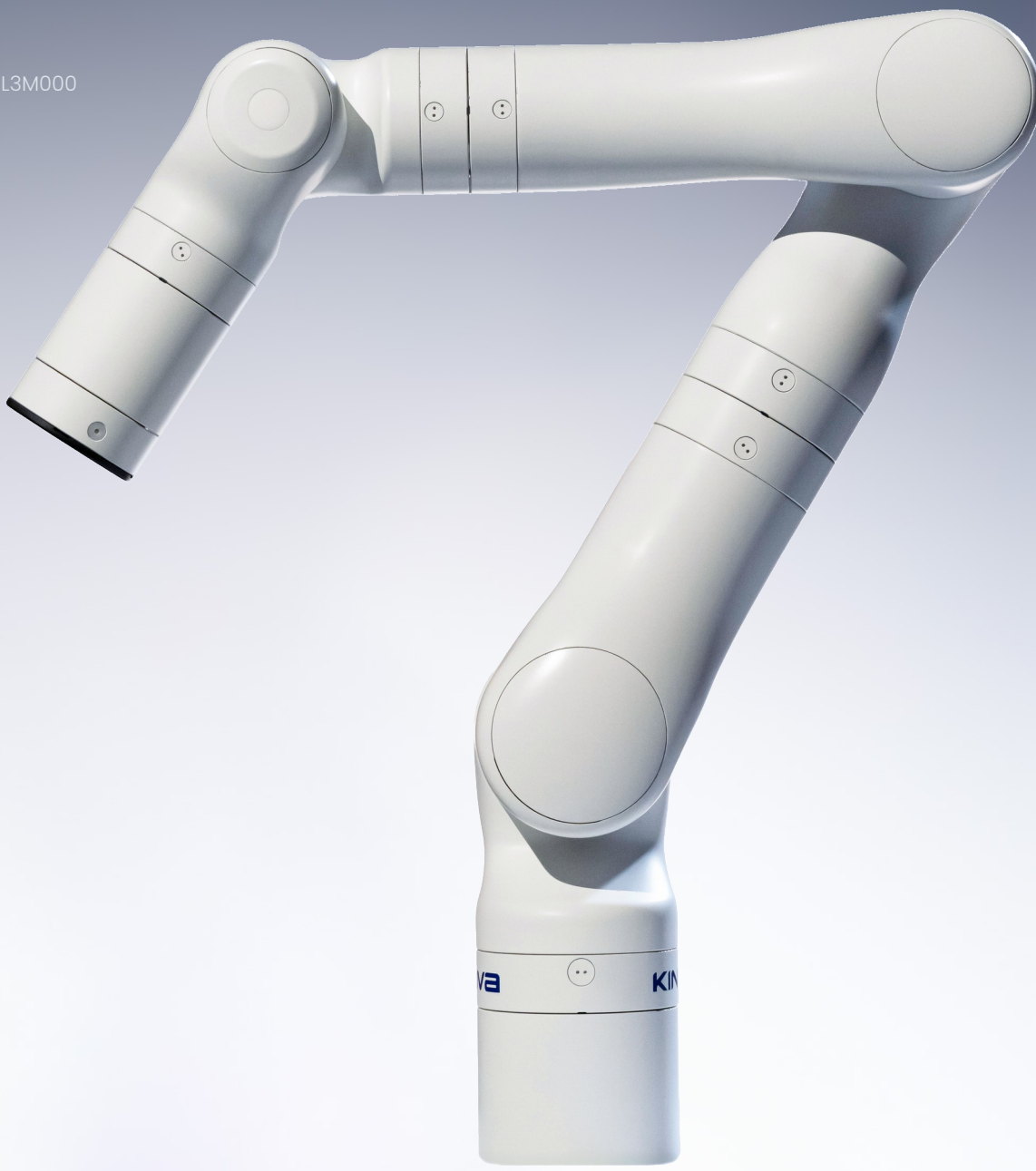
KIMA.

Built for **Medtech**.

