

CHANGING THE GAME AT SEA

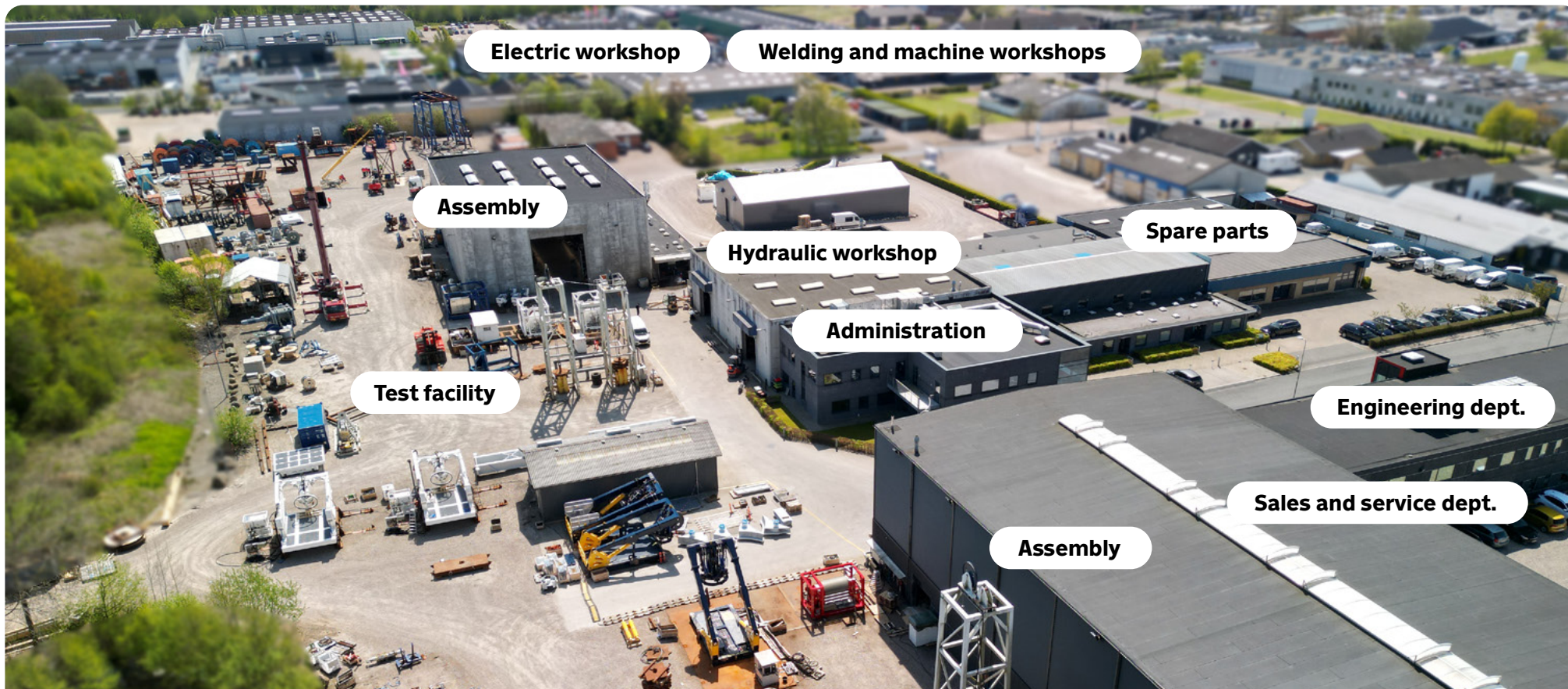
SH GROUP

Launch and Recovery Systems for HD, UHD-III

Product Catalogue

Standard launch and recovery solutions compatible with Schilling Robotics ROV type HD and UHD-III





Svendborg

SH GROUP A/S – HEADQUARTERS
DENMARK

- SH Group head office – administration, service, sales and engineering department.
- Hydraulic and service workshop
- Hose workshop
- Warehouse and spare part shop
- Assembly workshop
- Test areas and storage (not included in total m²)

- Machine workshop
- Welding workshop
- Stainless steel workshop
- Assembly workshop
- Goods reception and cutting workshop
- Electrical switchboard fabrication

Total of 17.300 m² / 186.200 Sqft.

