

Fan control



easy control of the
volume flow



Why HLU?

90 years of experience in the
plastics processing market

More than 10.000 m² production
in Germany

Worldwide partner network

Large performance spectrum
in air technology

Over 200 qualified employees

www.hlu.eu





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HLU - Fan control with frequency converter
for plastic fans

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HLU - Fan control
with frequency converter
for fans made of plastic



Advantages

- Exact control of the required air volume via fan speed
- Energy-efficient
- Compact design
- Mains disturbances are below the EU regulations on the electromagnetic compatibility of equipment (EMC), so that other electronic devices are not disturbed
- Wide range of accessories

Application

- For the control of a HF-Fan with a programmable speed stage and a simultaneous control of two shut-off dampers with an OPEN/CLOSED actuator.

Design

- Stepless speed adjustment via Danfoss frequency converter
- Parallel control of shut-off dampers
- Electronic monitoring of the motor current
- Control elements in powder-coated steel cabinet, protection class IP 54
- Switches and control components from Siemens and ABB

Fan control

up to four programmable speed stages



Centrifugal, Roof or Axial fan



1

ASM-MU
Airstream monitoring
Accessories p. 16



up to
4

AK Shut-Off Damper
Accessories p. 20



up to
4

Remote switch



up to
4

Signaling light



1

Flash light red	Flash Buzzer
Article no.	Article no.
012-990-008051	012-990-008054

Alarm device



1

External loads
(230 V | max. 1 A)

Specification

HLU - Fan control with frequency converter for one programmable speed

Factory set to frequency:

1. ... Hz

Compact control for fans, ready for connection for variable speed operation with frequency converter with **one programmable speed and simultaneous control of two shut-off dampers** with actuator OPEN/CLOSED.

Version with main switch, start/stop switch, indication of speed and fault message. Frequency changeover via an external switch (potential-free make contact). Connection of an air flow monitor with fault signal (alarm device), connection for external fault signal and/or external signal of the speed. Additional connection for external devices (1~230 V, connection: max. 1 A) Cable entries and connection terminals for the power supply and all field devices.

Manufacturer	: HLU
Type	: HLU-S1 FU ...
Performance up to	: ... kW
Input voltage	: 1 ~ 230 V
Netzfrequenz	: 50 Hz
Output voltage	: 3 ~ 0 ... 230 V
Output frequency	: 10 - 70 Hz
Frequency steps	: 1 - freely programmable
Filter	: integrated in FC
Motor protection	: electronic motor current monitoring or thermal monitoring Winding protection
Housing	: steel, powder-coated
Protection class	: IP 54
Dimensions	: ...
Cable entry	: ...

HLU-S1 FU ... programmable speed stage



HLU - Fan control
with frequency converter



Type - performance	Dimension [mm]			Weight kg	Fan control Article no.
	Ø	b	h		
HLU-S1 FU 0,25	400	300	210	15,6	200-000-000100
HLU-S1 FU 0,37	400	300	210	15,6	200-000-000101
HLU-S1 FU 0,55	400	300	210	15,6	200-000-000102
HLU-S1 FU 0,75	400	300	210	15,6	200-000-000103
HLU-S1 FU 1,1	400	300	210	15,7	200-000-000104
HLU-S1 FU 1,5	400	300	210	15,7	200-000-000105
HLU-S1 FU 2,2	600	380	350	36,6	200-000-000106

Specification

HLU - Fan control with frequency converter for plastic fans

Factory set to frequency:

1. ... Hz

2. ... Hz

Compact control for fans, ready for connection for variable speed operation with frequency converter with **two programmable speeds and simultaneous control of two shut-off dampers** with actuator OPEN/CLOSED.

Version with main switch, start/stop switch, indication of speed and fault message. Frequency changeover via an external switch (potential-free make contact). Connection of an air flow monitor with fault signal (alarm device), connection for external fault signal and/or external signal of the speed. Additional connection for external devices (1~230 V, connection: max. 1 A) Cable entries and connection terminals for the power supply and all field devices.

Manufacturer	: HLU
Type	: HLU-S2 FU ...
Performance up to	: ... kW
Input voltage	: 1 ~ 230 V
Netzfrequenz	: 50 Hz
Output voltage	: 3 ~ 0 ... 230 V
Output frequency	: 10 - 70 Hz
Frequency steps	: 2 - freely programmable
Filter	: integrated in FC
Motor protection	: electronic motor current monitoring or thermal monitoring Winding protection
Housing	: steel, powder-coated
Protection class	: IP 54
Dimensions	: ...
Cable entry	: ...

