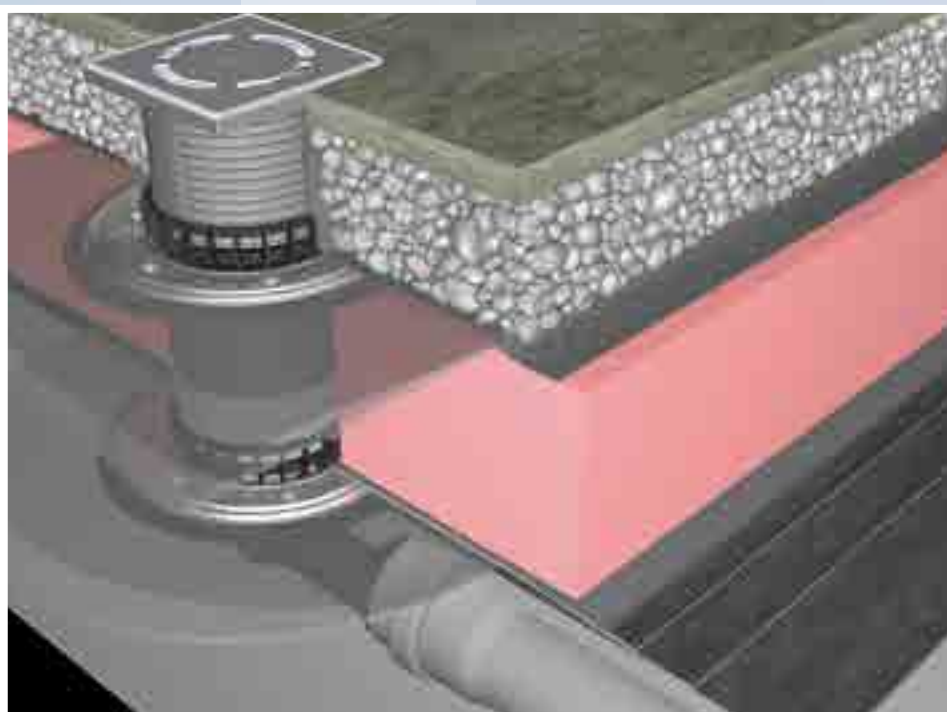


SIFONE

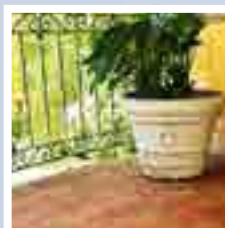
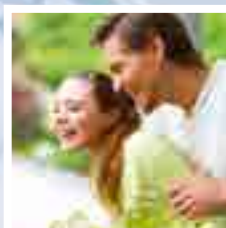
HL

ABLÄUFE



HL[®] Drains

Balcony and terrace



HL® Balcony and terrace drains

Basic information about design and installation

In general the draining of rain water on terrace and balcony surfaces should happen with gullies. Already during planing some important topics should be taken into consideration:

▲ To choose the right drain including all accessories a detailed plan of the floor construction (ceiling material, thermal insulation, waterproofing...) has to be defined. Especially with inverted roof constructions different drain positions both above the thermal insulation and on the waterproofing has to be provided.

▲ The area (or subarea) and the rainfall rate has to be known, when choosing the fitting gully. Therefore important is the calculated rainwater rate (l/s) and the capacity of the gully (l/s).

▲ To avoid leakage in the structure, it is important, to take care of the kind of waterproofing, especially the connection between drain and the local waterproofing. Please check the compatibility between the local waterproofing on the terrace and our HL prefabricated sealing kits.

▲ Please notice, that acc. international standards at terraces and loggias, which are surrounded by attic walls, one should care for a suitable emergency drainage. The sense of it is, to avoid overload on the

terrace construction by backwater, caused by a blocked drain or by heavy rain events. Therefore we recommend to clean gullies frequently.

▲ According local standards the gully should only be connected to rain water sewers. Should this not be possible, we recommend the usage of frost-proof stretch traps.

Relevant standards/directives

ÖNorm B2501		Drainage of buildings
DIN 1986-100		Drainage systems for buildings and estates
EN 12056		Gravity drainage systems inside of buildings
ÖNorm B2209		Waterproofing works
ÖNorm B2220		Roof waterproofings with bitumen and plastic sheetings
ÖNorm B7209		Waterproofings for buildings
ÖNorm B7220		Roofs with waterproofings

