INSTALLATION MANUAL

Luxa Sereno 700

Bioclimatic Pergola

PONARC · LUXA SERENO 700

Table of contents

1 · SYSTEM OVERVIEW

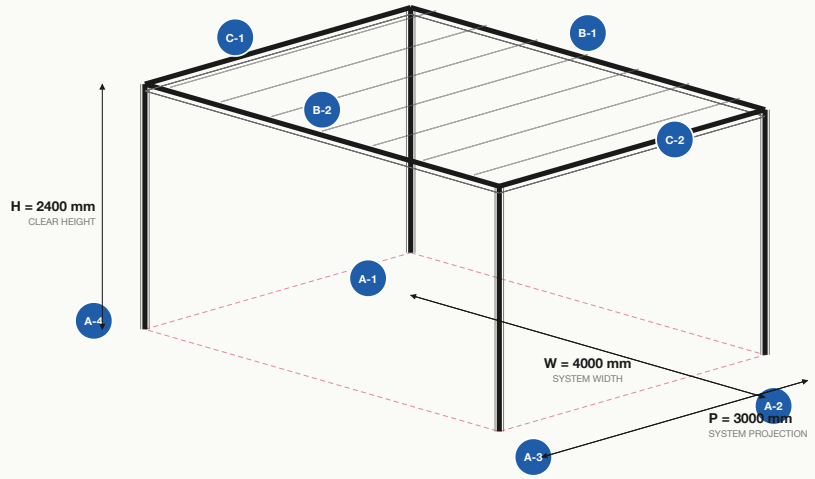
System overview

Standard 4-leg module — A1..A4 columns, B1/B2 long beams, C1/C2 short beams.

PONARC GROUP · ENGINEERING REFERENCE

System Connections — Standard Module

DIAGRAM CODE · **PN-SD-CONN** | SERIES · **LUXASHADE SERENO 700** | CONFIG · **Standard 4-leg**



PROFILE LEGEND — STANDARD MODULE

A	**A-1 · A-2 · A-3 · A-4** PN-CL-120 — Column · 120 × 120 × 2400 mm · qty 4	**Lamels** PN-LM-230 · 13–18 louvres pivoting on PN-LR-100 rails
B	**B-1 · B-2** PN-CB-240 — Long Carrier Beam · spans W = 4000 mm · qty 2	**Foot plate** qty 4 · 220 × 12 mm under each column · M12 anchors
C	**C-1 · C-2** PN-CB-240 — Short Carrier Beam · spans P = 3000 mm · qty 2	**Coverings** PN-CC-90 corners · PN-CP-40 caps · PN-GP-100 gutter

DIAGRAM NO	SERIES	REV
PN-SD-CONN-A Standard config (4-leg single module)	Sereno 700 Bioclimatic Pergola	**01** 2026-04-30
CONFIGURATION Standard / Duo / Linear	PROJECTION Isometric 30°	SCALE ~1:25
STANDARDS EN 1991-1-1/3/4 · EN 13830 · EN 1090-3		

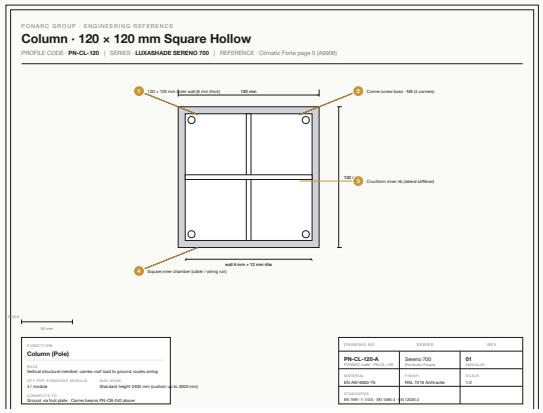
ponarc.com / luxashade.com · system-connections