HLU-S2 FU ...

two programmable speed stages



HLU - Fan control
with frequency converter



Type - performance	Dimension [mm]			Weight kg	Fan control Article no.
	b	h	t		
HLU-S2 FU 0,25	400	300	210	16,2	200-000-000107
HLU-S2 FU 0,37	400	300	210	16,2	200-000-000108
HLU-S2 FU 0,55	400	300	210	16,2	200-000-000109
HLU-S2 FU 0,75	400	300	210	16,2	200-000-000110
HLU-S2 FU 1,1	400	300	210	16,3	200-000-000111
HLU-S2 FU 1,5	400	300	210	16,3	200-000-000112
HLU-S2 FU 2,2	600	380	350	37,2	200-000-000113

Specification

HLU - Fan control with frequency converter for three programmable speeds

Factory set to frequency:

1. ... Hz
2. ... Hz
3. ... Hz

Compact control for fans, ready for connection for variable speed operation with frequency converter with **three programmable speeds and simultaneous control of three shut-off dampers** with actuator OPEN/CLOSED.

Version with main switch, start/stop switch, indication of speed and fault message. Frequency changeover via an external switch (potential-free make contact). Connection of an air flow monitor with fault signal (alarm device), connection for external fault signal and/or external signal of the speed. Additional connection for external devices (1~230 V, connection: max. 1 A) Cable entries and connection terminals for the power supply and all field devices.

Manufacturer	: HLU
Type	: HLU-S3 FU ...
Performance up to	: ... kW
Input voltage	: 1 ~ 230 V
Netzfrequenz	: 50 Hz
Output voltage	: 3 ~ 0 ... 230 V
Output frequency	: 10 - 70 Hz
Frequency steps	: 3 - freely programmable
Filter	: integrated in FC
Motor protection	: electronic motor current monitoring or thermal monitoring Winding protection
Housing	: steel, powder-coated
Protection class	: IP 54
Dimensions	: ...
Cable entry	: ...

HLU-S3 FU ...

three programmable speed stages



HLU - Fan control
with frequency converter



Type - performance	Dimension [mm]			Weight kg	Fan control Article no.
	b	h	t		
HLU-S3 FU 0,25	400	300	210	17,7	200-000-000114
HLU-S3 FU 0,37	400	300	210	17,7	200-000-000115
HLU-S3 FU 0,55	400	300	210	17,7	200-000-000116
HLU-S3 FU 0,75	400	300	210	17,7	200-000-000117
HLU-S3 FU 1,1	400	300	210	17,8	200-000-000118
HLU-S3 FU 1,5	400	300	210	17,8	200-000-000119
HLU-S3 FU 2,2	600	380	350	38,7	200-000-000120

Specification

HLU - Fan control with frequency converter for four programmable speeds

Factory set to frequency:

1. ... Hz
2. ... Hz
3. ... Hz
4. ... Hz

Compact control for fans, ready for connection for variable speed operation with frequency converter with **four programmable speeds and simultaneous control of four shut-off dampers** with actuator OPEN/CLOSED.

Version with main switch, start/stop switch, indication of speed and fault message. Frequency changeover via an external switch (potential-free make contact). Connection of an air flow monitor with fault signal (alarm device), connection for external fault signal and/or external signal of the speed. Additional connection for external devices (1~230 V, connection: max. 1 A) Cable entries and connection terminals for the power supply and all field devices.

Manufacturer	: HLU
Type	: HLU-S4 FU ...
Performance up to	: ... kW
Input voltage	: 1 ~ 230 V
Netzfrequenz	: 50 Hz
Output voltage	: 3 ~ 0 ... 230 V
Output frequency	: 10 - 70 Hz
Frequency steps	: 4 - freely programmable
Filter	: integrated in FC
Motor protection	: electronic motor current monitoring or thermal monitoring Winding protection
Housing	: steel, powder-coated
Protection class	: IP 54
Dimensions	: ...
Cable entry	: ...