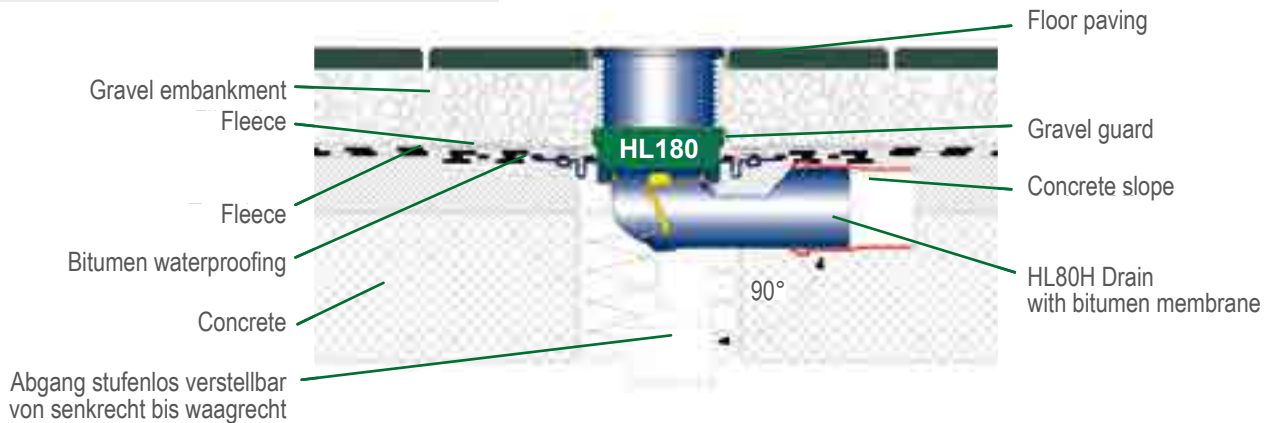
Selection of the convenient drain

Selective criteria	Requirements	Product
Drainage surface	When you calculate the quantity of occurring rain water acc. ÖNORM B2501 and DIN 1986-100, you have to use at least the standard rain yield factor of 300 l/ (s x ha). Quantity of rain water = 0,030 l/s x Drainage surface Quantity of gullies = $\frac{\text{Absolute quantity of rain water}}{\text{Capacity of the gully}}$	For the exact definition of the right drain and the quantity of gullies, please mind the capacity of the particular article.
Ceiling construction	To find out, what is the best composition of the drain, like extension (with or without flange), gravel guard, sealing kit or heating, a detailed plan of the different layers of the ceiling is necessary.	Extension (with or without flange) Sealing kit Gravel guard eventually heating
Waterproofing	To have a save and leak-proof connection between drain and local waterproofing, the waterproofing material on the ceiling should be known. Local waterproofing (2 mm thick, flexible) Bitumen coating Bitumen waterproofing, liquid bitumen compound PVC waterproofing FPO waterproofing, based on PP Liquid sealing compounds	HL83.0, HL8300.0 HL83 (with EPDM-foil) HL83.H, HL8300H (with bitumen flange) Drain HL80H, HL3100TH, HL5100TH Extensions HL85NH, HL8500H HL83.P, HL8300.P HL83.PP, HL8300.PP (with PP flange) HL83.M, HL8300.M (with textile coated membrane)
Direction of the outlet	horizontal vertical	HL80-series, HL90, HL90.2, HL5100T-series HL80-series, HL310N.2, HL3100T-series
Sewer	Rain water sewer Mixed sewer	All types of drains applicable Drains with traps: HL80-series, HL90.2, HL310N.2, HL3100T-series, HL5100T-series

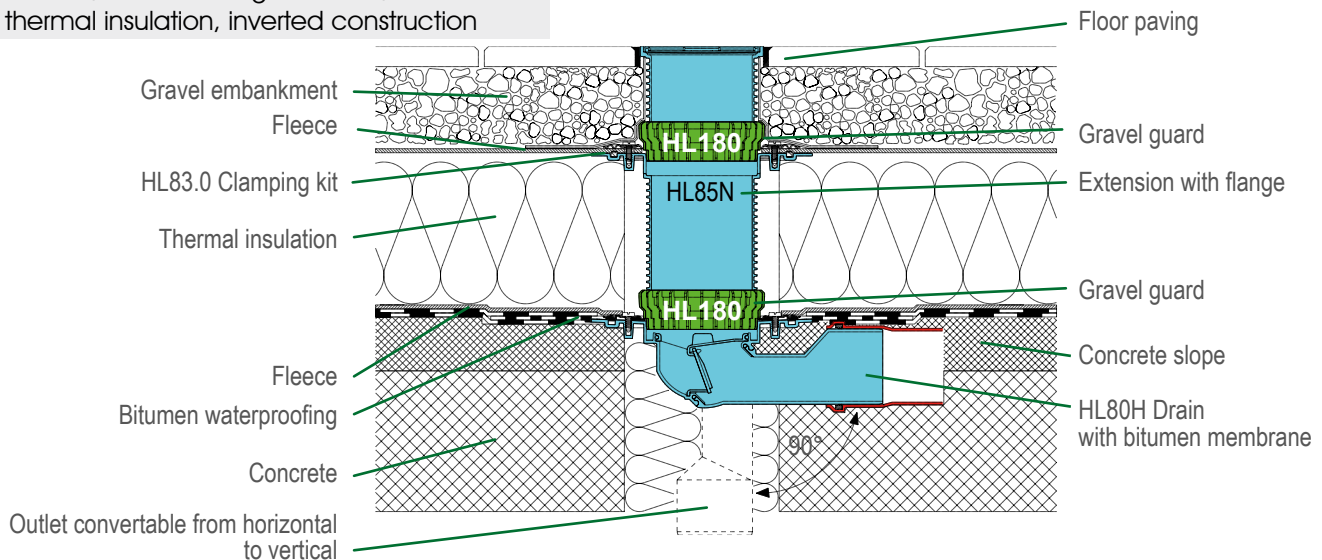
Additional information Acc. DIN 1986-100 it has to be checked at all roof constructions, if emergency overflows are necessary, considering the expected incidents of rain at the construction site, the construction itself, the hydro-insulation, the statics of the roof and the special character of the drainage system.

HL® Balcony and terrace drains – Sectional drawings

Terrace, slabs fit into gravel bed,
without heating



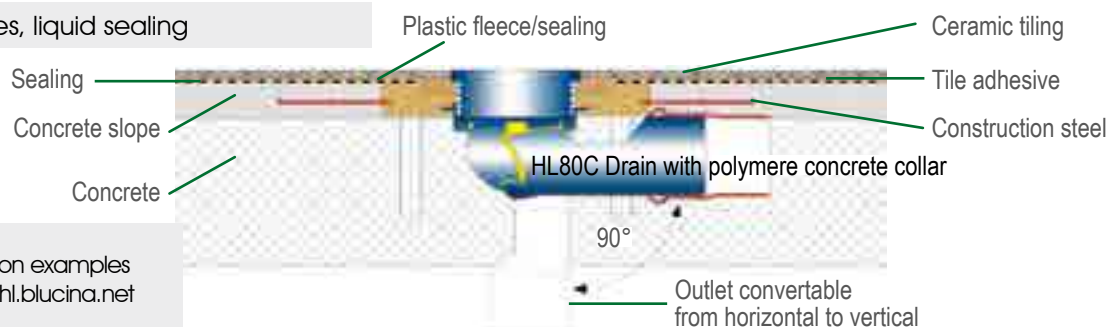
Terrace, slabs fit into gravel bed,
thermal insulation, inverted construction



Terrace with tiles, liquid sealing



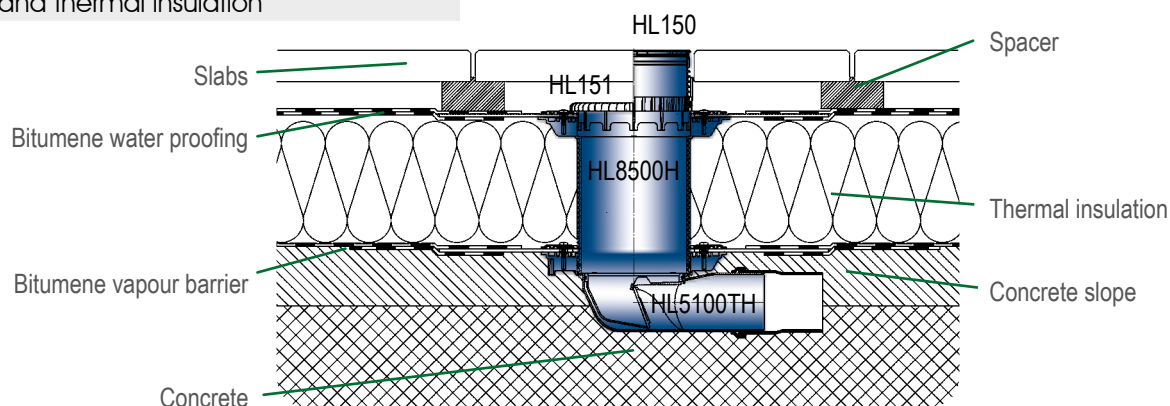
Terrace with tiles, liquid sealing



For more installation examples
please see <http://hl.blucina.net>

HL® Balcony and terrace drains – Sectional drawings

Terrace with slabs, layd with spacers, vapour barrier and thermal insulation



HL® Balcony and terrace drains – Installation

Terrace, slab fit into gravel bed, thermal insulation, inverted construction



1. Set gully including lot cover into the tap hole



2. Weld the prefabricated bitumene flange with the local bitumene waterproofing



3. Set the fleece, put on the gravel guard (HL180), apply the thermal insulation



4. Shorten extension with flange (HL85N) and adjust to the height of the thermal insulation, set on the gravel guard (HL180), set the lot cover