2 · PROFILES FOR FIRST STEP

Profiles for first step

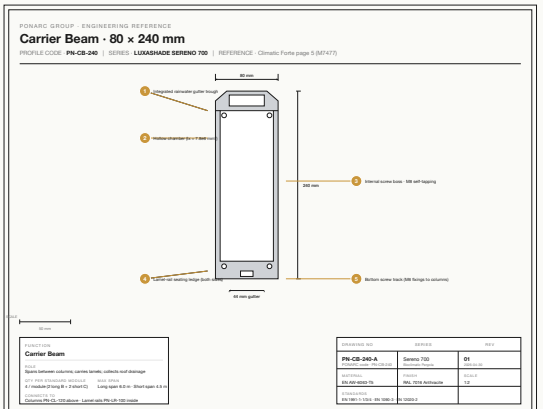
PN-CL-120 120 × 120 mm

Column



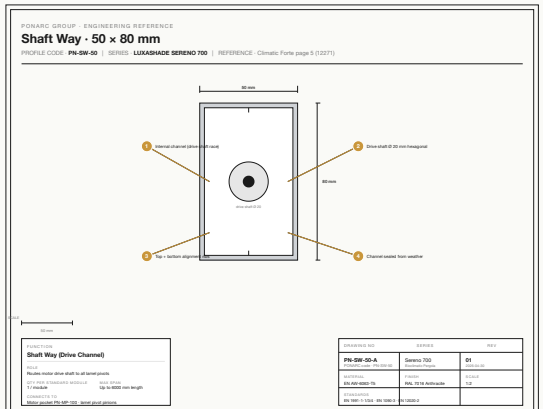
PN-CB-240 80 × 240 mm

Carrier Beam



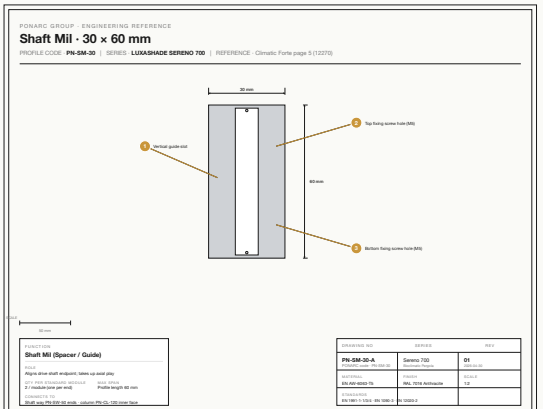
PN-SW-50 50 × 80 mm

Shaft Way



PN-SM-30 30 × 60 mm

Shaft Mil

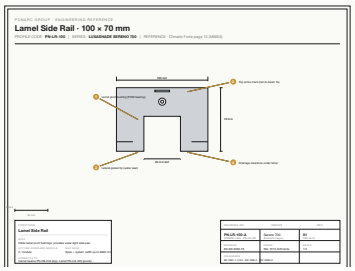


3 · PROFILES FOR SECOND STEP

Profiles for second step

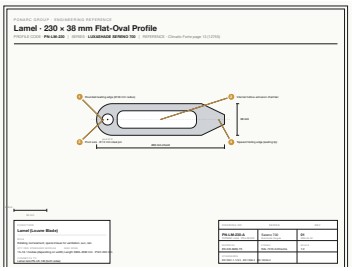
PN-LR-100 100 × 70 mm

Side Rail



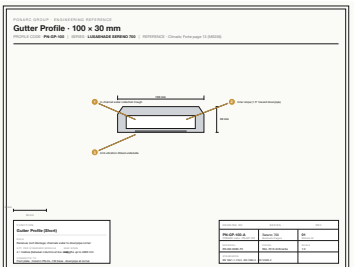
PN-LM-230 230 × 38 mm

Lamel



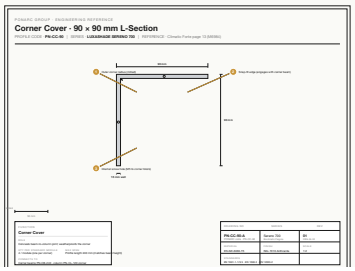
PN-GP-100 100 × 30 mm

Gutter



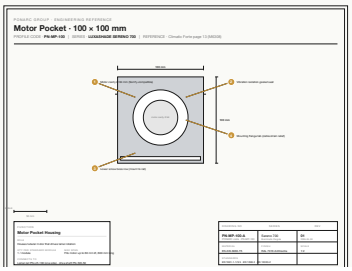
PN-CC-90 90 × 90 mm

Corner Cover



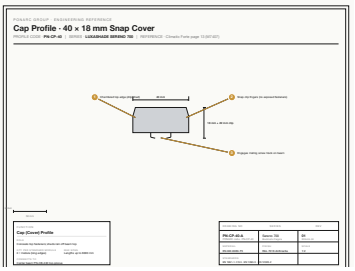
PN-MP-100 100 × 100 mm

Motor Pocket



PN-CP-40 40 × 18 mm

Cap Profile



4 · TOOLS AND MATERIALS REQUIRED

Tools and materials required

All M-rated stainless fasteners are supplied in the system kit. Adhesives (neutral-cure silicone, PTFE grease) and consumables are not included.

D1 45–60 min
Tape, chalk line, hammer drill (M12), torque wrench, spirit level, shim plates

D2 30 min
13 mm socket, ratchet, plumb / laser level, cable pull tape

D3 20 min
Two-person lift, silicone gun (neutral cure), 13 mm socket, M8 ratchet

D4 20 min
Same as D3

D5 15 min
M6 hex driver, silicone gun, mallet

D6 15 min
Same as D5 + calibrated torque wrench

D7 30 min
PTFE grease, M5 hex, lamel handling jig

D8 60 min
M5/M6 hex, electrical multimeter, Somfy programming remote, cap-profile mallet

Mark the four corner positions per the site survey, then drill and install M12 chemical anchors. Set each 220 × 220 × 12 mm anchor plate level with shims; verify all four are coplanar within ± 2 mm.