TECHNICAL PRODUCT SPECIFICATIONS

KIMA Medical Robotic Arm — L3M000



TPS-L3M000-9A0 | Revision 01, 2025-11-21

KINOVA

PHYSICAL

Parameter	Value
Reach (J2 to J6)	750 mm
Total arm length	1206 mm
Weight	Approximately 12.6 kg
Maximum payload	3 kg [2]
Number of axes	7
Ingress Protection rating (IP)	IP54 [3].
Actuator model — J1/J2	ACT090
Actuator model — J3/J4	ACT080
Actuator model — J5/J6/J7	ACT065
Installation orientation	Any

POWER

Parameter	Value
Operating voltage range	22 to 26 VDC, 24 VDC nominal | 46 to 50 VDC, 48 VDC nominal
Safe operating voltage range	20 to 55 VDC
Maximum DC current	20 A

PERFORMANCE

Parameter	Value
Range of motion — J1/J3/J5/J7	± 360°
Range of motion — J2	± 114°
Range of motion — J4	± 139°
Range of motion — J6	± 105°
Mechanical brake	All actuators
Functional safety	PLd
Torque sensor	All actuators (PLd)
Maximum speed	500 mm/s ·
Stopping distance 50 mm/s — SS1/SS2	< 1 mm ·
Stopping distance 50 mm/s — STO	< 3 mm ·
Stopping distance 500 mm/s — SS1/SS2	< 11 mm ·
Stopping distance 500 mm/s — STO	< 35 mm ·
ISO 9283 Repeatability	0.1 mm ·

Parameter	Value
Accuracy (calibrated)	1 mm ·
Static compliance	< 0.1 mm/N ·
Motion resolution	0.1 mm ·
Sound level	< 65 dBA @ 1 m ·
Operating temperature range	5 to 35 °C
Operating pressure range	70 to 106 kPa (0 to 3000 m asl)
Operating humidity (non-condensing)	10 to 85% @ 22 °C
Transportation and storage temperature	-29 to 70 °C

COMMUNICATION

Parameter	Value
Communication frequency	1 or 4 kHz
Communication protocol	EtherCAT® / FSoE® | CiA 402 Drive Profile | Safety Drive Profile (ETG.6100)
Modes of operation	csp, csv , cst
Joint safety monitoring functions	Safe Operating Stop | Safe Brake Test | Safely-limited Position | Safely-limited Speed | Safely-limited Torque
Joint safety stopping functions	Safe Torque Off (STO) | Safe Stop 1 (SS1) | Safe Stop 2 (SS2)

INTERFACES

Parameter	Value
Control communication bus	EtherCAT® 100 Mbps
Digital inputs	2 × Safe Torque Off (STO) | 2 × Emergency Brake Release enable
Emergency Brake Release	Buttons at 6th joint — releases brakes of J1 , J2 , J3 , J4
Passthrough lines	4 × differential pairs: 1 Gbps or 2 × 100 Mbps (EtherCAT®/Ethernet) | 2 × STO | 2 × general purpose digital signals (24 V, 200 mA)
Base mechanical interface	Diameter 108 mm | 4 × M8 threaded holes | 2 × dowel holes 5 mm
Base electrical interface	Power | EtherCAT | I/Os | Passthrough — connector: 8D0C23F53PN
Tool interface — mechanical	Cylindrical mating surface with radial mountings
Tool interface — electrical	Power | EtherCAT | I/Os | Passthrough — connector: TFM-116-02-S-D-WT

STANDARDS & COMPLIANCE

Parameter	Value
Targeted field	Medical (includes operating room)
Applicable standards	RoHS | WEEE | REACH | Proposition 65 | EAR99 | TSCA | IEC 60601-1 | IEC 80601-2-77 | IEC 62304 | ISO 13849-1 | IEC 81001-5-1 | MDR EU 2017/745

[1] All specifications are based on design estimations.

[2] Maximum payload for worst-case conditions (maximum reach and speed).

[3] IP rating achieved when robot is mounted on a stand with a tool attached, per ICD.

Based on requirements or extrapolations from current design; no design estimation yet.

Specification not developed in Alpha prototype.

Specification not tested in Alpha prototype.

All communications addressed directly to the actuators.

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