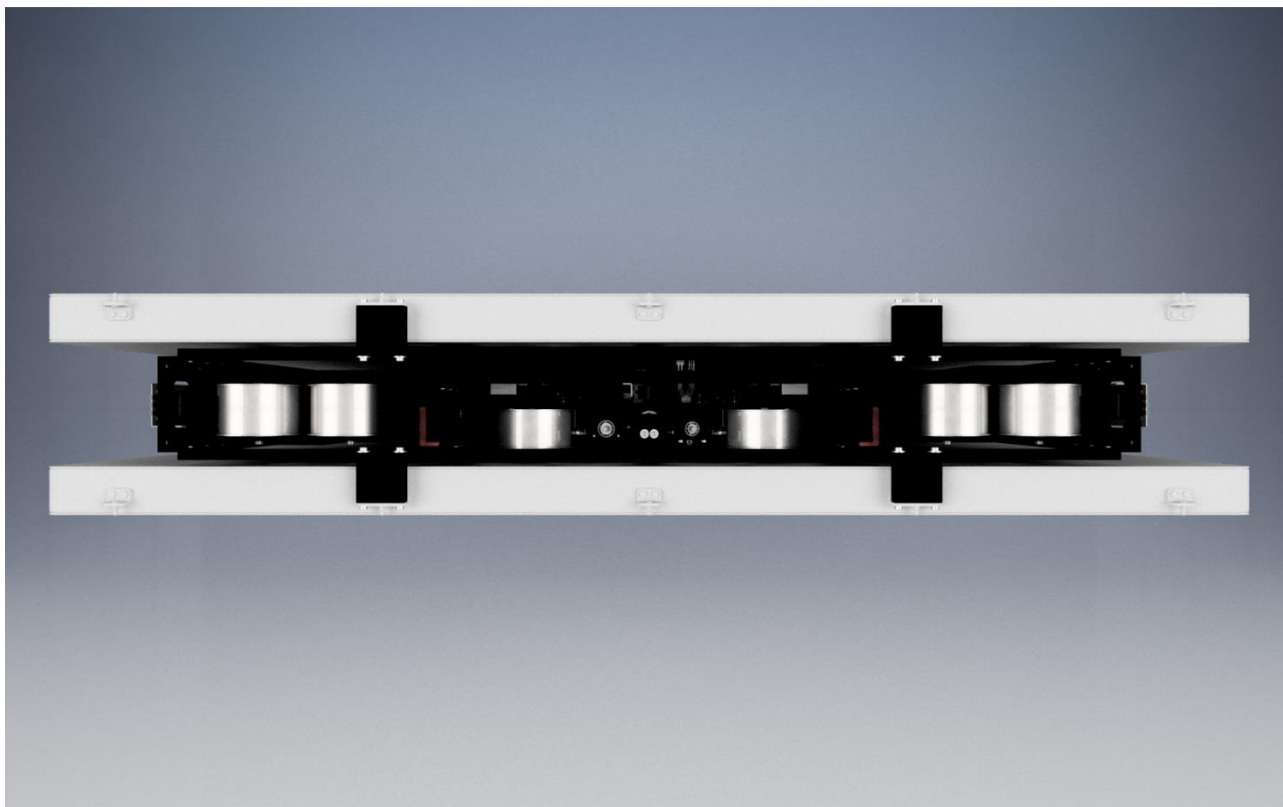


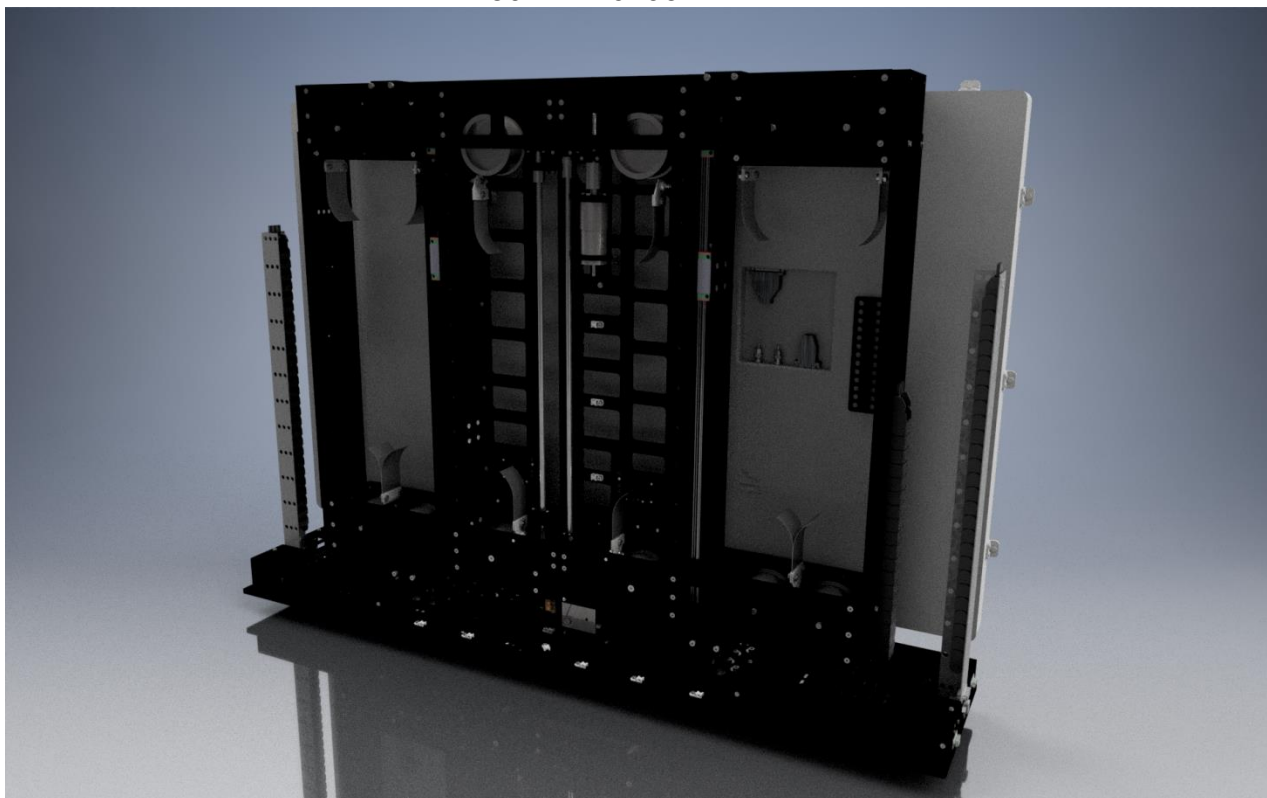
R&R MONITOR LIFT ML104-XX - for up to two 55" displays

Full travel system	nominal 1000 mm travel > modul height
Mounting	Free standing design base point mounted
Customs tariff:	84289090



Balancer

Constant force roll-off springs
138N L#16297 (weight 1kg)