SUB-STEPS

1. Lay out the four corner positions per the site survey using a chalk line and tape.
2. Verify the W × P rectangle: measure both diagonals — they must agree within 3 mm.
3. Drill four Ø 14 mm holes for M12 chemical anchors at each corner mark.
4. Inject HIT-HY 200 (or equivalent) epoxy into each hole; insert M12 stainless threaded studs.
5. Wait the cure time printed on the cartridge (typ. 30 min @ 20 °C).
6. Bolt the 220 × 220 × 12 mm anchor plate to each stud; level with shims; torque to 60 Nm.
7. Verify the four anchor plates are coplanar within ± 2 mm using a laser level or string line.

SPECIFICATIONS

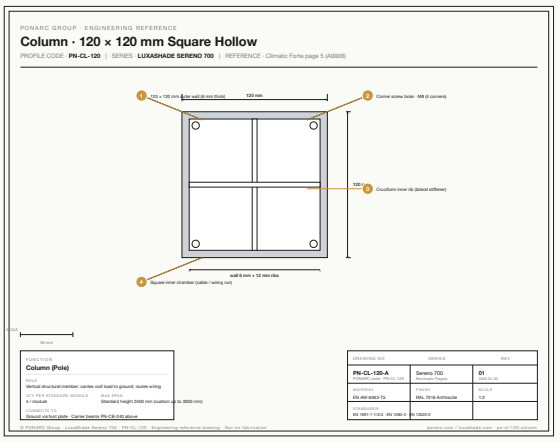
ANCHOR TYPE	M12 chemical anchor (e.g. Hilti HIT-HY 200 + HAS-V)
HOLE Ø	14 mm × 90 mm depth
CURE TIME	30 min @ 20 °C (consult cartridge)
PLATE SIZE	220 × 220 × 12 mm anodised aluminium
TORQUE	60 Nm
TOLERANCE	Diagonals ± 3 mm · Coplanar ± 2 mm

> **TIP**
> Diagonals must match within 3 mm — measure W × P and the two diagonals before drilling. Skipping this check is the #1 cause of misaligned columns later.

> **WATCH OUT**
> — Do not anchor into expansion-joint zones or within 100 mm of slab edges.
> — Substrate must be C25/30 concrete minimum. Lower-grade concrete requires longer anchors and a structural review.

Walk each PN-CL-120 column up onto its anchor plate and bolt to the foot plate with the supplied M12 stainless bolts. Wiring for the motor and optional LED runs through the hollow column at this stage — pull cables before bolting.

PN-CL-120



SUB-STEPS

1. Pre-assemble the column: insert motor (if applicable) into PN-CL-120 chamber via the lower access.
2. Pull the motor power cable + LED feed cable through the column to the top.
3. Lift the column upright onto its anchor plate — keep cables clear of the foot bolt holes.
4. Bolt the column foot to the anchor plate with 4× M12 stainless bolts.
5. Plumb the column with a spirit level; adjust shims at the foot if needed.
6. Torque the M12 foot bolts to 60 Nm in a cross pattern.
7. Repeat for all four columns. Re-check plumb after all four are stood.

SPECIFICATIONS

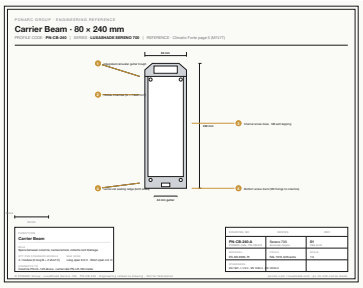
COLUMN PROFILE	PN-CL-120 — 120 × 120 × 6 mm hollow extrusion
STANDARD HEIGHT	2400 mm
CUSTOM HEIGHTS	Up to 3000 mm (consult dealer)
FOOT BOLTS	4× M12 × 50 mm A2-70 stainless · 60 Nm
CABLE RUN	Internal · 2× Ø 25 mm cable conduit

> TIP
>
> A 120 mm column at 2400 mm weighs ~22 kg — manageable for two people. For columns above 2700 mm or with motor pre-installed, use lifting straps and a third hand.