Introduction

When engineering meets practice

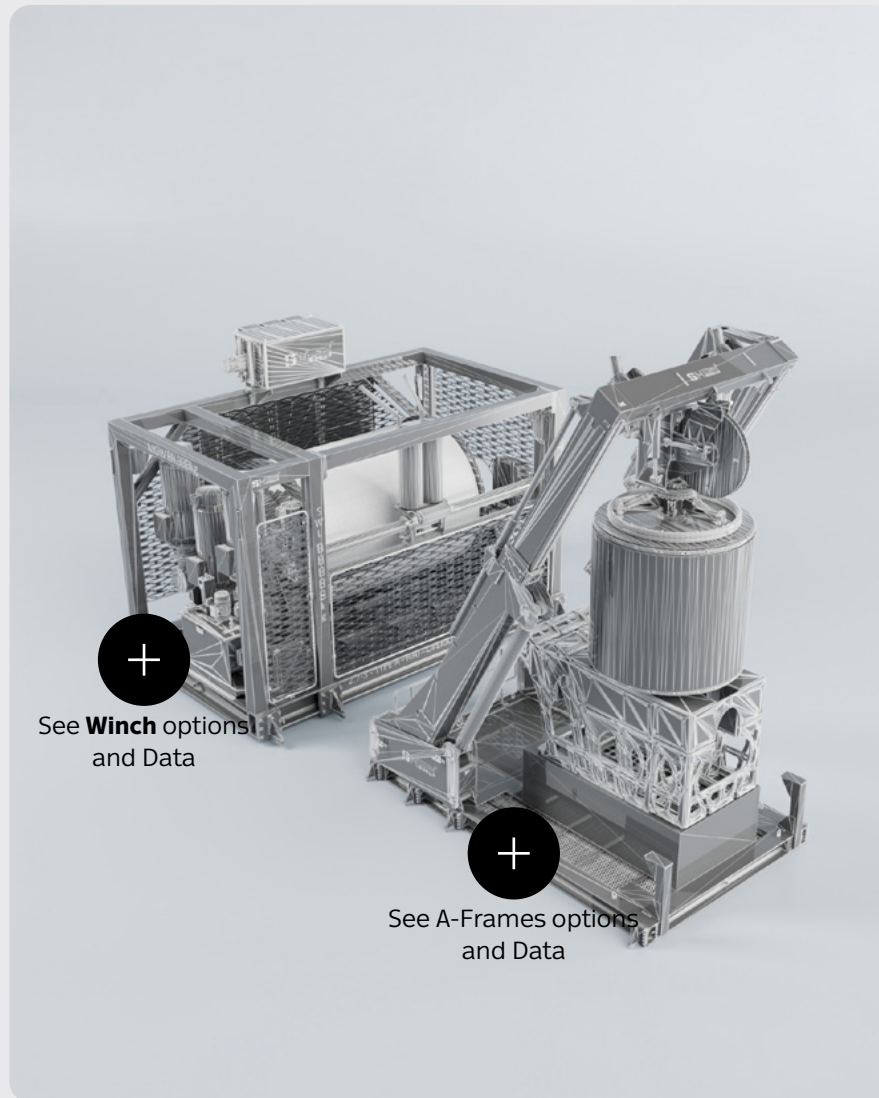
SH Group is pleased to present this standard product catalogue compatible with Schilling Robotics ROV type HD and UHD-III.

The systems are based on **SH Group**'s field proven design philosophies and control systems customized to meet specific requirements in Schilling Robotics purchase specs.

This standard program serves as a basis for Schilling Robotics to quote in **SH Group** LARS equipment matching the specified vehicles.

The equipment presentation is followed by a list of optional certification and design features typically added to the purchase. Both LARS systems and optional features do not represent the entire portfolio. For special requirements and general sales support, please reach out to **SH Group**'s sales team.

The sales team will also help with validation of installation layout to ensure compliance with umbilical fleet angle, height restrictions and other geometric and physical limitations.



Document introduction

Find the right equipment for your ROV

1



Select ROV platform by pressing the tab

2



Select desired equipment from the quick guide and dive into the details on following pages

3



Configure your equipment with optional certificates and features

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

● HD 3K - LARS >

● HD 4K - LARS >

● UHD-III 3K - LARS >

● UHD-III 4K - LARS >

● OPTIONS AND DATA >

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

● HD 3K – Technical Data

Data - Schilling HD purchase specification 3K			131-0109
Operating Parameters	Specification	Units	Note
Operating Depth 3K	3000	m	
Umbilical Length installed 3K	3300	m	
ROV Air Weight	3700	kg	
ROV Through-Frame Lift	3000	kg	
TMS Air Weight	2865	kg	
TMS Water Weight	1600	kg	
TMS Dimensions	2263mm (ø) x 2210mm (H) [2515mm (H) incl. bullet]	mm	Not SHG bullet design
ROV Dimensions	2941mm (L) x 1700mm (W) x 2086mm (H)	mm	
Skid Dimensions	3205mm (L) x 1852mm (W) x 985mm (H)	mm	
Umbilical Diameter	28.5 mm ± 0.5 mm	mm	
Umbilical Weight seawater	2164	kg/km	(Tyco=2164, Nexans=1880)
Umbilical Weight air	2739	kg/km	(Tyco=2739, Nexans=2530)
Umbilical minimum bend diameter	1140	mm	(Tyco=1140, Nexans=900)