103N L#16295 (weight 0,8kg)
80N L#16293



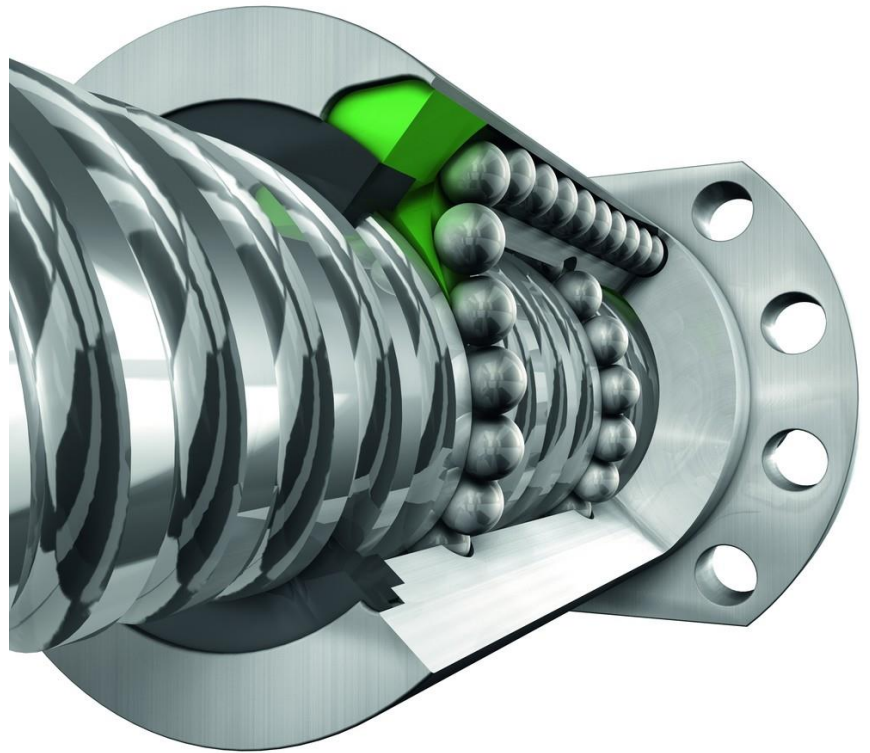
Up to 12 roll-off springs

secured stowed position
Electromechanical lock



The noise level depends on the mounting, speed, load and the cabinet!
Locking noises might be higher

2 cascaded ball screws for a
smooth travel
10mm diameter,
2,5 mm pitch,
lifetime lubrication