5. Clamp fleece between the stainless steel clamp ring (HL83.0) and the extension (HL85N), set the gravel guard (HL180), adjust the extension to the final slab height



6. Coat the gravel guard and the extension with fleece, fill in gravel embankment and lay the slabs, insert grate

HL® Balcony and terrace drains – Products – Overview

Drains



Product	HL80	HL80H	HL80C	HL5100T	HL5100TH
Description	Standard drain	Standard drain with bitumen flange	Drain with polymer concrete flange	Drain horizontal with high capacity	Drain horizontal with high capacity and bitumen flange
Function	Usage horizontal and vertical	Usage horizontal and vertical, especially for bitumen waterproofing	Usage horizontal and vertical, especially to connect to liquid sealing compounds	For surfaces up to 83m²	For surfaces up to 83m², for bitumen waterproofings

Extensions



Product	HL340N	HL3400	HL85N	HL8500
Description	Standard extension	Extension	Extension with flange	Extension with flange
Function	To elongate the extension	To elongate the extension, fits to drain series HL3100 and 5100	Adjustment of the drain to the waterproofing level	Adjustment of the drain to the waterproofing level. Fits to series HL3100 and HL5100

Sealing kits



Product	HL83	HL8300	HL83.0	HL8300.0	HL83.M	HL8300.M
Description	Sealing kit with EPDM-foil	Sealing kit with EPDM-foil	Sealing kit without foil	Sealing kit without foil	Sealing kit with textile coated membrane	Sealing kit with textile coated membrane
Function	For bitumen coatings	For bitumen coatings, fits to drain series HL3100 and 5100	Clamping of local waterproofings	For clamping of local waterproofings, fits to drain series HL3100 and HL5100	For liquid sealing compounds	For liquid sealing compounds, fits to drains HL3100-series and HL5100-series

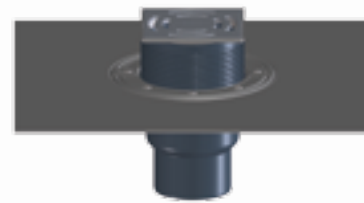
Accessories



Product	HL180	HL150	HL080.8E	HL157	HL82
Description	Gravel guard	Drainage element	Leaf catcher	Leaf catcher	Heating kit
Function	For the drainage of rain water on the waterproofing level, e.g. inverted construction	For the drainage of rain water on the waterproofing level, e.g. inverted roofs. For drains HL3100T-series and HL5100T-series.	For not walkable surfaces like gravel embankment, green surfaces	For not walkable surfaces like gravel embankment, green surfaces, fits to the drain series HL3100T and HL5100T	To heat the gully and to avoid ice

HL® Balcony and terrace drains – Products – Overview

ProductData see
chapter Sealing kits / Extensions



HL90.2

Drain horizontal

Extremely flat, for flat floor constructions

HL310N.2

Drain vertical

At tap holes, high capacity

HL3100T

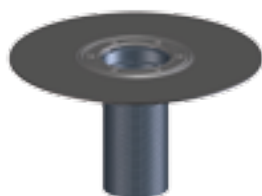
Drain vertical, high capacity

For surfaces up to 67m²

HL3100TH

Drain vertical, high capacity and bitumen flange

For surfaces up to 67m², especially for bitumen waterproofings



Product data see
chapter Sealing kits/Extensions

HL85NH

Extension with bitumen flange

Adjustment of the drain to the bitumen waterproofing

HL8500H

Extension with bitumen flange

Adjustment of the drain to the bitumen waterproofing level. Fits to series HL3100 and HL5100

HL85NC

Extension with polymere concrete flange

Adjustment of the drain to the liquid sealing compound



Product data see
chapter Sealing kits/Extensions

HL83.H

Sealing kit with bitumen flange

For bitumen waterpr. and liquid bitumen compounds

HL8300.H

Sealing kit with bitumen flange

For bitumen waterproofings and liquid bitumen compounds. Fits to drains HL3100-series and HL5100-series

HL83.P

Sealing kit with PVC-flange

For PVC-waterproofings

HL8300.P

Sealing kit with PVC-flange

For PVC-waterproofings. For drains HL3100-series and HL5100-series

HL83.PP

Sealing kit with PP-flange

For FPO-waterpr., based on PP

HL8300.PP

Sealing kit with PP-flange

For FPO waterproofings, based on PP. For drains HL3100-series and HL5100-series



HL181

Gravel trap

For slaps, fit into gravel embankment

HL151

Gravel guard

Below slaps or wooden panels. For drains HL3100T-series and HL5100T-series

HL152

Thermal insulation - horizontal

For upgrading HL5100T to an insulated version

HL153

Thermal insulation - vertical

For upgrading HL3100T to an insulated version

HL155

Thermal insulation kit incl. heating, horizontal

Upgrade kit, thermal insulated and with 18W/230V heating for HL5100T(H)

HL156

Thermal insulation kit incl. heating, vertical

Upgrade kit, thermal insulated and with 18W/230V heating for HL3100T(H)

HL® Balcony and terrace drains – Products – Data

Nearly every selection criteria are fulfilled with the drain series HL80. These gullies are equipped with ball-joint outlets, convertible from

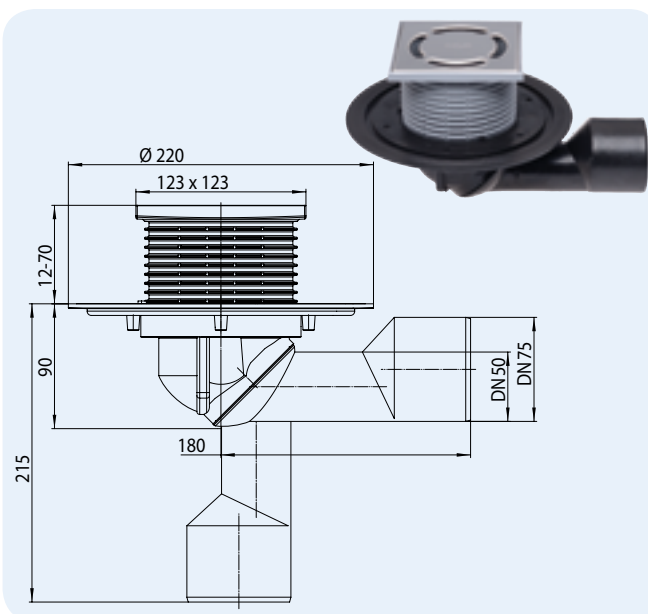
horizontal to vertical, DN50/75, made of PE (weldable and pluggable). All drains may be used for surfaces up to 25m²/drain.