HLU-S4 FU ...

four programmable speed stages



HLU - Fan control
with frequency converter



Type - performance	Dimension [mm]			Weight kg	Fan control Article no.
	b	h	t		
HLU-S4 FU 0,25	400	300	210	28,1	200-000-000121
HLU-S4 FU 0,37	400	300	210	28,1	200-000-000122
HLU-S4 FU 0,55	400	300	210	28,1	200-000-000123
HLU-S4 FU 0,75	400	300	210	28,1	200-000-000124
HLU-S4 FU 1,1	400	300	210	28,2	200-000-000125
HLU-S4 FU 1,5	400	300	210	28,2	200-000-000126
HLU-S4 FU 2,2	600	380	350	40,8	200-000-000127

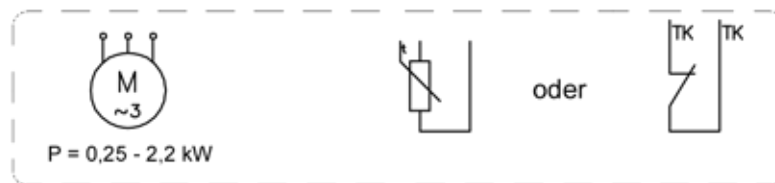
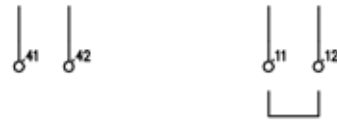
Wiring diagram for HLU - Fan control



Wiring diagram: Fan 230 V



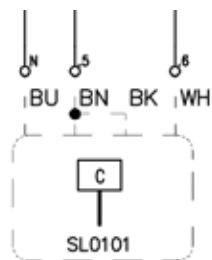
- shielded cable, maximum length 20 m
- for inverters with 230 V, switch motor connection in delta



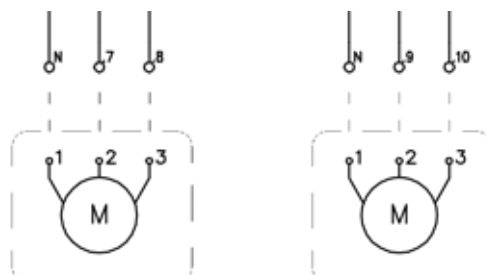
Fan

PTC or thermal contact

Wiring diagram: Airstream monitoring 230 V



Wiring diagram: Shut-Off Damper 230 V



Wiring diagram



Wiring diagram for
HLU - Fan control

Wiring diagram: Remote switch 230 V



Wiring diagram: External loads 230 V



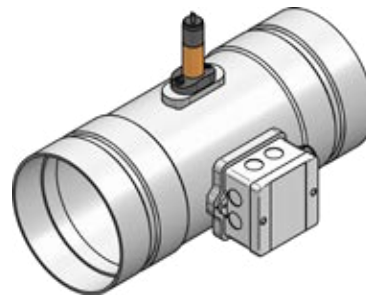
Wiring diagram: Alarm device 230 V



Wiring diagram: Signaling light 230 V



Accessories
Airstream monitoring for
Fan control



ASM-MU Airstream monitoring

Technical description and application

Airstream monitor installed in plastic pipe with cable and mounted terminal box. For simple and reliable monitoring of the flow in ventilation systems. The calorimetric sensor made of titanium-PBT in a protective plastic housing is suitable for humid and chemically polluted gases.

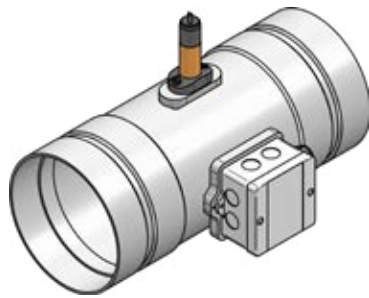
The cylindrical, smooth plastic housing contains the sensor, the evaluation electronics, the output relay, the setting potentiometer, the LEDs and a time relay for start-up bridging. The start-up and standby phase is visually indicated by the red and green LEDs simultaneously illuminating. During this time the output relay is energised and the contact is closed.

The undershooting of the limit value can be infinitely adjusted by means of a potentiometer. A red or green LED indicates that the flow rate has fallen below or exceeded the limit value. Undershooting = red LED illuminates, relay has fallen off; Exceeding = normal operation, green LED illuminates, relay energised.