Motor
Gearhead
Power transmission

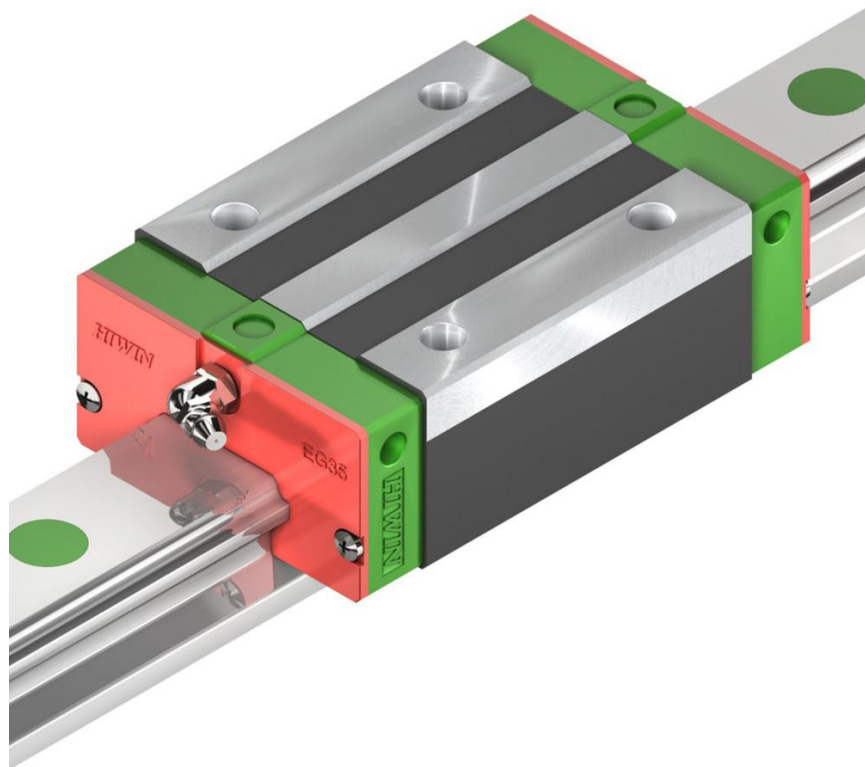
Low noise brushless dc motor
Low noise planetary gear head
Low noise toothed belt drive

Linear guide ways

2 x 2 cascaded linear guide ways

4 x 2 carriages

lifetime lubrication



Outputs	1 x relay (SSR) monitor on/off
Stowed signal	Micro switch
Motor controller	RR-P-569 see datasheet DNR22854 adjustable motor speed
Safety features	adjustable over-current shutdown running up adjustable over-current shutdown running down tool-less manual override locked stowed position
Serial interface	RS422 or RS232C service interface digital inputs
Inputs	4 x in for remote control and control keys
Power supply	115VAC, 50-800Hz
Operating temperature	-20°C - +70°C
Storage temperatur	-20°C ... +85°C
Humidity	10% - 85% Non condensing

J1: CONTROL INTERFACE 1						
Connector type:		25 pin sub-D male				
DESCRIPTION		#		#	DESCRIPTION	
AC input			•	1	Line in	115V 400Hz
	PE, shield	14	•	2	Neutral in	0V AC
	not connected	15	•			
AC input monitor 1 supply			•	3	Line in	115V 400Hz
	PE, shield	16	•	4	Neutral in	0V AC
	Not connected	17	•			
AC input monitor 2 supply			•	5	Line in	115V 400Hz
	PE, shield	18	•	6	Neutral in	0V AC
push button return	0V	19	•			
			•	7	Test-mode	push button
push button return	0V	20	•			
			•	8	stow	push button
push button return	0V	21	•			
			•	9	deploy	push button
floating end-switches, for use with 28V DC only	shield	22	•			
			•	10	NC	not stowed
	COM	23	•			active if ↑↓
floating end-switches, for use with 28V DC only			•	11	NO	stowed
	shield	23	•			
			•	12	NC	not deployed
			•			active if ↑↓
			•	13	NO	deployed

- the monitor will be switched on/off if deployed or not
- the shield-pins are connected with the frame of the D-sub header

J2: RS232C FOR SERVICE INTERFACE 1				
Connector type:		9 pin sub-D male		
DESCRIPTION	#		#	DESCRIPTION
		●	1	program mode
+5V	6	●		
		●	2	RX
RTS	7	●		
		●	3	TX
CTS	8	●		
		●	4	reset
setup	9	●		
		●	5	0V (GND)

J3: SERVICE INTERFACE 2	
Interface type:	USB
Connector type:	USB B female
Purpose:	programming and setup
PIN #	DESCRIPTION
1	5V-USB
2	D-
3	D+
4	GND