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

● HD 3K – Quickguide

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA



3K



Front Spooling Winch

Winch (FS) 10075474

3K



Right Angle Winch

Winch (RA) 10072093

3K / 4K



Telescopic Luffing A-frame without base frame

A-Frame (DPL) 10020665

3K / 4K



Simple luffing A-Frame

A-frame (SPL) 10073120

3K / 4K



Telescopic Luffing A-Frame

A-Frame (DPL) 10072364

3K / 4K



Low dipping A-Frame

A-frame (LPL) 10082105

3K / 4K

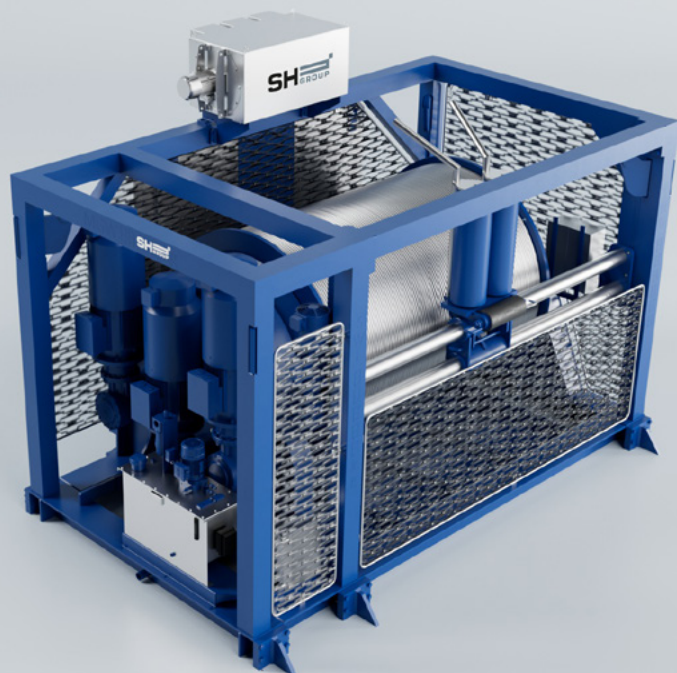


Low dipping telescopic A-Frame

A-frame (CPL) SEP-O-00270-A-XD-0001

Winch FS

Front Spooling Winch



Description	OFL FS Winch for HD 3K
Product key	OFL-2800-A3-4-180-130-FS-NZ-004
GA Drawing	10075474
Specification	See specification section + GA
Capacity	3300 m Ø28,5 in 10 layers
Pull force bottom / top	130 / 95 kN
Speed	61-85 m/min
AHC Depth	1500 m
AHC Performance	2 m/s ² and 1,65 m/s

Performance Winch - HD 3K			
Definitions	Forces	Units	Note
Speed top purchase spec Speed top actual driveline	60 85	m/min m/min	Requested In compliance (AHC)
Speed bottom purchase spec Speed bottom actual driveline	40 61	m/min m/min	Requested In compliance
Pull top (calculated) Pull top purchase spec Pull top actual driveline	94 95 95	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
Pull bottom (calculated) Pull bottom purchase spec Pull bottom actual driveline	86 129 130	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DF	2	ψ	Standard

HD 3K

HD 4K

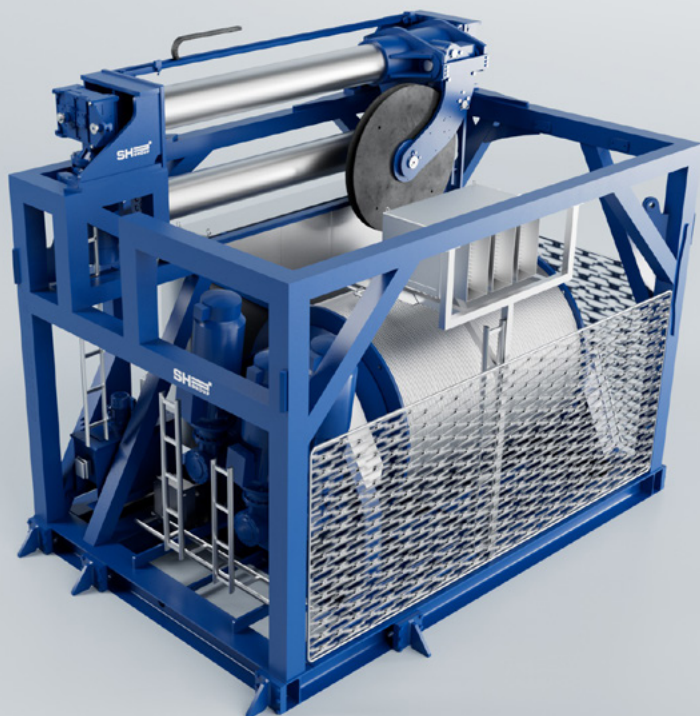
UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

Winch RALW

Right Angle Winch



Description	OFL RA Winch for HD 3K
Product key	OFL-2800-A3-4-180-130-RA-NZ-XXX
GA Drawing	10072093
Specification	See specification section + GA
Capacity	3300 m Ø28,5 in 10 layers
Pull force bottom / top	130 / 95 kN
Speed	61-85 m/min
AHC Depth	1500 m
AHC Performance	2 m/s ² and 1,65 m/s