Manufacturer : Hürner Luft- und Umwelttechnik
Type : HF-ASM-MU ...

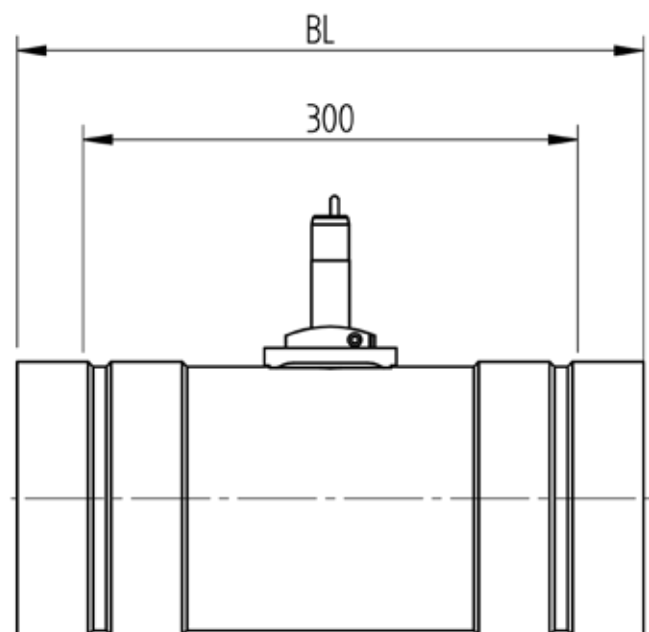
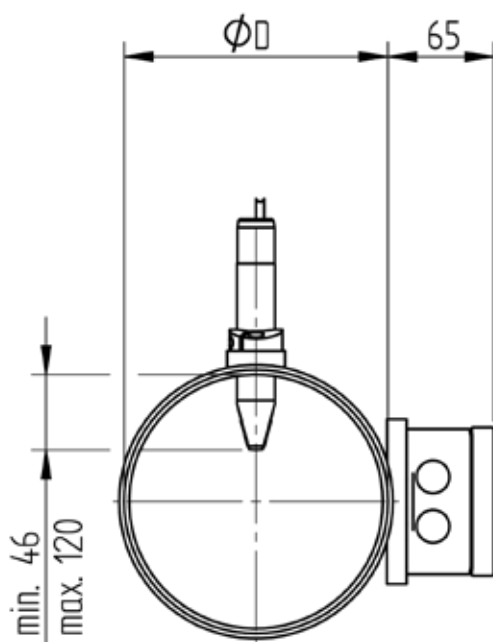
Housing material	: PPs
Sensor material	: Titan-PBT
Temperatur	: -10 to +50 °C
Setting range	: 1...10 m/s
Greatest sensitivity	: 1...4 m/s
Response time	: 3...60 s
Size	: Ø ... mm
Installation length	: ... mm
Type of installation	: Sleeve
Electrical design	: AC/DC
Operating voltage	: 80...250 AC/DC V (47...63 Hz AC)
Output function	: Relay energises on flow
Contact rating	: 3 A (30 V DC / 250 V AC)
Protection	: IP 65

HF - ASM-MU



Accessories
Airstream monitoring for
Fan control

Airstream monitoring	
Type	Article no.
HF-ASM-MU 75	412-016-000001
HF-ASM-MU 90	412-016-000002
HF-ASM-MU 110	412-016-000003
HF-ASM-MU 125	412-016-000004
HF-ASM-MU 140	412-016-000005
HF-ASM-MU 160	412-016-000006
HF-ASM-MU 180	412-016-000007
HF-ASM-MU 200	412-016-000008
HF-ASM-MU 225	412-016-000009
HF-ASM-MU 250	412-016-000010
HF-ASM-MU 280	412-016-000011
HF-ASM-MU 315	412-016-000012
HF-ASM-MU 355	412-016-000013
HF-ASM-MU 400	412-016-000014