	Flange for sealing kits HL83 series	Flange with bitumen membrane	„Ceradrain“ polymer concrete flange	DN	Capacity	Load classification
Stainless steel grate 115 x 115 mm Plastic frame 123 x 123 mm	HL80	HL80H	HL80C	50/75	0,80 l/s	K max. 300 kg
Cast iron grate 137 x 137 mm Cast iron frame 150 x 150 mm	HL81G	HL81GH		50/75	0,80 l/s	A max. 1500 kg

HL80 Balcony and terrace drain with convertible outlet

Data

Capacity	0,80 l/s
Material	PP, PE
Connection dimension	DN50/75 cuttable
Outlet	Convertible from horizontal to vertical, Material PE, pluggable and weldable
Extension	123 x 123 mm, cuttable
Inlet	Stainless steel grate 115 x 115 mm
Stench trap	Frost-proof flap
Standard	DIN 19535, 19560
Load classification	K3 – max. 300 kg
Additional information	For surfaces up to 26m² Recess dimensions: 185 x 340 mm, Tap hole diameter: 185mm
Including	Supporting frame, lot cover



HL37N



HL80K

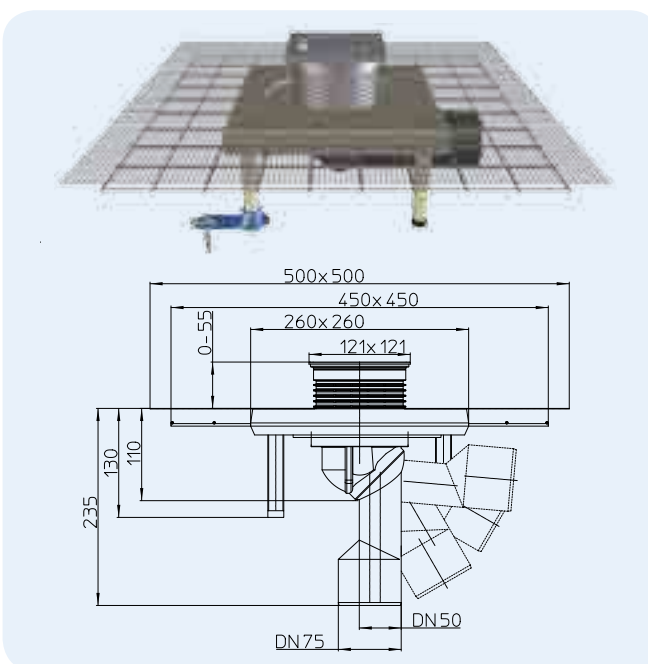


HL-No. 80	Dimension DN50/75	Weight 650 g	EAN +700806	Piece/package 1
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HL80C Balcony and terrace drain with polymer concrete flange

Data

Capacity	0,80 l/s
Material	PP, PE, polymere concrete collar
Connection dimens.	DN50/75 cuttable
Outlet	Convertible from horizontal to vertical, Material PE, pluggable and weldable
Extension	123 x 123 mm, cuttable
Inlet	Stainless steel grate 115 x 115 mm
Stench trap	Frost-proof flap
Standard	DIN 19535, 19560
Load classification	K3 – max. 300 kg
Recommended for	Liquid sealing compounds, especially for tile adhesives for thin-bed laying
Additional information	For surfaces up to 26m² Recess dimensions: 185 x 340 mm, Tap hole diameter: 185mm
Including	Supporting frame, Lid cover



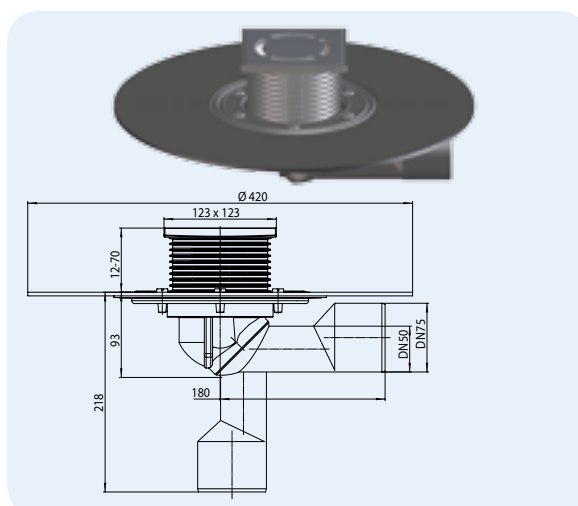
HL80CK



HL-No. 80C	Dimension DN50/75	Weight 4380 g	EAN +010806	Piece/package 1
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HL80H Balcony and terrace drain with bitumen flange**Data**

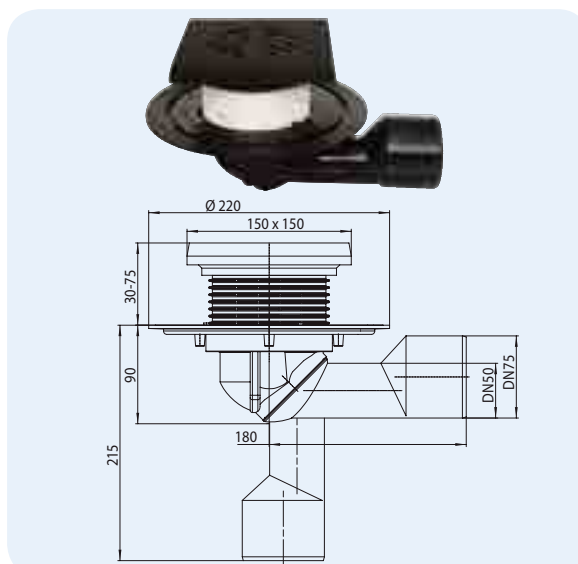
Capacity	0,80 l/s
Material	PP, PE, pre-welded bitumen membrane
Connection dimension	DN50/75 cuttable
Outlet	Convertible from horizontal to vertical, Material PE, pluggable and weldable
Extension	123 x 123 mm, cuttable
Stench trap	Frost-proof flap
Inlet	Stainless steel grate 115 x 115 mm
Standard	DIN 19535, 19560
Load classification	K3 – max. 300 kg
Recommended for	Bitumen waterproofings
Additional information	For surfaces up to 26m ² Recess dimensions: 185 x 340 mm, Tap hole diameter: 185mm
Including	Supporting frame, Lid cover



HL-No.	Dimension	Weight	EAN	Piece/package
80H	DN50/75	1300 g	+701803	1

HL81G Balcony and terrace drain with convertable outlet, cast iron frame and grate**Data**