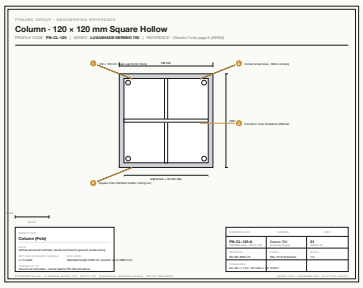
> WATCH OUT
>
> — Plumb every column with a 600 mm spirit level on TWO orthogonal faces — relying on one face leaves a tilt invisible from the other side.
>
> — If a column is more than 5 mm out of plumb after shimming, do not proceed — inspect anchor plate level.

Lift the long PN-CB-240 carrier beam (B-1) onto the two front column tops. The integrated locating pins on the column heads engage with mating bores in the beam — slide it down until you feel the pins seat, then bolt through the hidden screw track from underneath.

PN-CB-240



PN-CL-120



SUB-STEPS

1. Position the long PN-CB-240 (B-1) horizontally near the front column pair, gutter trough side facing up.
2. Apply a continuous 6 mm bead of neutral-cure silicone along the top of each front column.
3. With two installers, lift the beam onto both column tops simultaneously.
4. Engage the locating pins in the column heads with the mating bores in the beam underside.
5. Lower until the beam fully seats on the column ledges (no visible gap).
6. Drive 4× M8 × 60 mm self-tapping fixings up through the hidden screw track from underneath.
7. Torque the M8 fixings to 22 Nm in a cross pattern (alternate diagonally, not sequentially).

SPECIFICATIONS

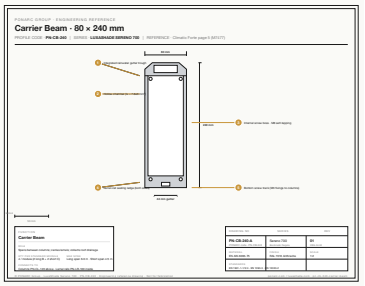
BEAM PROFILE	PN-CB-240 — 80 × 240 × 6 mm hollow extrusion with integrated gutter
LENGTH	Cut to W (system width) + 2× column thickness
LOCATING PINS	2× Ø 12 mm hardened steel per column
FIXINGS	4× M8 × 60 mm A2-70 self-tapping · 22 Nm
SEALANT	Neutral-cure silicone, 6 mm continuous bead

> TIP
>
> Apply a continuous bead of neutral-cure silicone along the column head before lowering the beam — this is the watertight seal between column chamber and beam interior.

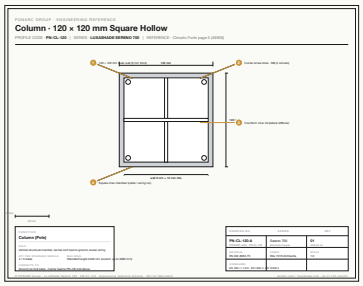
> WATCH OUT
>
> — Never lift the long carrier beam alone — its 4 m length is unwieldy and over-stressing the locating pins on impact bends them.
>
> — Use neutral-cure silicone only — acetic-cure (vinegar smell) attacks the powder coat and aluminium passivation.

Mirror step D3 with the second long PN-CB-240 (B-2) on the back column pair. Once both long beams are seated, the front-back diagonal must be within ± 2 mm — measure before locking the bolts.

PN-CB-240



PN-CL-120



SUB-STEPS

1. Mirror step D3 on the back column pair with the second long PN-CB-240 (B-2).
2. After both long beams are seated, measure top-corner to top-corner diagonals.
3. If diagonals exceed ± 2 mm, loosen one beam's M8 fixings, re-shim, re-tighten.
4. Once diagonals are within tolerance, fully torque all 8 fixings to 22 Nm.

SPECIFICATIONS

BEAM PROFILE	PN-CB-240 — same as D3
DIAGONALS	Front-back tolerance ± 2 mm
FIXINGS	Same as D3 — 4× M8 × 60 mm @ 22 Nm

TIP

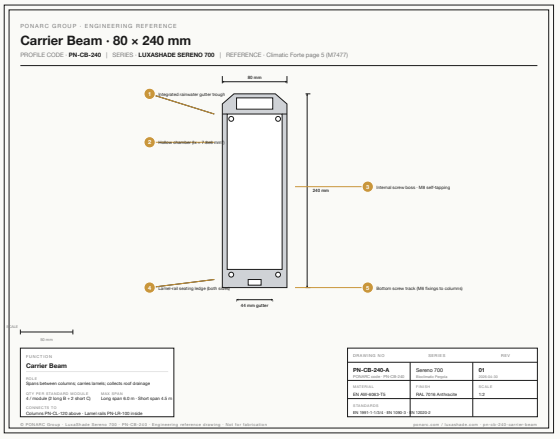
If the diagonal is off by more than 2 mm, do not force the beam — loosen the column foot bolts and shim the offending corner. Forcing creates locked-in stress that pre-loads the welds and shortens service life.