J4: ISOLATED RS422 BUS INTERFACE				
Connector type:		9 pin sub-D female		
DESCRIPTION	#		#	DESCRIPTION
B	1	O		
receiver pair			O 6	R _t
A	2	O		
			O 7	(housing) PE
Z	3	O		
transmitter pair			O 8	R _t
Y	4	O		
			O 9	(housing) PE
isolated GND	5	O		

M1.B1	
Connector type	HD BNC MALE (75 ohm)
PIN #	DESCRIPTION
1	HD VIDEO SIGNAL (INNER CONDUCTOR)
2	HD VIDEO SIGNAL SHIELD (RING)

RRM1.B1	
Connector type	HD BNC FEMALE (75 ohm)
PIN #	DESCRIPTION
1	HD VIDEO SIGNAL (INNER CONDUCTOR)
2	HD VIDEO SIGNAL SHIELD (RING)

M1.B2	
Connector type	HD BNC MALE (75 ohm)
PIN #	DESCRIPTION
1	HD VIDEO SIGNAL (INNER CONDUCTOR)
2	HD VIDEO SIGNAL SHIELD (RING)

RRM1.B2	
Connector type	HD BNC FEMALE (75 ohm)
PIN #	DESCRIPTION
1	HD VIDEO SIGNAL (INNER CONDUCTOR)
2	HD VIDEO SIGNAL SHIELD (RING)

M1.P1	
Connector type	SUB-D 5W5 female
PIN #	DESCRIPTION
A1	L1 (115V 400Hz)
A2	N
A3	PE
A4	Shield
A5	NC

M1.J1	
Connector type	RJ-45 male
PIN #	description
1	A+ (TX+)
2	A- (TX-)
3	B+ (RX+)
4	C+
5	C-
6	B- (RX-)
7	D+
8	D-

J5	
Connector type	RJ-45 female
PIN #	description
1	A+ (TX+)
2	A- (TX-)
3	B+ (RX+)
4	C+
5	C-
6	B- (RX-)
7	D+
8	D-

M1.P2: AUDIO INTERFACE				
CONNECTOR TYPE:	15 PIN SUB-D FEMALE (STANDARD)			
N/C	1	O		
			O	9
DIGITAL AUDIO B OUT				
N/C	2	O		
			O	10
DIGITAL AUDIO A OUT				
N/C	3	O		
			O	11
N/C				
DIGITAL AUDIO B IN	4	O		
			O	12
hall C				
N/C	5	O		
			O	13
DIGITAL AUDIO A IN				
C-STREAM A	6	O		
			O	14
N/C				
N/C	7	O		
			O	15
N/C				
N/C	8	O		

J6: AUDIO INTERFACE				
CONNECTOR TYPE:	15 PIN SUB-D MALE (STANDARD)			
	1		O	
N/C				9
DIGITAL AUDIO B OUT		O		
	2		O	
N/C				10
DIGITAL AUDIO A OUT		O		
	3		O	
N/C				11
	4	O		
DIGITAL AUDIO B IN			O	12
hall C				
N/C	5	O		
			O	13
DIGITAL AUDIO A IN				
C-STREAM A	6	O		
			O	14
N/C				
N/C	7	O		
			O	15
N/C				
N/C	8	O		

BNC extension cable:
TPE COAXIAL CABLE
TPE Outer jacket
Oil resistant
Bio-oil resistant
UV-resistant
Hydrolysis and microbe-resistant

M2.B1	
Connector type	HD BNC MALE (75 ohm) Coax elements are comparable to HF75-0.3/1.6 in accordance with the MIL-C-17/94-RG179 and therefore fit into an RG179 plug.
PIN	DESCRIPTION
1	HD VIDEO SIGNAL (INNER CONDUCTOR)
2	HD VIDEO SIGNAL SHIELD (RING)

RRM2.B1	
Connector type	HD BNC FEMALE (75 ohm) Coax elements are comparable to HF75-0.3/1.6 in accordance with the MIL-C-17/94-RG179 and therefore fit into an RG179 plug.
PIN	DESCRIPTION
1	HD VIDEO SIGNAL (INNER CONDUCTOR)
2	HD VIDEO SIGNAL SHIELD (RING)

M2.B2	
Connector type	HD BNC MALE (75 ohm) Coax elements are comparable to HF75-0.3/1.6 in accordance with the MIL-C-17/94-RG179 and therefore fit into an RG179 plug.
PIN	DESCRIPTION
1	HD VIDEO SIGNAL (INNER CONDUCTOR)
2	HD VIDEO SIGNAL SHIELD (RING)