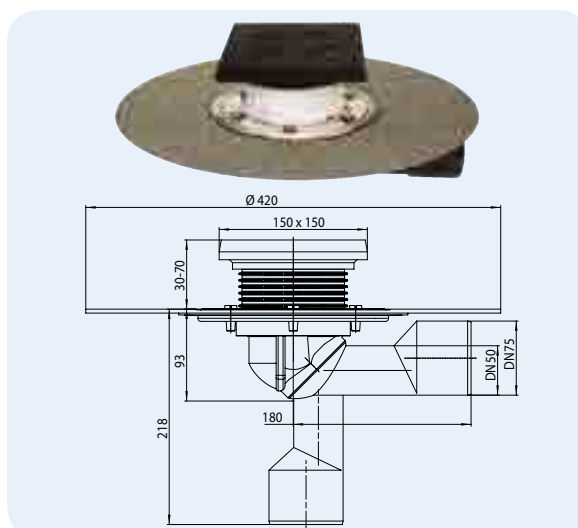
Capacity	0,80 l/s
Material	PP, PE, cast iron/PP
Connection dimension	DN50/75 cuttable
Outlet	Convertible from horizontal to vertical, Material PE, pluggable and weldable
Frame	Cast iron 150 x 150 mm
Extension	Plastic, cuttable
Inlet	Cast iron grate 137 x 137 mm
Stench trap	Frost-proof flap
Standard	DIN 19535, 19560
Load classification	A – max. 1,5 t
Recommended for	Loads up to 1,5 t
Additional information	For surfaces up to 26m ² Recess dimensions: 185 x 340 mm, Tap hole diameter: 185mm
Including	Lid cover



HL-No.	Dimension	Weight	EAN	Piece/package
81G	50/75	2620 g	+000876	1

HL81GH Balcony and terrace drain like HL81G, but with bitumen flange**Data**

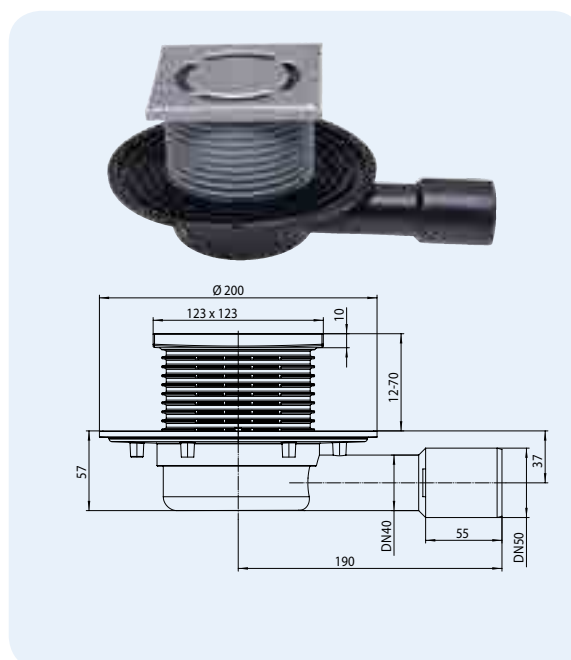
Capacity	0,80 l/s
Material	PP, PE, cast iron/PP pre-welded bitumen membrane
Connection dimension	DN50/75 cuttable
Outlet	Convertible from horizontal to vertical, Material PE, pluggable and weldable
Frame	Cast iron 150 x 150 mm
Extension	Plastic, cuttable
Inlet	Cast iron grate 137 x 137 mm
Stench trap	Frost-proof flap
Standard	DIN 19535, 19560
Load classification	A – max. 1,5 t
Recommended for	Bitumen waterproofings; Loads up to 1,5 t
Additional information	For surfaces up to 26m ² Recess dimensions: 185 x 340 mm, Tap hole diameter: 185mm
Including	Lid cover



HL-No.	Dimension	Weight	EAN	Piece/package
81GH	DN50/75	3170 g	+003372	1

HL90 Balcony and terrace drain, extra-flat, installation height 57 mm**Data**

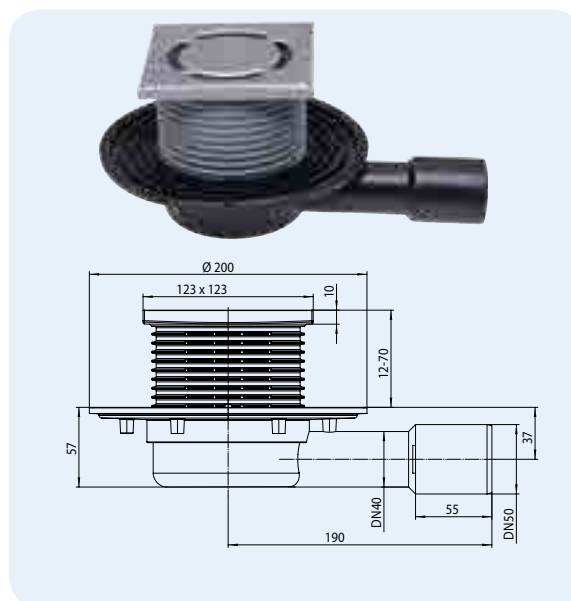
Capacity	0,56 l/s
Material	PE
Connection dimension	DN40/50 cuttable
Outlet	horizontal, pluggable and weldable
Extension	123 x 123 mm, cuttable
Inlet	Stainless steel grate 115 x 115 mm
Standard	DIN 19535, 19560
Load classification	K3 – max. 300 kg
Additional information	Installation height 57 mm; For surfaces up to 18m², Recess dimensions: 185 x 340 mm, frost-proof
Including	Supporting frame, Lot cover, Sand trap



HL-No. 90	Dimension DN40/50	Weight 425 g	EAN +006359	Piece/package 1
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HL90.2 Balcony and terrace drain like HL90, but with frost-proof stench trap**Data**

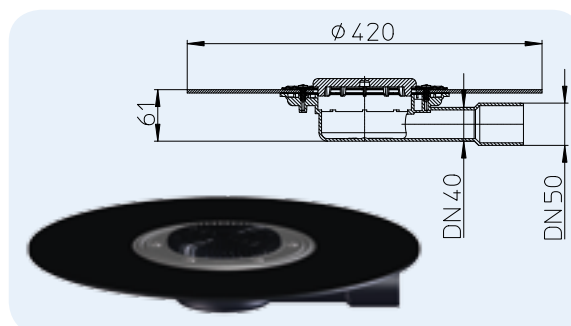
Capacity	0,50 l/s
Material	PE
Connection dimension	DN40/50 cuttable
Outlet	horizontal, pluggable and weldable
Extension	123 x 123 mm, cuttable
Inlet	Stainless steel grate 115 x 115 mm
Stench trap	Frost-proof flap
Standard	DIN 19535, 19560
Load classification	K3 – max. 300 kg
Additional information	Installation height 57 mm; For surfaces up to 16 m², Recess dimensions: 185 x 340 mm, frost-proof
Including	Supporting frame, Lot cover