WATCH OUT

— DO NOT proceed to D5 with diagonals out of tolerance. Mis-aligned long beams transmit stress through the lamel rails and cause binding lamels later.

Slot the short PN-CB-240 (C-1) between the left front and back columns at the top. The short beam ends are CNC-mitred to engage the screw track of the long beams — slide along the long-beam channel until the mitre seats, then drive the M6 fixings through.

PN-CB-240



SUB-STEPS

1. Apply a thin film (not a thick bead) of neutral-cure silicone to the CNC-mitred end faces of the short beam.
2. Slide the short C-1 beam horizontally between the left ends of B-1 and B-2.
3. Engage the mitred ends with the screw track of the long beams; tap gently with a rubber mallet to seat.
4. Drive 2× M6 × 40 mm hex fixings on each end (4 total) through the corner blocks.
5. Torque to 8 Nm.
6. Wipe excess silicone before it cures (within 5 minutes).

SPECIFICATIONS

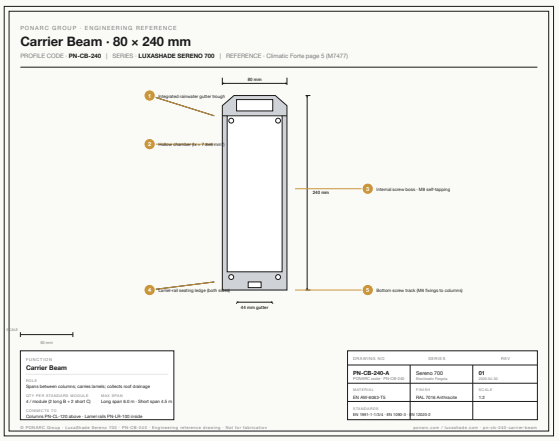
BEAM PROFILE	PN-CB-240 — 80 × 240 × 6 mm
LENGTH	Cut to P (system projection) - 2× beam width
FIXINGS	4× M6 × 40 mm hex · 8 Nm
SEALANT	Neutral-cure silicone, thin film on mitre face only

> TIP
>
> Pre-apply silicone to the mitre face — a thin film, not a thick bead. Excess silicone squeezed into the channel will harden and prevent removal during service.

> WATCH OUT
>
> — Never use force to seat the short beam — tapping with a rubber mallet is acceptable, but if it won't slide, the long-beam alignment is off (return to D4).
>
> — Excess silicone in the screw track will harden and prevent dis-assembly during service. Wipe immediately.

Mirror step D5 with the second short PN-CB-240 (C-2) on the right side. Once installed, the rectangular roof frame is complete and self-supporting — torque all M6 and M8 connections to the values printed on the assembly card.

PN-CB-240



SUB-STEPS

1. Mirror D5 with the C-2 short beam on the right side.
2. Once the rectangular roof frame is closed, walk the perimeter and visually inspect every joint.
3. Final-torque all M6 fixings to 8 Nm and all M8 fixings to 22 Nm using a calibrated wrench.
4. Re-check column plumb on all four — closing the frame can pull a column slightly off plumb.

SPECIFICATIONS

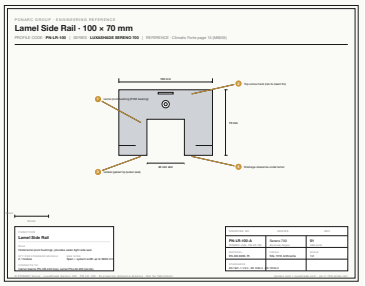
ALL M6	8 Nm
ALL M8	22 Nm
ALL M12	60 Nm (column foot anchors only)
WRENCH	Calibrated torque wrench, ± 4% accuracy minimum

> TIP
>
> Torque values for the Sereno 700: M6 — 8 Nm, M8 — 22 Nm, M12 (foot anchors) — 60 Nm. Check with a calibrated torque wrench, not by feel.

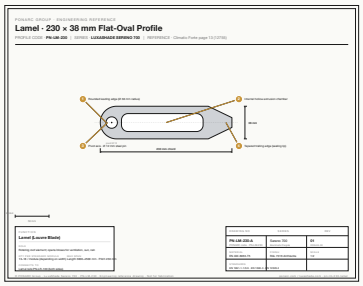
> WATCH OUT
>
> — Hand-tightening followed by 'feel' is not acceptable. PONARC structural calculations assume the specified torque values; under-torque causes joint loosening; over-torque strips threads.

Mount the PN-LR-100 side rails inside the long beams (one per side). Drop the first 8 PN-LM-230 lamels into their pivot bushings, working outward from the motor side. Each lamel must rotate freely through 115° before locking the next one in.