RRM2.B2	
Connector type	HD BNC FEMALE (75 ohm) Coax elements are comparable to HF75-0.3/1.6 in accordance with the MIL-C-17/94-RG179 and therefore fit into an RG179 plug.
PIN	DESCRIPTION
1	HD VIDEO SIGNAL (INNER CONDUCTOR)
2	HD VIDEO SIGNAL SHIELD (RING)

M2.P1	
Connector type	SUB-D 5W5 female
A1	L1 (115V 400Hz)
A2	N
A3	PE
A4	Shield
A5	NC

M2.J1	
Connector type	RJ-45 male
PIN #	description
1	A+ (TX+)
2	A- (TX-)
3	B+ (RX+)
4	C+
5	C-
6	B- (RX-)
7	D+
8	D-

J7	
Connector type	RJ-45 female
PIN #	description
1	A+ (TX+)
2	A- (TX-)
3	B+ (RX+)
4	C+
5	C-
6	B- (RX-)
7	D+
8	D-

M2.P2: AUDIO INTERFACE					
CONNECTOR TYPE:	15 PIN SUB-D FEMALE (STANDARD)				
N/C	1	O			
			O	9	DIGITAL AUDIO B OUT
N/C	2	O			
			O	10	DIGITAL AUDIO A OUT
N/C	3	O			
			O	11	N/C
DIGITAL AUDIO B IN	4	O			
			O	12	hall C
N/C	5	O			
			O	13	DIGITAL AUDIO A IN
C-STREAM A	6	O			
			O	14	N/C
N/C	7	O			
			O	15	N/C
N/C	8	O			

J8: AUDIO INTERFACE					
CONNECTOR TYPE:	15 PIN SUB-D MALE (STANDARD)				
			O	1	N/C
DIGITAL AUDIO B OUT	9	O			
			O	2	N/C
DIGITAL AUDIO A OUT	10	O			
			O	3	N/C
N/C	11	O			
			O	4	DIGITAL AUDIO B IN
hall C	12	O			
			O	5	N/C
DIGITAL AUDIO A IN	13	O			
			O	6	C-STREAM A
N/C	14	O			
			O	7	N/C
N/C	15	O			
			O	8	N/C

ML104-01

Dimensions W x D x H
Without display
Installation Drawing

Single display configuration
Approx. 1250 mm x 160 mm x 908 mm

DNR 22682

Weight

Approx. 50kg without display

Deployed position

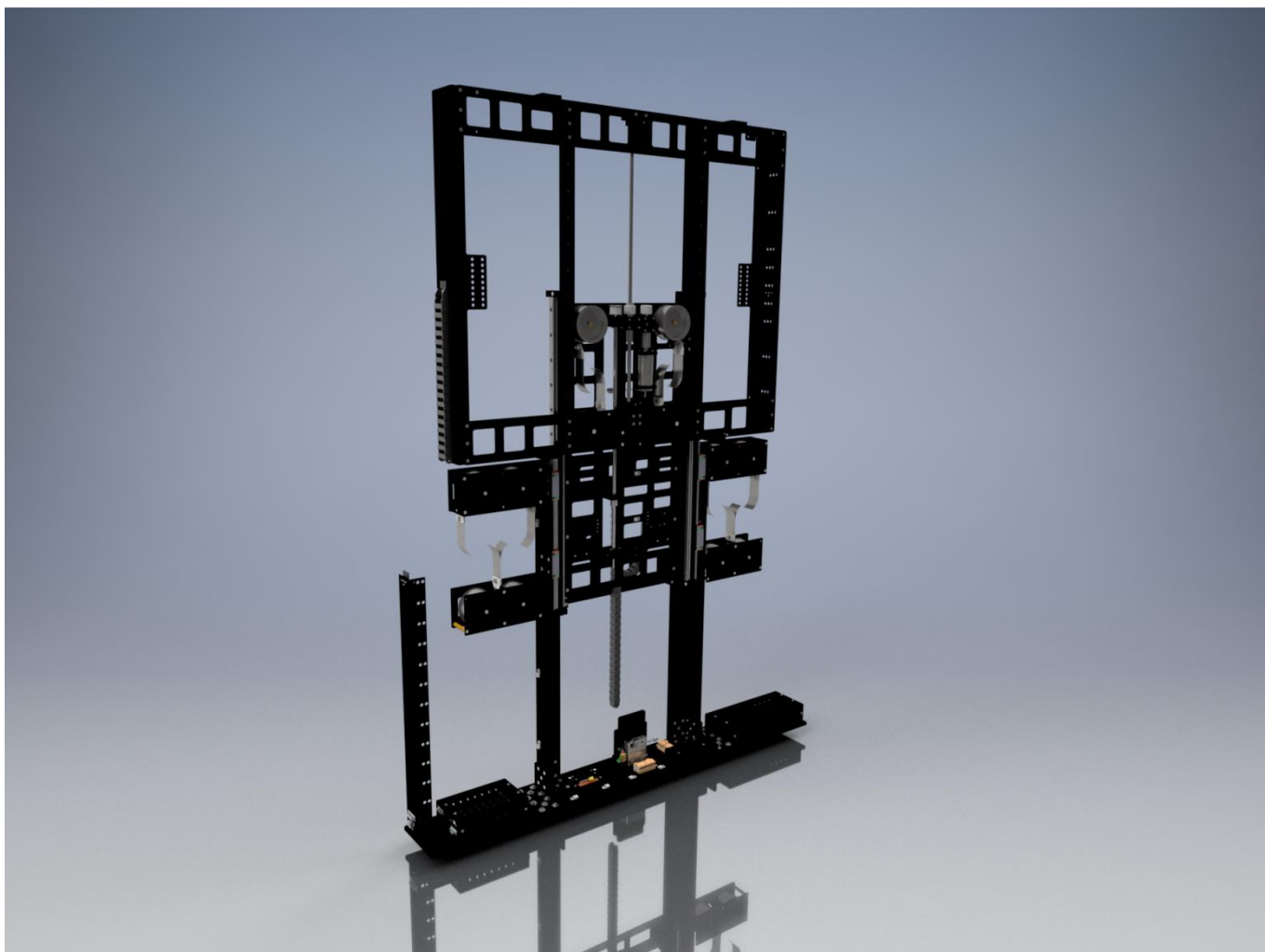
Limit switches and spring roller catch
Tool-less manual override

