Specification of MiroComponents and Sensors

MiroCorp

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1 Mounting Components

This section covers Blueprints, Properties and Models of existing MiroComponents.

Blueprint: Shows a drawing of the component template including preconfigured mounting points.

Properties: Descriptive name and material properties.

Models: Table with different variations with unique measurements based on the Blueprint. All lengths are in cm.

1.1 MC0XX

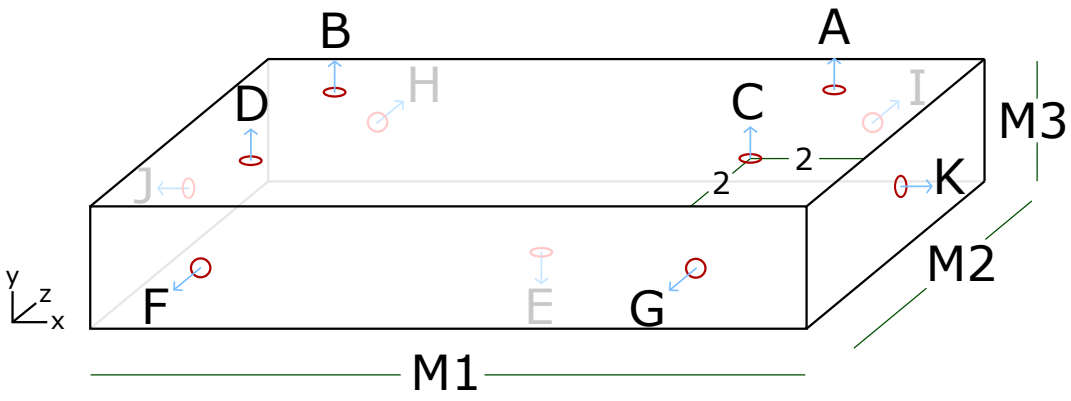

Figure 1: Blueprint MC0XX

Table 1: Properties MC0XX

Name	Mounting Plate
Material	ABS Plastic
Density	$950 kg/m^3$

Table 2: Models MC0XX

Model nr	M1	M2	M3	Model nr	M1	M2	M3
MC011	8	8	2	MC041	8	20	2
MC012	12	8	2	MC042	12	20	2
MC013	16	8	2	MC043	16	20	2
MC014	20	8	2	MC044	20	20	2
MC015	24	8	2	MC045	24	20	2
MC021	8	12	2	MC051	8	24	2
MC022	12	12	2	MC052	12	24	2
MC023	16	12	2	MC053	16	24	2
MC024	20	12	2	MC054	20	24	2
MC025	24	12	2	MC055	24	24	2
MC031	8	16	2	MC091	8	8	6
MC032	12	16	2	MC092	12	12	6
MC033	16	16	2	MC093	16	16	6
MC034	20	16	2	MC094	20	20	6
MC035	24	16	2	MC095	24	24	6

1.2 MC1XX

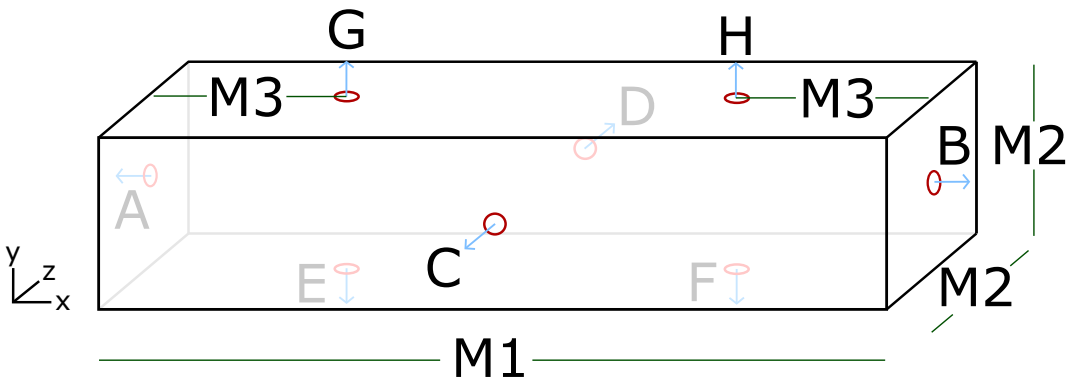

Figure 2: Blueprint MC1XX

Table 3: Properties MC1XX

Name	Solid bar
Material	Aluminium
Density	$2700 kg/m^3$

Table 4: Models MC1XX

Model nr	M1	M2	M3	Model nr	M1	M2	M3
MC111	8	2	2	MC131	50	6	8
MC112	12	2	2	MC132	75	6	8
MC113	16	2	2	MC133	100	6	8
MC114	20	2	2	MC134	125	6	8
MC115	24	2	2	MC135	150	6	8
MC121	16	4	4	MC141	100	8	12
MC122	20	4	4	MC142	150	8	12
MC123	24	4	4	MC143	200	8	12
MC124	36	4	4	MC144	250	8	12
MC125	48	4	4	MC145	300	8	126