Performance Winch - HD 3K			
Definitions	Forces	Units	Note
Speed top purchase spec Speed top actual driveline	60 85	m/min m/min	Requested In compliance (AHC)
Speed bottom purchase spec Speed bottom actual driveline	40 61	m/min m/min	Requested In compliance
Pull top (calculated) Pull top purchase spec Pull top actual driveline	94 95 95	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
Pull bottom (calculated) Pull bottom purchase spec Pull bottom actual driveline	86 129 130	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DF	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame SPL

Simple luffing A-Frame



Description	SPL-10 for HD 3K / 4K
Product key	SPL-10-S-4.6-3.0-NZ-003
GA Drawing	10073120
Specification	See specification section + GA
SWL Air	10 T @ DAF3
SWL Sub	15 T @ DAF2
Outreach	4,6 m

Performance A-Frame - HD 3K			
Definitions	Forces	Units	Note
SWL air (calculated) SWL air purchase spec SWL air SPL-10	94 95 98	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
DAF air	3	ψ	Standard
SWL sub (calculated) SWL sub purchase spec SWL sub 3K A-frames	86 147 147	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame DPL

Telescopic Luffing A-Frame



DescriptionDPL-10 for HD 3K / 4K	
Product key	DPL-10-S-4.5-3.0-NZ-XXX
GA Drawing	10072364
Specification	See specification section + GA
SWL Air	10 T @ DAF3
SWL Sub	15 T @ DAF2
Outreach	4,5 m

Performance A-Frame - HD 3K			
Definitions	Forces	Units	Note
SWL air (calculated) SWL air purchase spec SWL air DPL-10	94 95 98	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
DAF air	3	ψ	Standard
SWL sub (calculated) SWL sub purchase spec SWL sub 3K A-frames	86 147 147	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame DPL (Without base frame)

Telescopic Luffing A-Frame



Description	DPL-10 HD 3K / 4K
Product key	DPL-10-S-6.0-3.0-NZ-001
GA Drawing	10020665
Specification	See specification section + GA
SWL Air	10 T @ DAF3
SWL Sub	15 T @ DAF2
Outreach	6,5 m

Performance A-Frame - HD 3K			
Definitions	Forces	Units	Note
SWL air (calculated) SWL air purchase spec SWL air DPL-10	94 95 98	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
DAF air	3	ψ	Standard
SWL sub (calculated) SWL sub purchase spec SWL sub 3K A-frames	86 147 147	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame LPL

Low dipping A-Frame



Description	LPL-10 for HD 3K / 4K
Product key	LPL-10-L-7.8-3.0-NZ-XXX
GA Drawing	10082105
Specification	See specification section + GA
SWL Air	10 T @ DAF3
SWL Sub	15 T @ DAF2
Outreach	7,8 m

Performance A-Frame - HD 3K			
Definitions	Forces	Units	Note
SWL air (calculated) SWL air purchase spec SWL air LPL-10	94 95 98	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
DAF air	3	ψ	Standard
SWL sub (calculated) SWL sub purchase spec SWL sub 3K A-frames	86 147 147	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame CPL (Without base frame)

Low dipping, telescopic A-Frame



Description	CPL-10 for HD 3K / 4K
Product key	CPL-10-S-6.8-2.8-NZ-XXX
GA Drawing	SEP-O-000270-A-XD-0001
Specification	See specification section + GA
SWL Air	10 T @ DAF3
SWL Sub	15 T @ DAF2
Outreach	6,8 m

Performance A-Frame - HD 3K			
Definitions	Forces	Units	Note
SWL air (calculated) SWL air purchase spec SWL air CPL-10	94 95 98	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
DAF air	3	ψ	Standard
SWL sub (calculated) SWL sub purchase spec SWL sub 3K A-frames	86 147 147	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA



● HD 4K – Technical Data

Data - Schilling HD purchase specification 4K			131-0209
Operating Parameters	Specification	Units	Note
Operating Depth 4K	4000	m	
Umbilical Length installed 4K	4500	m	
ROV Air Weight	3700	kg	
ROV Through-Frame Lift	3000	kg	
TMS Air Weight	2865	kg	
TMS Water Weight	1600	kg	
TMS Dimensions	2263mm (ø) x 2210mm (H) [2515mm (H) incl. bullet]	mm	Not SHG bullet design
ROV Dimensions	2941mm (L) x 1700mm (W) x 2086mm (H)	mm	
Skid Dimensions	3205mm (L) x 1852mm (W) x 985mm (H)	mm	
Umbilical Diameter	28.5 mm ± 0.5 mm	mm	
Umbilical Weight seawater	2164	kg/km	(Tyco=2164, Nexans=1880)
Umbilical Weight air	2739	kg/km	(Tyco=2739, Nexans=2530)
Umbilical min. Bend diameter	1140	mm	(Tyco=1140, Nexans=900)