Stowed position

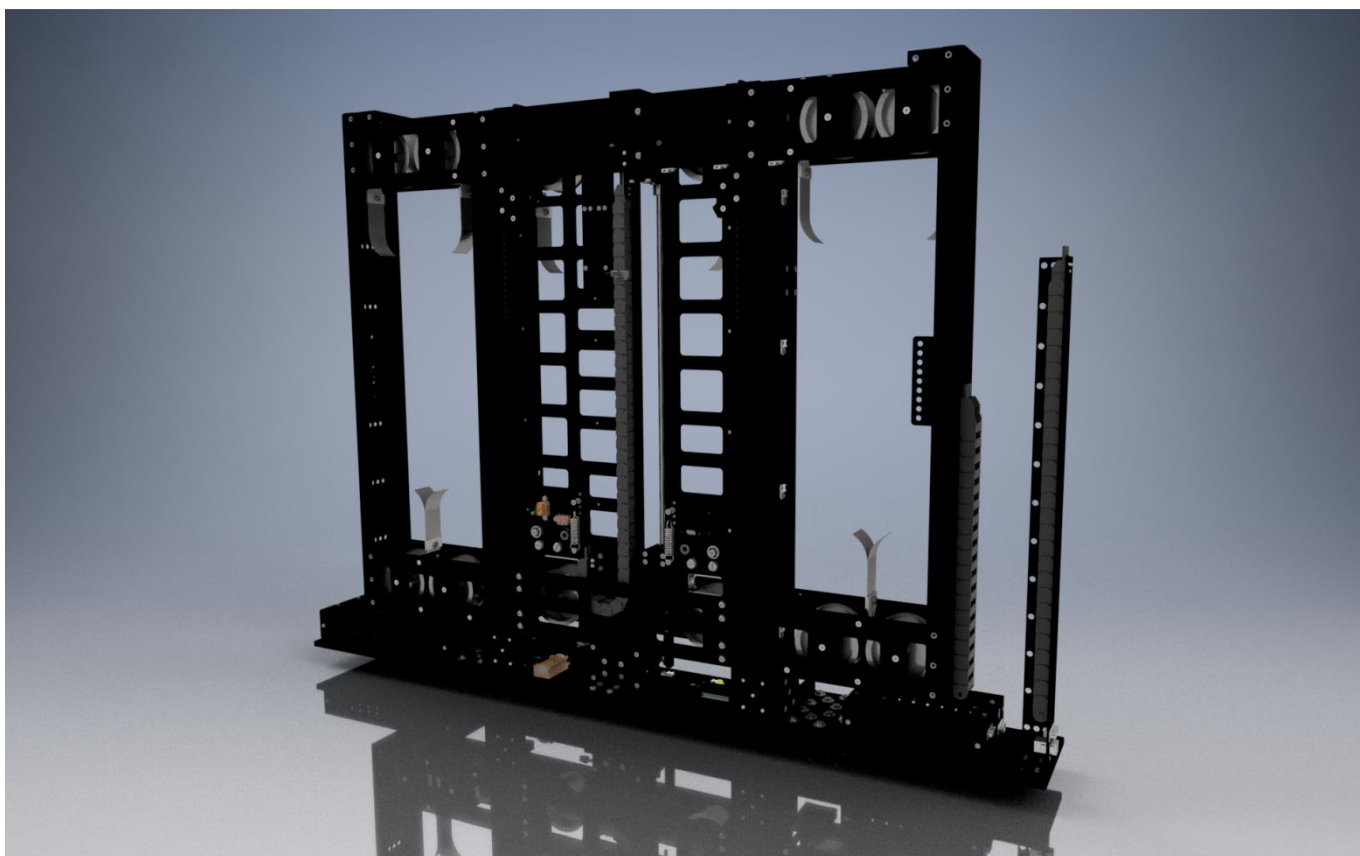
Limit switches, electromechanical spring locks