HL-No. 90.2	Dimension DN40/50	Weight 425 g	EAN +016853	Piece/package 1
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HL90KH Drain body with bitumen flange, installation height 61 mm**Data**

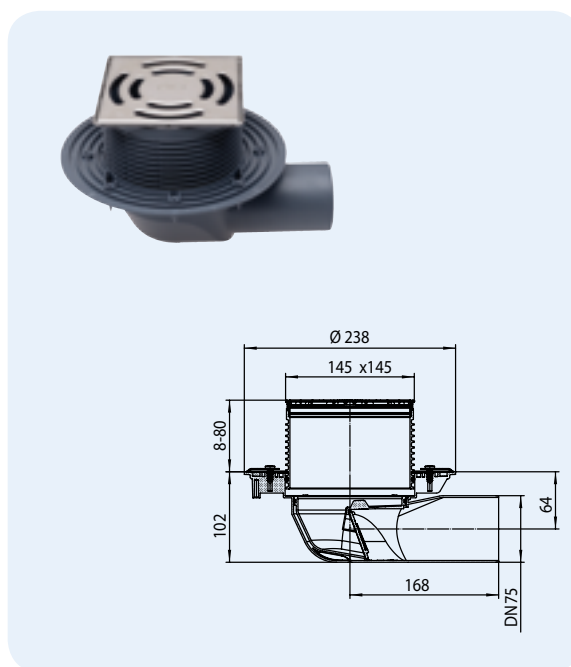
Capacity	0,60 l/s
Material	PE, pre-welded bitumen flange
Connection dimension	DN40/50 cuttable
Outlet	Horizontal, pluggable, and weldable
Cover	Flat leaf catcher HL181
Standard	DIN 19535, 19560
Additional information	Installation height 61 mm; for surfaces up to 20 m² (calculated with 300 lit of rainfall (s x ha), frost resistant, recess dimensions: 185 x 340 mm



HL-No. 90KH	Dimension DN40/50	Weight 1100 g	EAN +036998	Piece/package 1
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HL5100T Balcony and terrace drain, horizontal, with frost-proof flap; high capacity**Data**

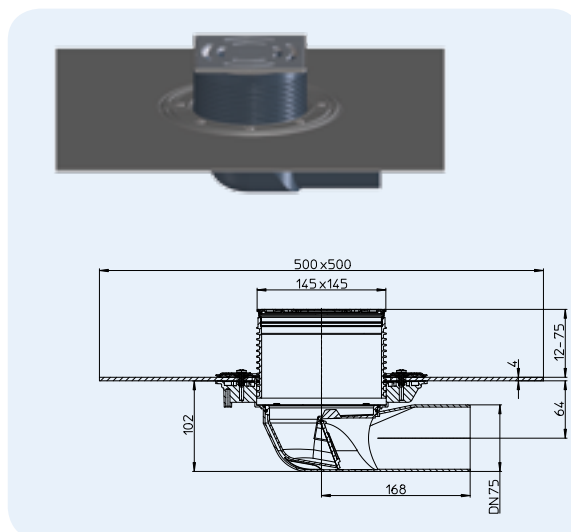
Capacity	2,5 l/s
Material	PP
Connection dimension	DN75
Outlet	horizontal, pluggable
Frame	145 x 145mm, stainless steel, cuttable in height
Grate	Stainless steel 138 x 138
Stench trap	Frost-proof flap
Standard	EN1253, DIN 19535, 19560
Load classification	K 3 - max. 300 kg
Additional information	For surfaces up to 83m ² ; Recess dimensions: min. 220 x 340 mm
Including	Supporting frame, lid cover



HL-No.	Dimension	Weight	EAN	Piece/package
5100T	DN75	904 g	+034703	1

HL5100TH Balcony and terrace drain like HL5100T, but with bitumen flange**Data**

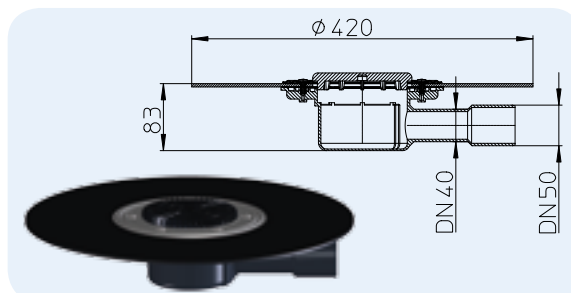
Capacity	2,5 l/s
Material	PP, pre-welded bitumen flange
Connection dimension	DN75
Outlet	horizontal, pluggable
Frame	145 x 145mm, stainless steel, cuttable in height
Grate	Stainless steel 138 x 138
Stench trap	Frost-proof flap
Standard	EN1253, DIN 19535, 19560
Load classification	K 3 - max. 300 kg
Additional information	For bitumen surfaces up to 83m ² ; Recess dimensions: min. 220 x 340 mm
Including	Supporting frame, lid cover



HL-No.	Dimension	Weight	EAN	Piece/package
5100TH	DN75	2266 g	+034710	1

HL510NKH Drain body with bitumen flange, installation height 83 mm**Data**

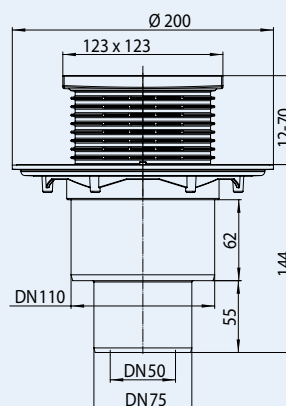
Capacity	0,7 l/s
Material	PE, pre-welded bitumen flange
Connection dimension	DN40/50 cuttable
Outlet	Horizontal, pluggable, and weldable
Cover	Flat leaf catcher HL181
Standard	DIN 19535, 19560
Additional information	Installation height 83 mm; for surfaces up to 23 m ² (calculated with 300 lit of rainfall (s x ha), frost resistant, recess dimensions: 185 x 340 mm



HL-No.	Dimension	Weight	EAN	Piece/package
510NKH	DN40/50	1100 g	+037001	1

HL310N.2 Balcony and terrace drain, high capacity, DN50/75/110**Data**

Capacity	0,90 l/s
Material	PE
Connection dimension	DN50/75/110 cuttable
Outlet	vertical, pluggable and weldable
Extension	123 x 123 mm, cuttable
Inlet	Stainless steel grate 115 x 115 mm
Stench trap	Frost-proof flap
Standard	DIN 19535, 19560
Load classification	K3 – max. 300 kg
Additional information	For surfaces up to 30m², Recess dimensions: min. 185 x 185 mm, Tap hole diameter: 180 mm, frost-proof
Including	Supporting frame, Lid cover