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

● HD 4K – Quickguide



4K



Front Spooling Winch

Winch (FS) 10072016

4K



Right Angle Winch

Winch (RA) 10072116

3K / 4K



Telescopic Luffing A-frame without base frame

A-Frame (DPL) 10020665

3K / 4K



Simple luffing A-Frame

A-frame (SPL) 10073120

3K / 4K



Telescopic Luffing A-Frame

A-Frame (DPL) 10072364

3K / 4K



Low dipping A-Frame

A-frame (LPL) 10082105

3K / 4K



Low dipping telescopic A-Frame

A-frame (CPL) SEP-O-00270-A-XD-0001

HD 3K

HD 4K

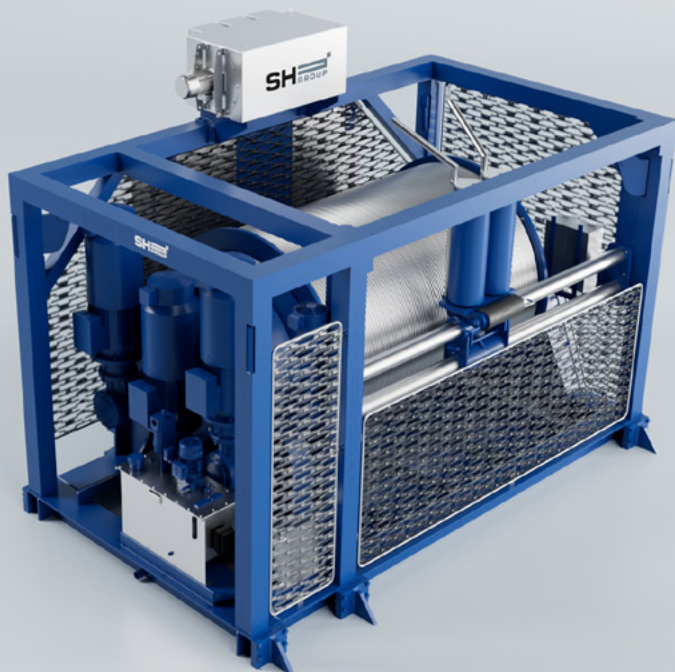
UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

Winch FS

Front Spooling Winch



Description	OFL FS Winch for HD 4K
Product key	OFL-4600-A3-4-312-160-FS-NZ-XXX
GA Drawing	10072016
Specification	See specification section + GA
Capacity	4500 m Ø28,5 mm in 15 layers
Pull force bottom / top	160 / 100 kN
Speed	61-98 m/min
AHC Depth	3000 m
AHC Performance	2 m/s² and 1,7 m/s

Performance Winch - HD 4K			
Definitions	Forces	Units	Note
Speed top purchase spec Speed top actual driveline	60 98	m/min m/min	Requested In compliance (AHC)
Speed bottom purchase spec Speed bottom actual driveline	40 61	m/min m/min	Requested In compliance
Pull top (calculated) Pull top purchase spec Pull top actual driveline	94 95 100	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
Pull bottom (calculated) Pull bottom purchase spec Pull bottom actual driveline	111 159 160	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DF	2	ψ	Standard

HD 3K

HD 4K

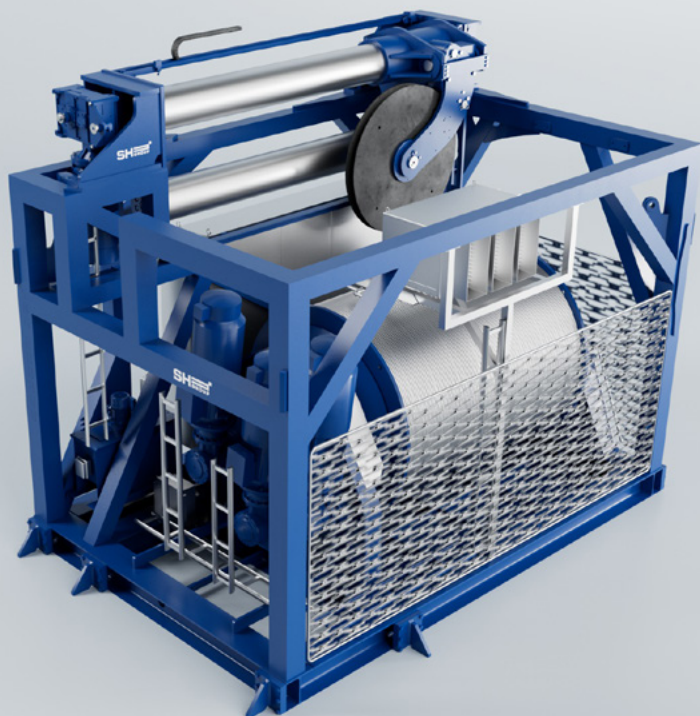
UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

Winch RALW

Right Angle Winch



Description	OFL RA Winch for HD 4K
Product key	OFL-4600-A3-4-312-160-RA-NZ-XXX
GA Drawing	10072116
Specification	See specification section + GA
Capacity	4500 m Ø28,5 mm in 15 layers
Pull force bottom / top	160 / 100 kN
Speed	61-98 m/min
AHC Depth	3000 m
AHC Performance	2 m/s ² and 1,7 m/s