Accessories
 Shut-Off Damper

AK Shut-Off Damper
Specification

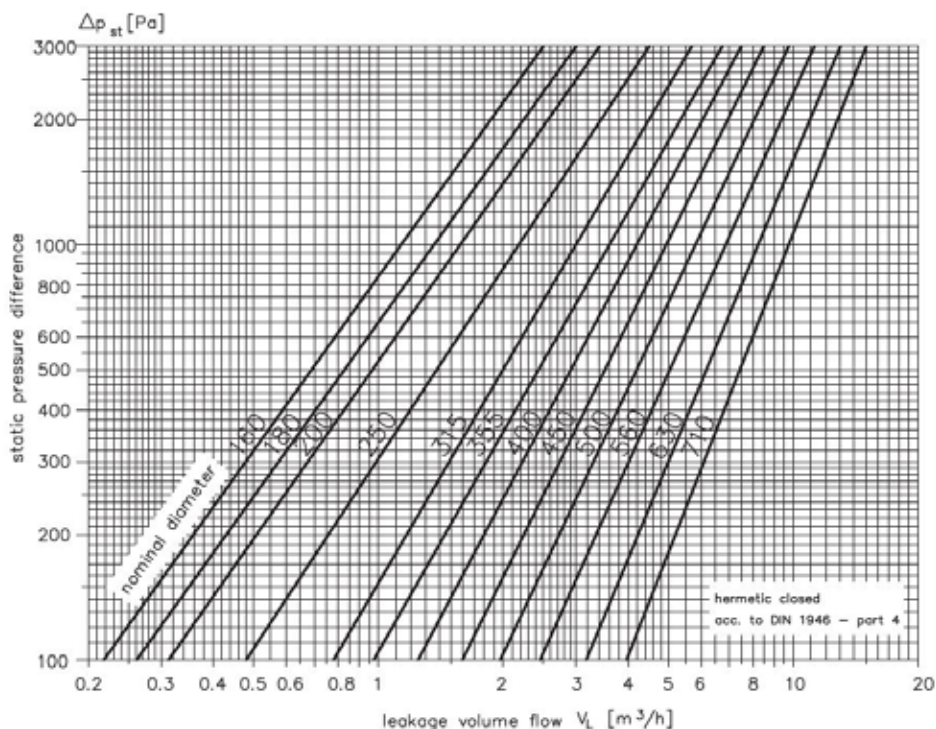
HF shut-off dampers of stabil, circular construction for ggressive media volume flows. Casing with blade for air-tight shut-off according to DIN 1946 - part 4.

The wear-resistant shaft bearing is air-tight. Shaft-seal can be replaced from outside.

All parts in contact with the exhaust medium are of plastics, or overed with plastics. There are no internal stops required and because of the optimized flow construction of the blades, the units are very quiet.

Manufacturer : Hürner Luft- und Umwelttechnik
Type : HF-AK.....

Coupling diameter : mm
 Material :
 Coupling type : pipe, sleeve, or flange coupling on both sides
 Actuator type : electrically, pneumatically or manually.
 Actuator make / type :
 Mounting length : mm

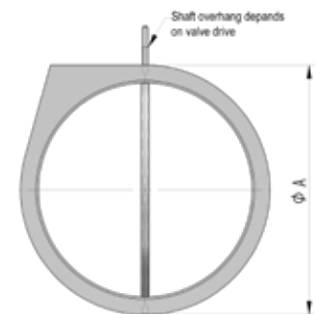
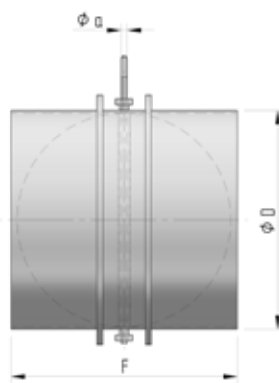




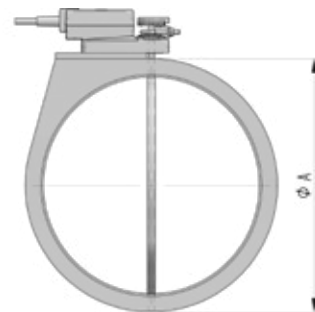
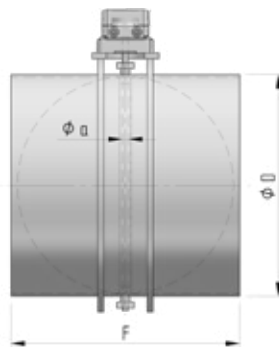
Accessories Shut-Off Damper

Pipe Coupling

Shut-off damper with console for blade actuator provided by customer.