Monitor support structure
Options

See DNR22682
customized support structures, VESA mount, ...



ML104-01 front view deployed – single display -



ML104-01 front view stowed – single display

ML104-02

Two display configuration

Dimensions W x D x H
without display

Approx. 1280mm x 270mm x 908 mm

Drawing

DNR 22686

Balance force calculation

Max. 12 springs

Power supply

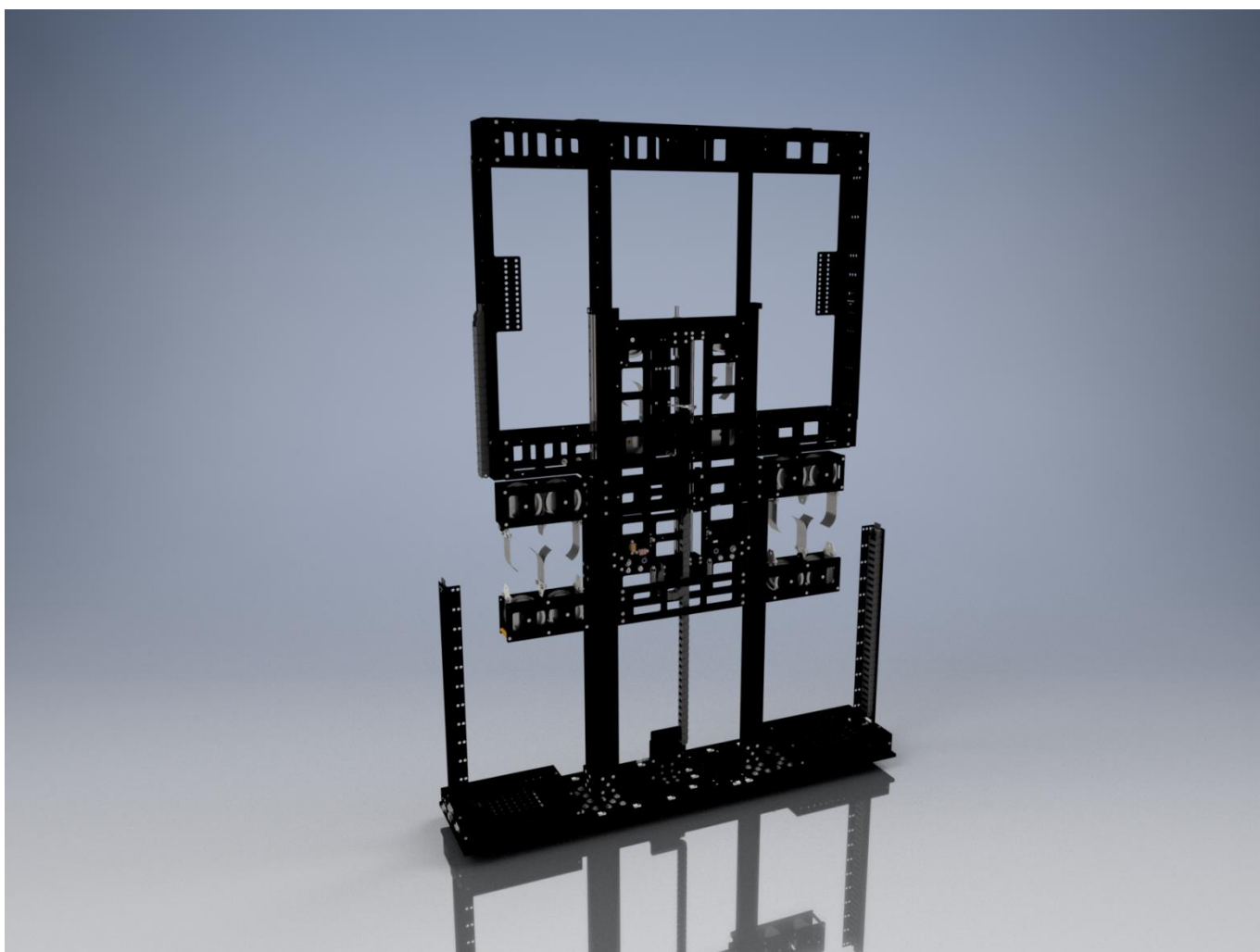
115V 50-800Hz

Weight

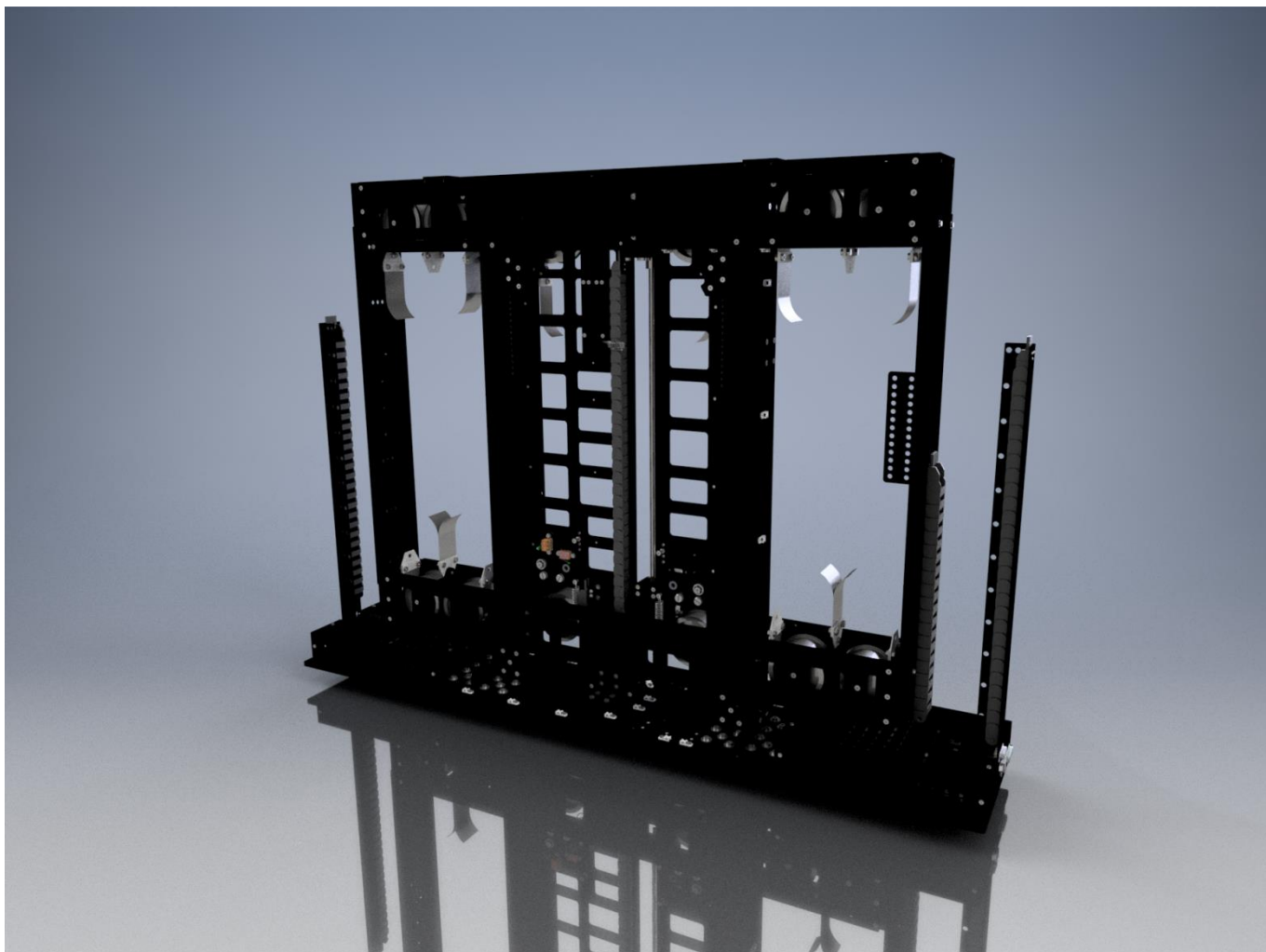
Approx. 60kg

Monitor support structure

Including base panel and monitor support structure
See DNR22686



ML104-02 front view deployed for 2 displays



ML104-02 front view stowed for 2 displays

Attention!

**The mounting area must be able to take the load and torque of the unit!
A safety frame for the stowed position to reduce the stress is recommended.**

REV.	DESCRIPTION	DATE	PAGES	NAME
01	First Release	09.10.2015	ALL	P. Seewang
02	Update pin assignments	12.10.2016	ALL	P.S.
03	Updated illustrations	10.01.2017	ALL	P. Seewang