1.3 MC2XX

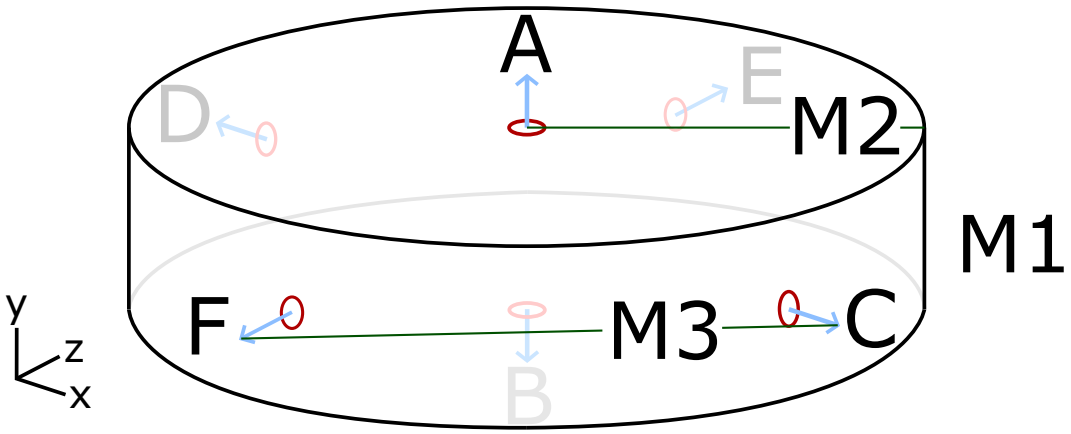

Figure 3: Blueprint MC2XX

Table 5: Properties MC2XX

Name	Mounting puck
Material	ABS Plastic
Density	$950 kg/m^3$

Table 6: Models MC2XX

Model nr	M1	M2	M3	Model nr	M1	M2	M3
MC211	2.5	1	2.83	MC241	2	1.8	4
MC212	5	2	2.83	MC242	2	4.7	8
MC213	8	2	2.83	MC243	2	7.5	12
MC214	12	2	2.83	MC244	2	10.3	16
MC215	16	2	2.83	MC245	2	13.1	20
MC221	2.5	2	2.83	MC251	4	1.8	4
MC222	5	2	4.25	MC252	4	4.7	8
MC223	8	2	4.25	MC253	4	7.5	12
MC224	12	2	4.25	MC254	4	10.3	16
MC225	16	2	4.25	MC255	4	13.1	20
MC231	2.5	4	7.07	MC261	8	1.8	4
MC232	5	4	7.07	MC262	8	4.7	8
MC233	8	4	7.07	MC263	8	7.5	12
MC234	12	4	7.07	MC264	8	10.3	16
MC235	16	4	7.07	MC265	8	13.1	20

1.4 MC3XX

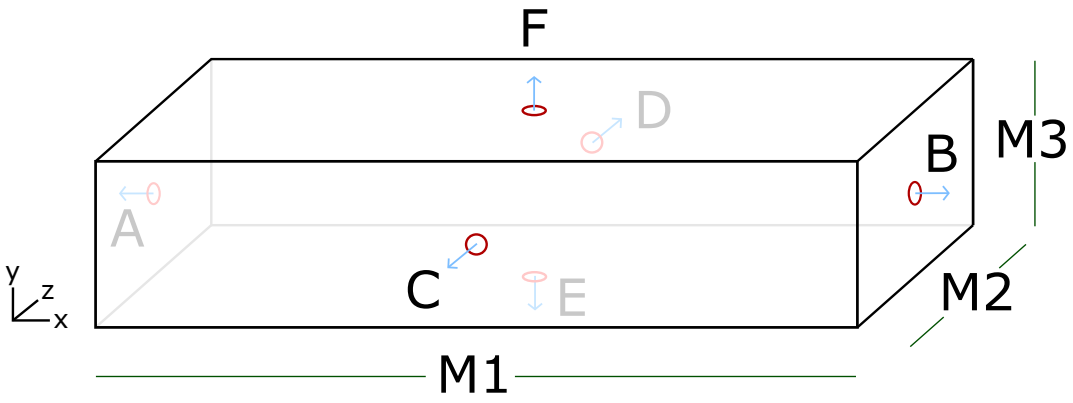

Figure 4: Blueprint MC3XX

Table 7: Properties MC3XX

Name	Detail connector
Material	PVC Plastic
Density	$1380 kg/m^3$

Table 8: Models MC3XX

Model nr	M1	M2	M3
MC311	0.5	0.5	0.5
MC312	1	0.5	0.5
MC313	2	0.5	0.5
MC314	4	0.5	0.5
MC315	6	0.5	0.5
MC321	0.5	1	1
MC322	1	1	1
MC323	2	1	1
MC324	4	1	1
MC325	6	1	1
MC326	8	1	1
MC327	10	1	1
MC333	2	2	1
MC334	4	2	1
MC335	6	2	1
MC336	8	2	1
MC337	10	2	1