Shut-off damper with blade actuator attached.
(electrically or pneumatically execution)



Dimensions			
NW	Ø A	Ø a	F
160	230	12	220
180	250	12	220
200	270	12	220
250	320	12	270
315	395	12	335
355	435	12	375
400	480	12	420
450	520	12	470
500	580	15	520
560	640	15	580
630	710	15	650
710	790	15	730

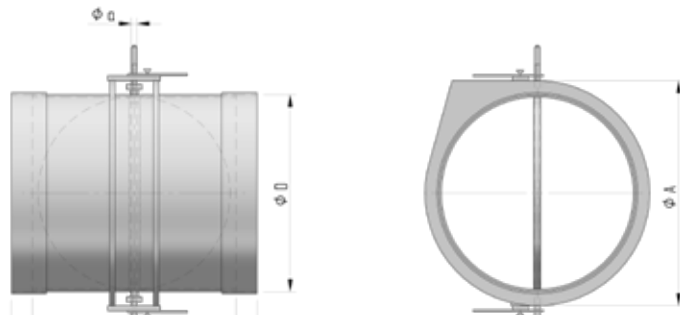
dimensions in mm

Accessories Shut-Off Damper

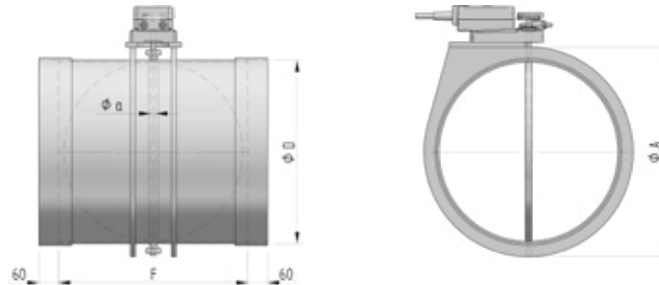


Sleeve Coupling

Shut-off damper with console for blade actuator provided by customer.



Shut-off damper with blade actuator attached.
(electrically or pneumatically execution)



Dimensions			
NW	Ø A	Ø a	F
160	230	12	220
180	250	12	220
200	270	12	220
250	320	12	270
315	395	12	335
355	435	12	375
400	480	12	420
450	520	12	470
500	580	15	520
560	640	15	580
630	710	15	650
710	790	15	730

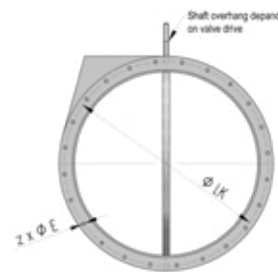
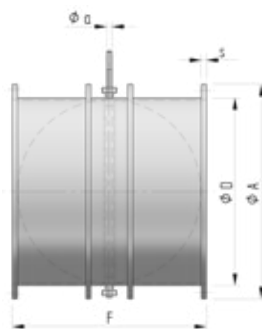
dimensions in mm



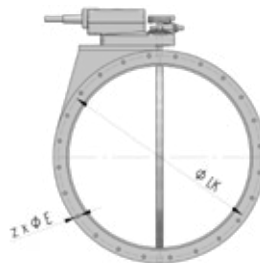
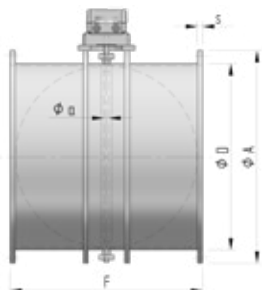
Accessories Shut-Off Damper

Flange Coupling

Shut-off damper with console for blade actuator provided by customer.



Shut-off damper with blade actuator attached.
(electrically or pneumatically execution)



Dimensions								
NW	Ø B	Ø A	Ø a	F	Ø LK	z	Ø E	s
160	154	230	12	220	200	8	7	8
180	174	250	12	220	220	8	7	8
200	194	270	12	220	240	8	7	8
250	242	320	12	270	290	12	7	8
315	305	395	12	335	350	12	9	10
355	345	435	12	375	400	12	9	10
400	388	480	12	420	445	16	9	10
450	438	520	12	470	490	20	9	10
500	488	580	15	520	550	20	9	10
560	548	640	15	580	610	24	11	15
630	618	710	15	650	680	24	11	15
710	698	790	15	730	760	28	11	15

dimensions in mm



HLU[®]

Hürner Luft- und Umwelttechnik



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