HL090.4E

HL37N

HL037Pr.1E



HL037N.0E



HL037N.2E



HL01067D



HL0300.0EN

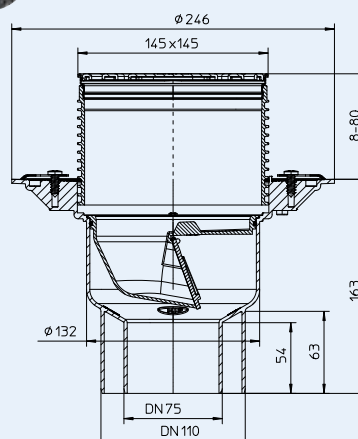


HL310NK

HL-No. 310N.2	Dimension DN50/75/110	Weight 635 g	EAN +021963	Piece/package 1
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HL3100T Balcony and terrace drain, vertical, with frost-proof flap; high capacity**Data**

Capacity	DN75 und DN110= 2 l/s
Material	PP
Connection dimension	DN75/110 vertical, pluggable
Frame	145 x 145mm, stainless steel, cuttable in height
Grate	Stainless steel 138 x 138
Stench trap	Frost-proof flap
Standard	EN1253, DIN 19535, 19560
Load classification	K 3 - max. 300 kg
Additional information	For surfaces up to 67m²; Recess dimensions: min. 220 x 220 mm, Tap hole diameter: 220 mm
Including	Supporting frame, lid cover



HL03910.1E



HL03900.0E



HL03910.2E



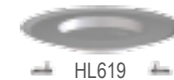
HL01093D



HL05100.4E



HL03100.0E



HL619

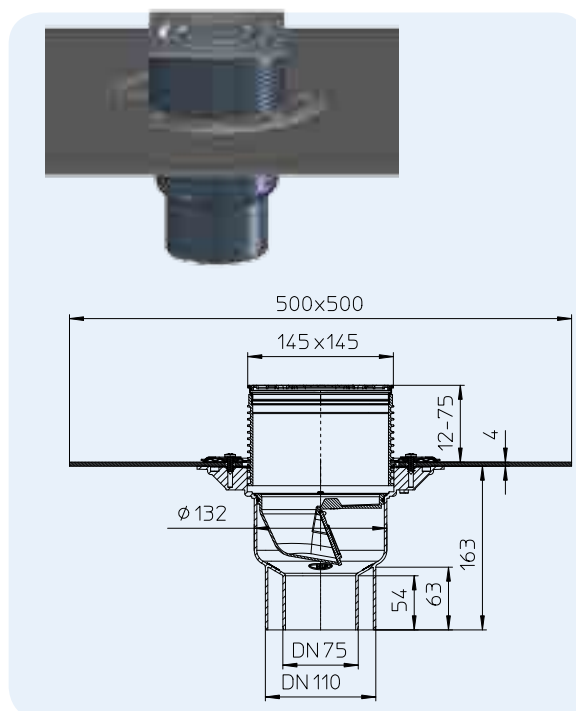


HL3100TK

HL-No. 3100T	Dimension DN75/110	Weight 954 g	EAN +034659	Piece/package 1
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HL3100TH Balcony and terrace drain like HL3100T, but with bitumen flange**Data**

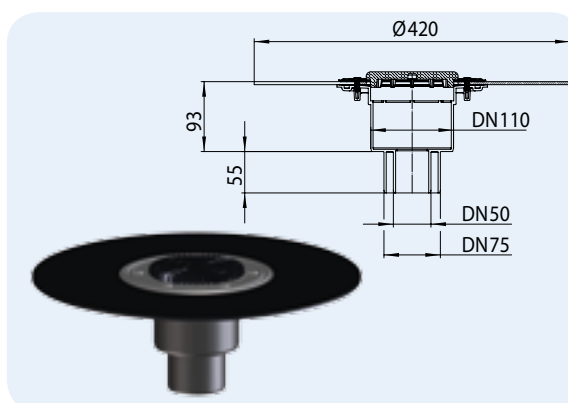
Capacity	DN75 and DN110= 2 l/s
Material	PP, pre-welded bitumen flange
Connection dimension	DN75/110 vertical, pluggable
Frame	145 x 145mm, stainless steel, cuttable in height
Grate	Stainless steel 138 x 138
Stench trap	Frost-proof flap
Standard	EN1253, DIN 19535, 19560
Load classification	K 3 - max. 300 kg
Additional information	For bitumen surfaces up to 67m ² ; Recess dimensions: min. 220 x 220 mm Tap hole diameter: 220 mm
Including	Supporting frame, lid cover



HL-No. 3100TH	Dimension DN75/110	Weight 2290 g	EAN +034666	Piece/package 1
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HL310NKH Drain body with bitumen flange**Data**

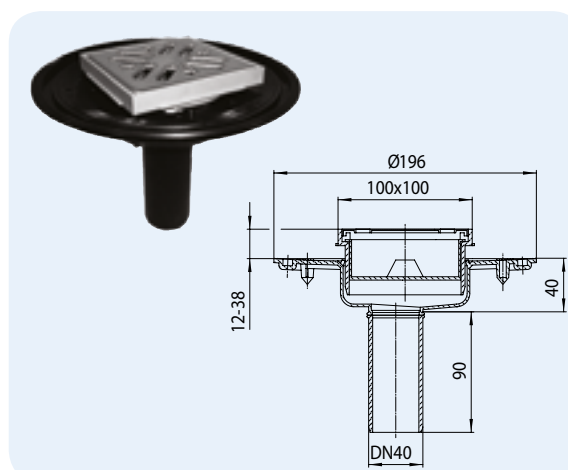
Capacity	1,65 l/s
Material	PE, werkseitig aufgeschweißte Bitumenbahn
Connection dimension	DN50/75/110 cuttable
Outlet	Vertical, pluggable, and weldable
Cover	Flat leaf catcher HL181
Standard	DIN 19535, 19560
Additional information	for surfaces up to 55 m ² (calculated with 300 lit of rainfall (s x ha), frost resistant, recess dimensions: 185 x 185 mm Core drilling 185mm



HL-No. 310NKH	Dimension DN50/75/110	Weight 1120 g	EAN +037018	Piece/package 1
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HL92 Balcony and terrace drain without stench trap**Data**

Capacity	0,5 l/s
Material	PE
Connection dimension	DN40
Outlet	vertical, pluggable and weldable
Extension	100 x 100 mm, cuttable
Inlet	Stainless steel grate 94 x 94 mm
Standard	DIN 19535, 19560
Load classification	K3 – max. 300 kg
Additional information	For surfaces up to 18m ² , Recess dimensions: 185 x 340 mm, frost-proof, without stench trap!
Including	Sand trap and Lot cover



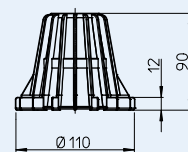
HL-No. 92	Dimension DN40	Weight 310 g	EAN +700929	Piece/package 1
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HL® Balcony and terrace drains – Accessories – Data