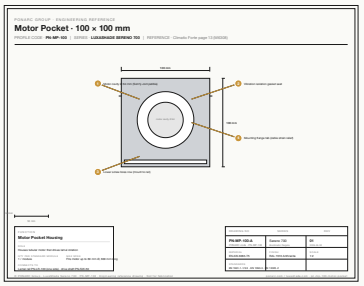
PN-LR-100



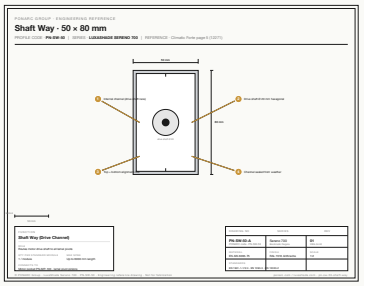
PN-LM-230



PN-MP-100



PN-SW-50



SUB-STEPS

1. Mount the PN-LR-100 side rail to the inside face of B-1 (front long beam) using M5 fixings @ 250 mm centres.
2. Mount the mirror PN-LR-100 to B-2 (back long beam).
3. Mount the PN-MP-100 motor pocket to one end of either rail (typically the side closest to the building).
4. Insert the PN-SW-50 drive shaft into the motor pocket and seat it through the lamel pivot positions.
5. Lubricate every POM pivot bushing with PTFE grease before inserting the lamels.
6. Drop the first 8 PN-LM-230 lamels into their pivot bushings, working outward from the motor.
7. After each lamel: rotate it through its full 0°–115° range BEFORE inserting the next.

SPECIFICATIONS

SIDE RAIL	PN-LR-100 · M5 fixings @ 250 mm centres
MOTOR POCKET	PN-MP-100 · houses Somfy or comparable tubular motor
DRIVE SHAFT	PN-SW-50 · Ø 20 mm hexagonal
LAMEL PITCH	230 mm centre-to-centre
BUSHING LUBE	PTFE grease only (e.g. Loctite LB 8104) — never silicone or oil

TIP

Test each lamel through its full rotation BEFORE installing the next one. A binding lamel mid-array means dismantling everything to its right — costly. Lubricate POM bushings with PTFE grease (never silicone or oil).

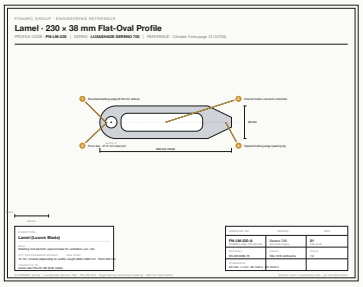
WATCH OUT

— Test EVERY lamel through its full rotation before installing the next. A binding lamel mid-array means dis-assembling everything to its right.

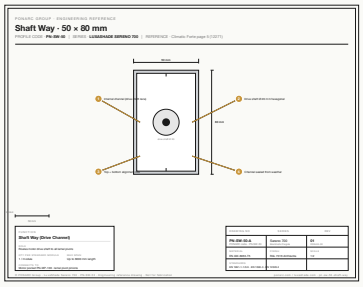
— Silicone or petroleum-based oil contaminates POM bearings and causes them to swell, locking the lamels permanently.

Install the remaining lamels (count depends on module width — 13 to 18 total). Engage the drive shaft (PN-SW-50) into each lamel pivot pinion. Connect the motor power to the column wiring, run the limit-switch calibration cycle, and seat the cap profiles (PN-CP-40) on the long beams to conceal all fixings.

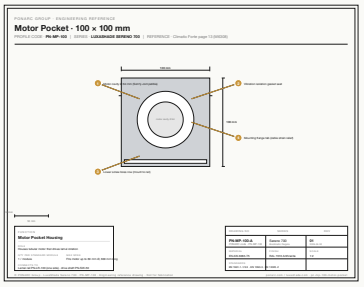
PN-LM-230



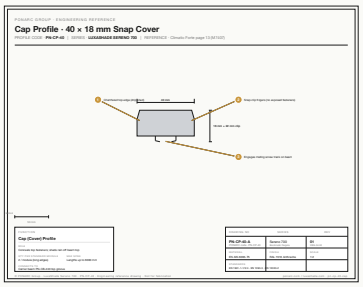
PN-SW-50



PN-MP-100



PN-CP-40



SUB-STEPS

1. Insert the remaining lamels (5–10 more depending on system width) — 13 to 18 total per module.
2. Engage each lamel's pivot pinion with the drive shaft before locking the side seal.
3. Verify the entire array can rotate uniformly by hand — there should be no binding anywhere.
4. Connect the motor power leads to the column wiring; check polarity per the wiring schematic.
5. Run the Somfy limit-switch calibration cycle: closed (0°) → open (115°) → closed.
6. Snap the PN-CP-40 cap profile onto the long-beam top groove to conceal all fixings.
7. Final test: cycle the lamels three times via remote; listen for binding or motor strain.

