 1.6	purchased
mpc_expansion_card_M2_120x84x1p6_extends_past_board	1	120 x 84 x 1.6	purchased
mpc_expansion_card_M3_120x84x1p6_extends_past_board	1	120 x 84 x 1.6	purchased
mpc_fan_80x80x25_intake_front	1	80 x 24 x 80.0	purchased
mpc_foot_rubber_D15x5_M3	4	15 x 15 x 5.0	purchased
mpc_interposer_1_2_lattice_r5b_mSLA	1	40 x 63 x 15.0	mSLA
mpc_interposer_2_3_lattice_r5b_mSLA	1	40 x 63 x 15.0	mSLA
mpc_interposer_3_4_lattice_r5b_mSLA	1	40 x 63 x 15.0	mSLA
mpc_interposer_4_5_lattice_r5b_mSLA	1	40 x 63 x 15.0	mSLA
mpc_psu_card_64x58_card_edge_psu_v1	1	64 x 2 x 53.4	purchased
mpc_psu_socket_EDAC_3p96_on_top_board	1	63 x 9 x 9.0	purchased
mpc_screw_M3x6_ISO7380_top	4	6 x 6 x 1.7	purchased
mpc_screw_M3x8_ISO7380_bottom_plate_to_extrusion_port_0	1	6 x 6 x 1.7	purchased
mpc_screw_M3x8_ISO7380_bottom_plate_to_extrusion_port_1	1	6 x 6 x 1.7	purchased
mpc_screw_M3x8_ISO7380_bottom_plate_to_extrusion_port_2	1	6 x 6 x 1.7	purchased
mpc_screw_M3x8_ISO7380_bottom_plate_to_extrusion_port_3	1	6 x 6 x 1.7	purchased
mpc_screw_M3x8_ISO7380_top_plate_to_extrusion_port_0	1	6 x 6 x 1.7	purchased
mpc_screw_M3x8_ISO7380_top_plate_to_extrusion_port_1	1	6 x 6 x 1.7	purchased
mpc_screw_M3x8_ISO7380_top_plate_to_extrusion_port_2	1	6 x 6 x 1.7	purchased
mpc_screw_M3x8_ISO7380_top_plate_to_extrusion_port_3	1	6 x 6 x 1.7	purchased
mpc_standoff_brass_M3_FF_hex5p5_x12	16	6 x 6 x 12.0	purchased
mpc_standoff_nylon_PA66_M3_hex5p5_x8_base	4	6 x 6 x 8.0	purchased

Example enclosure r3: plan section of the one-piece extrusion profile (real fillets, screw ports)



Profile: 6063-T5, wall 3.0, length 135 (cut to length)
Corners: R25 outside, R22 inside, constant wall
Screw ports: 4 integral bosses D8, merged into the inner fillets,
  tapped M3 x 10 deep at both ends
Top / bottom: laser-cut 3 mm 5052, R25 corners, 4x M3x8 ISO7380
Cutouts after extrusion: tube laser or CNC
Finish: clear or black anodize (TBD)

Custom-part rule: FDM / mSLA / laser-cut only.
The extrusion is an explicit exception requested
for this example enclosure (see CHANGES.md).