Performance Winch - HD 4K			
Definitions	Forces	Units	Note
Speed top purchase spec Speed top actual driveline	60 98	m/min m/min	Requested In compliance (AHC)
Speed bottom purchase spec Speed bottom actual driveline	40 61	m/min m/min	Requested In compliance
Pull top (calculated) Pull top purchase spec Pull top actual driveline	94 95 100	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
Pull bottom (calculated) Pull bottom purchase spec Pull bottom actual driveline	111 159 160	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DF	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame SPL

Simple luffing A-Frame



Description		SPL-10 for HD 3K / 4K
Product key		SPL-10-S-4.6-3.0-NZ-003
GA Drawing		10073120
Specification		See specification section + GA
SWL Air		10 T @ DAF3
SWL Sub		15 T @ DAF2
Outreach		4,6 m

Performance A-Frame - HD 4K			
Definitions	Forces	Units	Note
SWL air (calculated)	94	kN	TMS + ROV + Through-Frame Defining In compliance
SWL air purchase spec	95	kN	
SWL air SPL-10	98	kN	
DAF air	3	ψ	Standard
SWL sub (calculated)	111	kN	TMS + Umbilical Defining In compliance (SWL)
SWL sub purchase spec	147	kN	
SWL sub 4K A-frames	147	kN	
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame DPL

Telescopic Luffing A-Frame



Description	DPL-10 for HD 3K / 4K
Product key	DPL-10-S-4.5-3.0-NZ-XXX
GA Drawing	10072364
Specification	See specification section + GA
SWL Air	10 T @ DAF3
SWL Sub	15 T @ DAF2
Outreach	4,5 m

Performance A-Frame - HD 4K			
Definitions	Forces	Units	Note
SWL air (calculated)	94	kN	TMS + ROV + Through-Frame
SWL air purchase spec	95	kN	Defining
SWL air DPL-10	98	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	111	kN	TMS + Umbilical
SWL sub purchase spec	147	kN	Defining
SWL sub 4K A-frames	147	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame DPL (Without base frame)

Telescopic Luffing A-Frame



Description	DPL-10 HD 3K / 4K
Product key	DPL-10-S-6.0-3.0-NZ-001
GA Drawing	10020665
Specification	See specification section + GA
SWL Air	10 T @ DAF3
SWL Sub	15 T @ DAF2
Outreach	6,5 m

Performance A-Frame - HD 3K			
Definitions	Forces	Units	Note
SWL sub (calculated) SWL sub purchase spec SWL air DPL-10	94 95 98	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
DAF air	3	ψ	Standard
SWL sub (calculated) SWL sub purchase spec SWL sub 3K A-frames	86 147 147	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame LPL

Low dipping A-Frame



Description		LPL-10 for HD 3K / 4K
Product key		LPL-10-L-7.8-3.0-NZ-XXX
GA Drawing		10082105
Specification		See specification section + GA
SWL Air		10 T @ DAF3
SWL Sub		15 T @ DAF2
Outreach		7,8 m

Performance A-Frame - HD 4K			
Definitions	Forces	Units	Note
SWL sub (calculated) SWL sub purchase spec SWL air LPL-10	94 95 98	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
DAF air	3	ψ	Standard
SWL sub (calculated) SWL sub purchase spec SWL sub 4K A-frames	111 147 147	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame CPL

(Without base frame)

Low dipping, telescopic A-Frame



Description		CPL-10 for HD 3K / 4K
Product key		CPL-10-S-6.8-2.8-NZ-XXX
GA Drawing		SEP-O-000270-A-XD-0001
Specification		See specification section + GA
SWL Air		10 T @ DAF3
SWL Sub		15 T @ DAF2
Outreach		6,8 m

Performance A-Frame - HD 4K			
Definitions	Forces	Units	Note
SWL sub (calculated)	94	kN	TMS + ROV + Through-Frame Defining In compliance
SWL sub purchase spec	95	kN	
SWL air CPL-10	98	kN	
DAF air	3	ψ	Standard
SWL sub (calculated)	111	kN	TMS + Umbilical Defining In compliance (SWL)
SWL sub purchase spec	147	kN	
SWL sub 4K A-frames	147	kN	
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA



● UHD-III 3K – Technical Data

Data - Schilling UHD-III purchase specification 3K			131-0309
Operating Parameters	Specification	Units	Note
Operating Depth 3K	3000	m	
Umbilical Length installed 3K	3300	m	
ROV Air Weight	5500	kg	
ROV Through-Frame Lift	3500	kg	
TMS Air Weight	2800	kg	
TMS Water Weight	2000	kg	
TMS Dimensions	2263mm (ø) x 2241mm (H) [2546mm (H) incl. bullet]	mm	Not SHG bullet design
ROV Dimensions	3540mm (L) x 1920mm (W) x 2180mm (H)	mm	
Skid Dimensions	3540mm (L) x 1920mm (W) x 985mm (H)	mm	
Umbilical Diameter	34.1 mm ± 1 mm	mm	
Umbilical Weight seawater	3150	kg/km	(Tyco=3061, Nexans=3000, Fibron=3150)
Umbilical Weight air	4100	kg/km	(Tyco=3908, Nexans=3900, Fibron=4100)
Umbilical min. Bend diameter	1150	mm	(Tyco=1140, Nexans=900, Fibron=1100)

● UHD-III 3K – Quickguide



3K



Front Spooling Winch

Winch (FS) 10073234

3K



Right Angle Winch

Winch (RA) 10072120

3K / 4K



Telescopic Luffing A-frame without base frame

A-Frame (DPL) 10081531

3K / 4K



Simple luffing A-Frame

A-frame (SPL) 10072518

3K / 4K



Telescopic Luffing A-Frame

A-Frame (DPL) 10073232

3K / 4K



Low dipping A-Frame

A-frame (LPL) 10082108

3K / 4K



Low dipping telescopic A-Frame

A-frame (CPL) CLP15-200-001

HD 3K

HD 4K

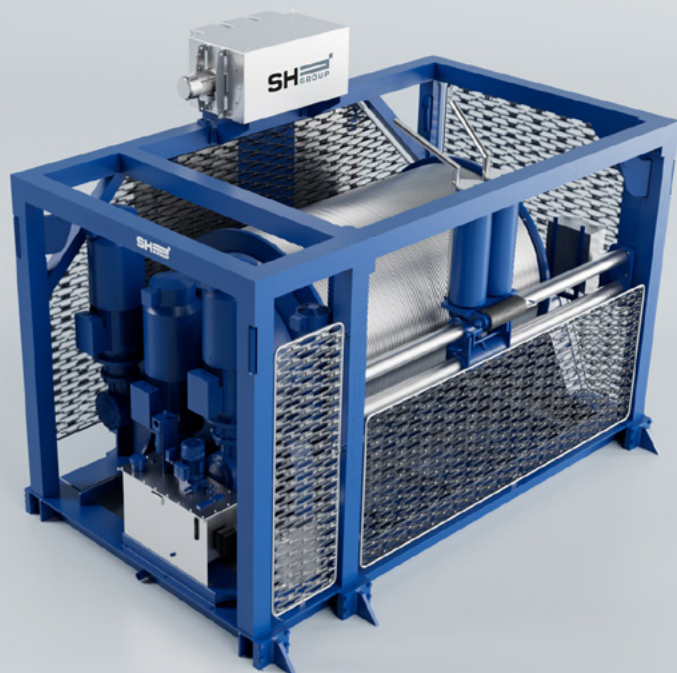
UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

Winch FS

Front Spooling Winch

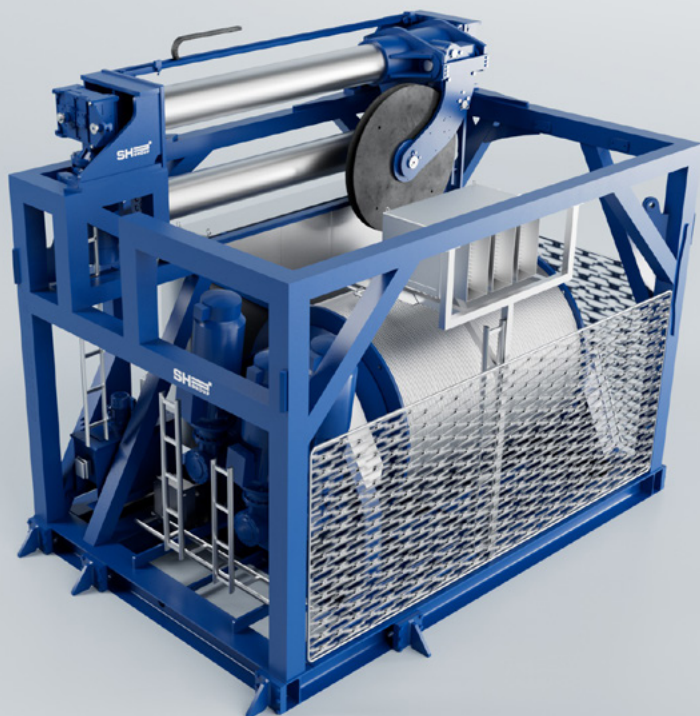


Description	OFL FS Winch for UHD-III 3K
Product key	OFL-4600-A3-4-312-195-FS-NZ-XXX
GA Drawing	10073234
Specification	See specification section + GA
Capacity	3300 m Ø34,1 mm in 13 layers
Pull force bottom / top	195 / 125 kN
Speed	61-99 m/min
AHC Depth	2600 m
AHC Performance	1,6 m/s ² and 1,6 m/s