SPECIFICATIONS

TOTAL LAMELS	13–18 (depends on width: 3 m → 13, 6 m → 18)
CAP PROFILE	PN-CP-40 · snap-fit, no exposed fasteners
CALIBRATION	Somfy: hold prog button on motor, run via remote
MOTOR	Somfy iO 50 Nm or RTS — programmable via TaHoma
CYCLE TEST	3× full open-close before declaring complete

> TIP
>
> The Somfy motor's calibration cycle pairs the closed and open positions — run it AFTER all lamels are installed and freely rotating. Re-running calibration is fine; running with one lamel binding can damage the motor gearbox.

> WATCH OUT
>
> — Re-running calibration is fine. Running the motor with a binding lamel can damage the planetary gearbox — listen and stop immediately if you hear strain.

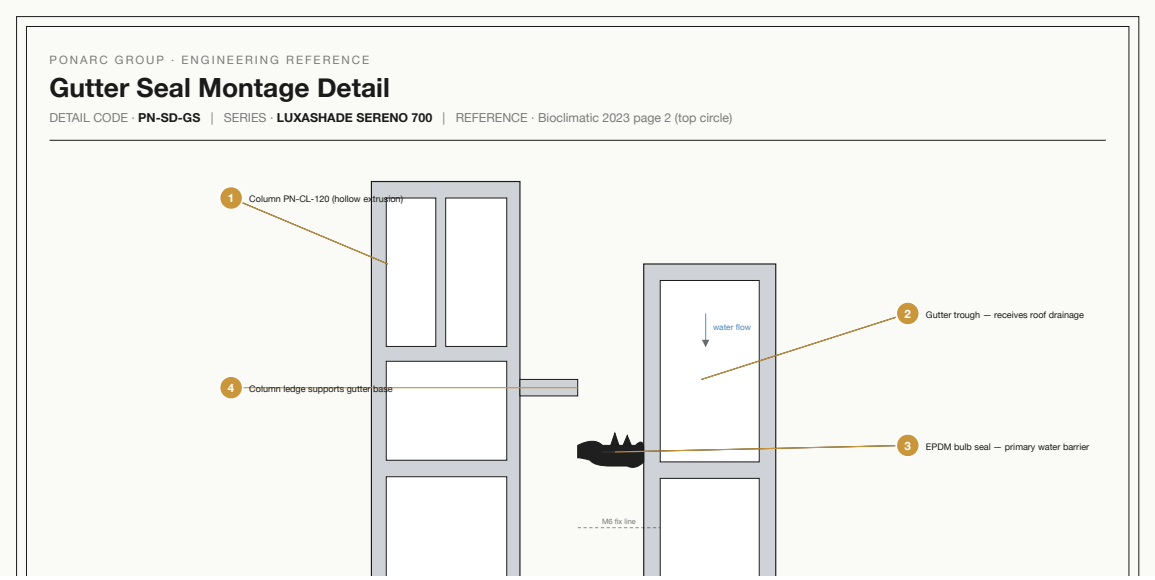
— Cap profile is a one-way snap: planning to remove it later for service requires patience and the right tool — never pry with a flathead screwdriver against the powder coat.