1.5 MC4XX

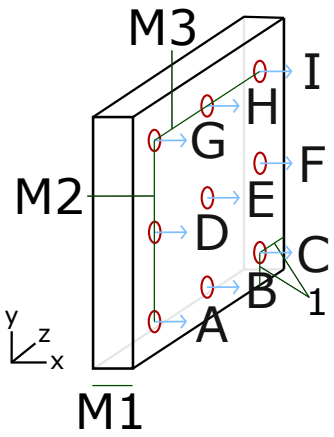

Figure 5: Blueprint MC4XX

Table 9: Properties MC4XX

Name	Cover Plate
Material	PVC Plastic
Density	$1380 kg/m^3$

Table 10: Models MC4XX

Model nr	M1	M2	M3	Model nr	M1	M2	M3
MC411	0.5	6	6	MC439	0.5	10	22
MC412	0.5	6	8	MC444	0.5	12	12
MC413	0.5	6	10	MC445	0.5	12	14
MC414	0.5	6	12	MC446	0.5	12	16
MC415	0.5	6	14	MC447	0.5	12	18
MC416	0.5	6	16	MC448	0.5	12	20
MC417	0.5	6	18	MC449	0.5	12	22
MC418	0.5	6	20	MC455	0.5	14	14
MC419	0.5	6	22	MC456	0.5	14	16
MC422	0.5	8	8	MC457	0.5	14	18
MC423	0.5	8	10	MC458	0.5	14	20
MC424	0.5	8	12	MC459	0.5	14	22
MC425	0.5	8	14	MC466	0.5	16	16
MC426	0.5	8	16	MC467	0.5	16	18
MC427	0.5	8	18	MC468	0.5	16	20
MC428	0.5	8	20	MC469	0.5	16	22
MC429	0.5	8	22	MC477	0.5	18	18
MC433	0.5	10	10	MC478	0.5	18	20
MC434	0.5	10	12	MC479	0.5	18	22
MC435	0.5	10	14	MC488	0.5	20	20
MC436	0.5	10	16	MC489	0.5	20	22
MC437	0.5	10	18	MC499	0.5	22	22
MC438	0.5	10	20				

1.6 MC9XX

These components are built from steel enforged concrete and are too heavy and too big to use in portable modules. They are designed for other purposes.

2 Sensors

2.1 Sensor Chassis

All virtual MiroSensors are built in a chassis from the blueprint in figure 6. They use the same linking system as mounting components with only one linkpoint, named *'Linkpoint'*. Dimensions are in cm.

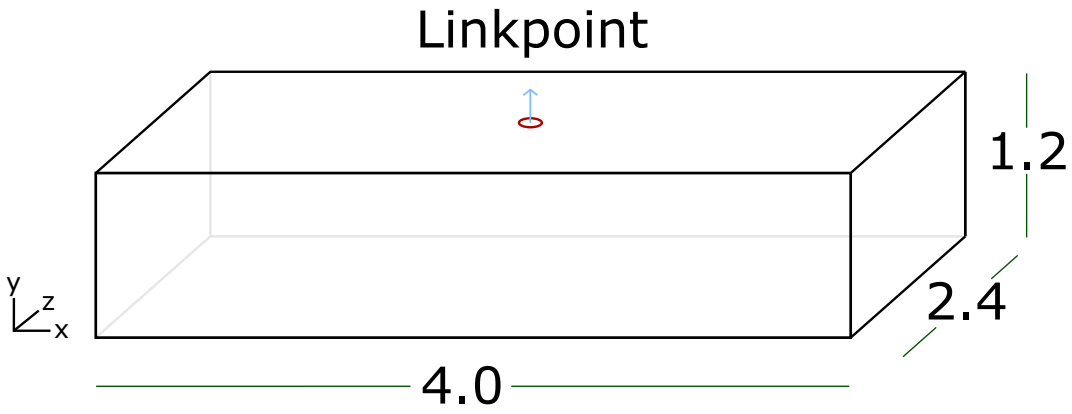

Figure 6: Blueprint MiroSensor Chassis

2.2 Sensor Types

Accelerometer: Gives the average acceleration in x, y and z during the last cycle. A Polling rate of $P_r = 100Hz$ and a reading of $a = 10m/s^2$ means that the acceleration a has been applied to the sensor during $1/100 = 0.01$ seconds.

Speedometer: Gives a vector of velocity in x, y and z.

Odometer: Gives current position relative starting point.

2.3 Sensor Models

Table 11: Properties MC4XX

Sensor	Type	Mass	Information
MSA01	Accelerometer	10g	Polling rate: 120 Hz
MSA02	Accelerometer	10g	Polling rate: 300 Hz
MSV01	Speedometer	20g	
MSO01	Odometer	40g	