HL080.8E Leaf catcher

Data

Material	PP
Additional information	For non-walkable roofs. Fits to drains HL80-series, HL90 and HL310N.2

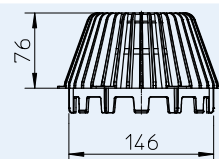


HL-No. 080.8E	Dimension Ø 110 mm	Weight 42 g	EAN +008087	Piece/package 1
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HL157 Leaf catcher

Data

Material	PP
Additional information	For non-walkable roofs. Fits to drains HL80-series, HL90 and HL310N.2

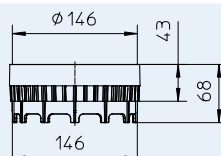


HL-No. 157	Dimension Ø 146 mm	Weight 110 g	EAN +603824	Piece/package 1
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HL150 Drainage element for drains HL3100T-series and HL5100T-series

Data

Material	PP
Additional information	For drainage of rain water on the waterproofing level, e.g. inverted construction

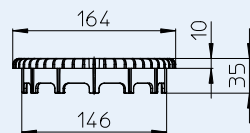


HL-No. 150	Dimension Ø 146 mm	Weight 72 g	EAN +034550	Piece/package 1
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HL151 Gravel guard for drains HL3100T-series and HL5100T-series

Data

Material	PP
Additional information	Flat gravel guard below slaps or wooden panels on terraces



HL-No. 151	Dimension Ø 146 mm	Weight 88 g	EAN +034567	Piece/package 1
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HL152 Thermal insulation element for HL5100T

Data

Material	EPS
Additional information	To be set on the drain body of HL5100T and to be fixed with 2 screws

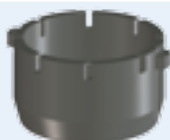


HL-No. 152	Dimension	Weight 220 g	EAN +034574	Piece/package 1
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HL153 Thermal insulation element for HL3100T

Data

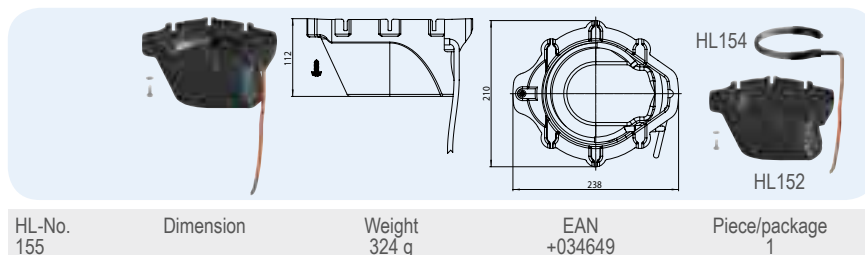
Material	EPS
Additional information	To be set on the drain body of HL3100T and to be fixed with 2 screws



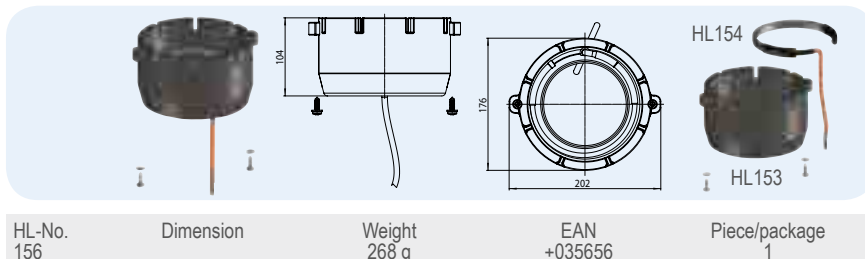
HL-No. 153	Dimension	Weight 162 g	EAN +034581	Piece/package 1
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HL155 Heating kit incl. thermo-insulation for HL5100T-terrace drain series**Data**

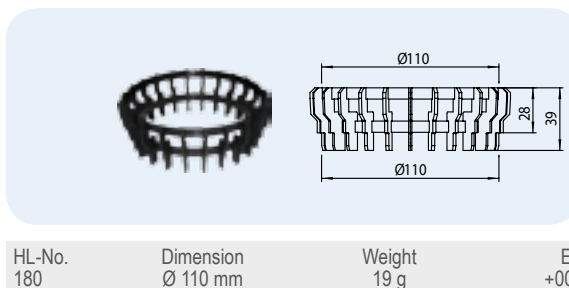
Material	EPS
Additional information	The thermo-insulation is fixed on the drain body 5100T by screws. The heating cable is self-regulating with 40W/M, 230V (appr. 12 - 14W cable). Overheating is impossible due to the characteristic of the cable.

**HL156** Heating kit incl. thermo-insulation for HL3100T-terrace drain series**Data**

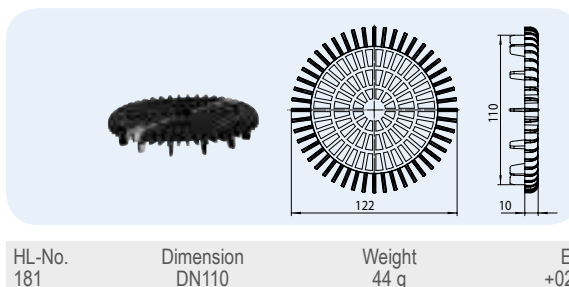
Material	EPS
Additional information	The thermo-insulation is fixed on the drain body 3100T by screws. The heating cable is self-regulating with 40W/M, 230V (appr. 12 - 14W cable). Overheating is impossible due to the characteristic of the cable.

**HL180** Drainage element for drains HL80-series, HL90 and HL310N.2**Data**

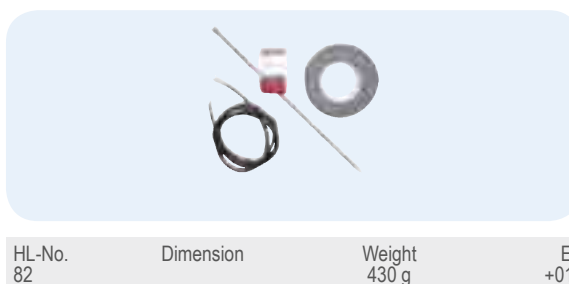
Material	PP
Additional information	For drainage of rain water on the waterproofing level, e.g. inverted construction

**HL181** Gravel guard for drains HL80-series, HL90 and HL310N.2**Data**

Material	PP
Additional information	flat gravel trap for the installation below slaps or duckboards on terraces

**HL82** Heating kit**Data**

Additional information	Self-adjusting heating set 18W / 230V. The set is equipped with a tripolar heat conductive ribbon, 1m long, insulation tape and lace. Overheating is impossible, because of the self-adjusting character of the heating. For HL80-series, HL90 and HL310N.2
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**HL619** Fixing brackets „FixIt“**Data**

Material	Stainless steel
Additional information	For a tight connection between drain and extension. Fits for all balcony- and terrace drains of HL