6 · SEAL DETAILS

Seal details

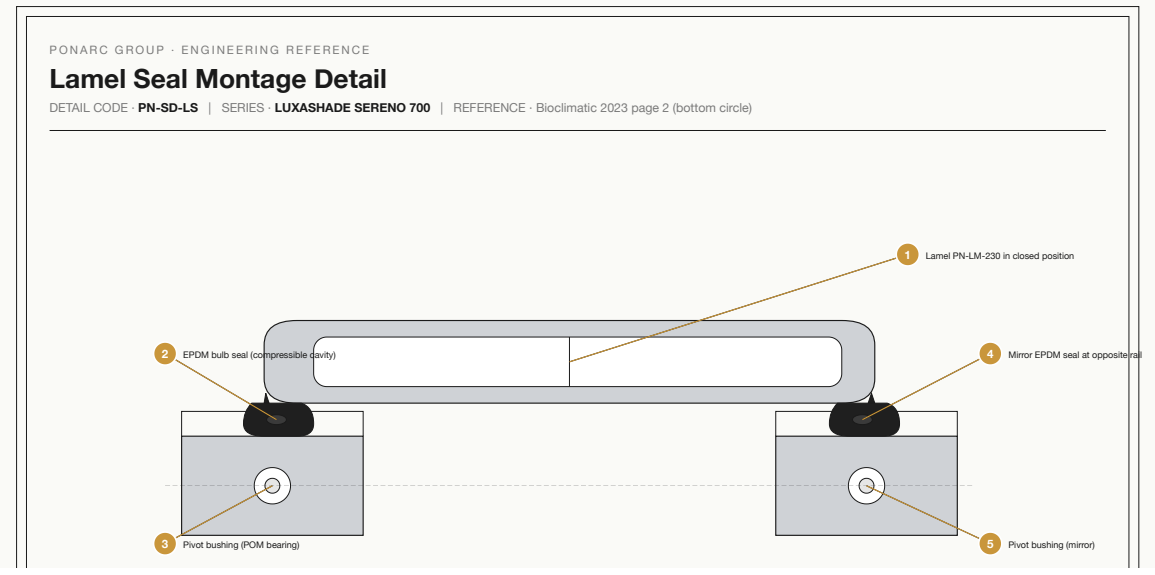
PN-SD-GS

Gutter seal



PN-SD-LS

Lamel seal



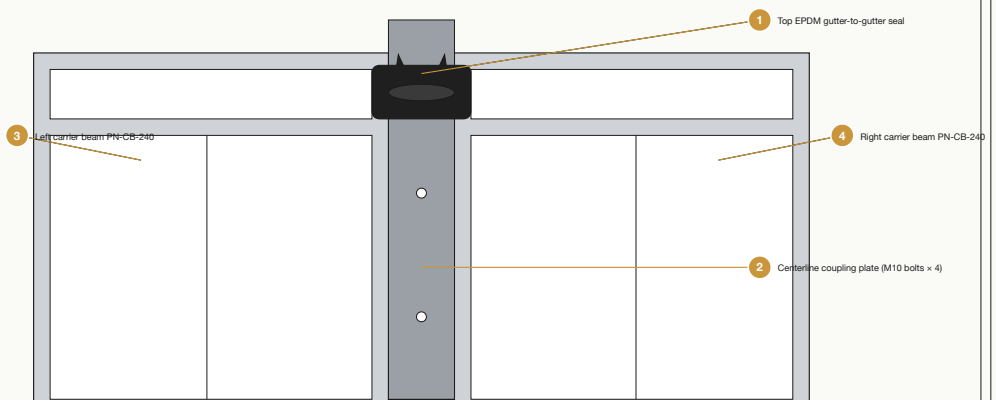
PN-SD-MC

Middle connection

PONARC GROUP · ENGINEERING REFERENCE

Middle Connection Seal Detail

DETAIL CODE · **PN-SD-MC** | SERIES · **LUXASHADE SERENO 700** | REFERENCE · Climatic Forte page 8 (D5 detail)



7 · CONFIGURATION MATRIX

Configuration matrix

Six standard module sizes. Single-span limit 4.0 m. Larger areas: side-by-side or L-coupled, sharing intermediate columns.

SIZE (W × P)	AREA	CONFIGURATION
3 × 3 m	9 m²	Single — 4 columns
3 × 4 m	12 m²	Single — 4 columns
3 × 5 m	15 m²	Single — 4 columns
4 × 4 m	16 m²	Single — 4 columns
4 × 5 m	20 m²	Single — 4 columns
4 × 6 m	24 m²	Single — 4 columns

MAXIMUM SINGLE-SPAN

4.0 m. Larger areas: side-by-side or L-coupled with shared intermediate columns.

8 · TECHNICAL SPECIFICATIONS

Technical specifications

MATERIAL	EN AW-6063-T5 aluminium · 98% recyclable
SURFACE FINISH	TIGER Coatings powder coat · any RAL colour
DEFAULT COLOUR	RAL 7016 anthracite grey
LOUVRE ROTATION	Up to 115°
MAXIMUM SINGLE-SPAN	4.0 m
SNOW LOAD	150 kg/m² (EN 1991-1-3)
WIND LOAD	Tested per EN 1991-1-4
DRAINAGE	Concealed in carrier beams + columns
MOTOR	Somfy iO 50 Nm or RTS
SMART HOME	Somfy TaHoma · Alexa · Google · KNX
IP RATING (MOTOR + ELECTRONICS)	IP44
SERVICE LIFE	≥ 25 years (frame and finish)

9 · CARE & MAINTENANCE

Care & maintenance

The Luxa Sereno 700 requires minimal maintenance. Clean the aluminium frame and louvres 2–3 times per year with mild soap and water. Clear drainage channels of leaves before autumn. Lubricate POM pivot bushings annually with PTFE grease. The TIGER Coatings powder coat retains colour for 25+ years without repainting.

Warranty

10-year structural warranty on aluminium frame and connections. 5-year warranty on TIGER Coatings powder coat. 5-year warranty on motorised drive system. Extended warranty available on registration. Valid only when installed per this manual.

Contact

PONARC Group · ponarc.com / luxashade.com · For technical assistance, contact your authorised PONARC dealer or write to support@ponarc.com