Performance Winch - UHD-III 3K			
Definitions	Forces	Units	Note
Speed top purchase spec Speed top actual driveline	60 99	m/min m/min	Requested In compliance (AHC)
Speed bottom purchase spec Speed bottom actual driveline	40 61	m/min m/min	Requested In compliance
Pull top (calculated) Pull top purchase spec Pull top actual driveline	116 125 125	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
Pull bottom (calculated) Pull bottom purchase spec Pull bottom actual driveline	122 169 195	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DF	2	ψ	Standard

Winch RALW

Right Angle Winch



Description	OFL RA Winch for UHD-III 3K
Product key	OFL-4600-A3-4-312-195-RA-NZ-XXX
GA Drawing	10072120
Specification	See specification section + GA
Capacity	3300 m Ø34,1 mm in 13 layers
Pull force bottom / top	195 / 125 kN
Speed	61-99 m/min
AHC Depth	2600 m
AHC Performance	1,6 m/s ² and 1,6 m/s

Performance Winch - UHD-III 3K			
Definitions	Forces	Units	Note
Speed top purchase spec Speed top actual driveline	60 99	m/min m/min	Requested In compliance (AHC)
Speed bottom purchase spec Speed bottom actual driveline	40 61	m/min m/min	Requested In compliance
Pull top (calculated) Pull top purchase spec Pull top actual driveline	116 125 125	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
Pull bottom (calculated) Pull bottom purchase spec Pull bottom actual driveline	159 169 195	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DF	2	ψ	Standard

A-Frame SPL

Simple luffing A-Frame



Description		SPL-15 for UHD-III 3K / 4K
Product key		SPL-15-S-4.7-3.0-NZ-XXX
GA Drawing		10072518
Specification		See specification section + GA
SWL Air		15 T @ DAF3
SWL Sub		22,5 T @ DAF2
Outreach		4,7 m

Performance A-Frame - UHD-III 3K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air SPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	122	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 3K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

A-Frame DPL

Telescopic Luffing A-Frame



Description	DPL-15 for UHD-III 3K / 4K
Product key	DPL-15-S-6.7-3.0-NZ-XXX
GA Drawing	10073232
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	6,7 m

Performance A-Frame - UHD-III 3K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air DPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	122	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 3K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame DPL (Without base frame)

Telescopic Luffing A-Frame



Description	DPL-15 UHD-III 3K / 4K
Product key	DPL-15-S-6.8-3.2-NZ-020
GA Drawing	10081531
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	6,8 m

Performance A-Frame - UHD-III 3K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air DPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	122	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 3K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

A-Frame LPL

Low dipping A-Frame



Description	LPL-15 for UHD-III 3K / 4K
Product key	LPL-15-L-7.8-3.0-NZ-XXX
GA Drawing	10082108
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	7,8 m

Performance A-Frame - UHD-III 3K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air LPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	122	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 3K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

A-Frame CPL (Without base frame)

Low dipping, telescopic A-Frame



Description	CPL-15 for UHD-III 3K / 4K
Product key	CPL-15-S-6.9-3.5-NZ-XXX
GA Drawing	CPL15-200-001
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	6,8 m

Performance A-Frame - UHD-III 3K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air CPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	122	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 3K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA



● UHD-III 4K – Technical Data

Data - Schilling UHD-III purchase specification 4K			131-0409
Operating Parameters	Specification	Units	Note
Operating Depth 4K	4000	m	
Umbilical Length installed 4K	4500	m	
ROV Air Weight	5500	kg	
ROV Through-Frame Lift	3500	kg	
TMS Air Weight	2800	kg	
TMS Water Weight	2000	kg	
TMS Dimensions	2263mm (ø) x 2241mm (H) [2546mm (H) incl. bullet]	mm	Not SHG bullet design
ROV Dimensions	3540mm (L) x 1920mm (W) x 2180mm (H)	mm	
Skid Dimensions	3540mm (L) x 1920mm (W) x 985mm (H)	mm	
Umbilical Diameter	34.1 mm ± 0.5 mm	mm	
Umbilical Weight seawater	3150	kg/km	(Tyco=3061, Nexans=3000, Fibron=3150)
Umbilical Weight air	4100	kg/km	(Tyco=3908, Nexans=3900, Fibron=4100)
Umbilical min. Bend diameter	1150	mm	(Tyco=1140, Nexans=900, Fibron=1100)

● UHD-III 4K – Quickguide



4K



Front Spooling Winch

Winch (FS) 10072032

4K



Right Angle Winch

Winch (RA) 10072123

3K / 4K



Telescopic Luffing A-frame without base frame

A-Frame (DPL) 10081531

3K / 4K



Simple luffing A-Frame

A-frame (SPL) 10072518

3K / 4K



Telescopic Luffing A-Frame

A-Frame (DPL) 10073232

3K / 4K



Low dipping A-Frame

A-frame (LPL) 10082108

3K / 4K



Low dipping telescopic A-Frame

A-frame (CPL) CLP15-200-001

HD 3K

HD 4K

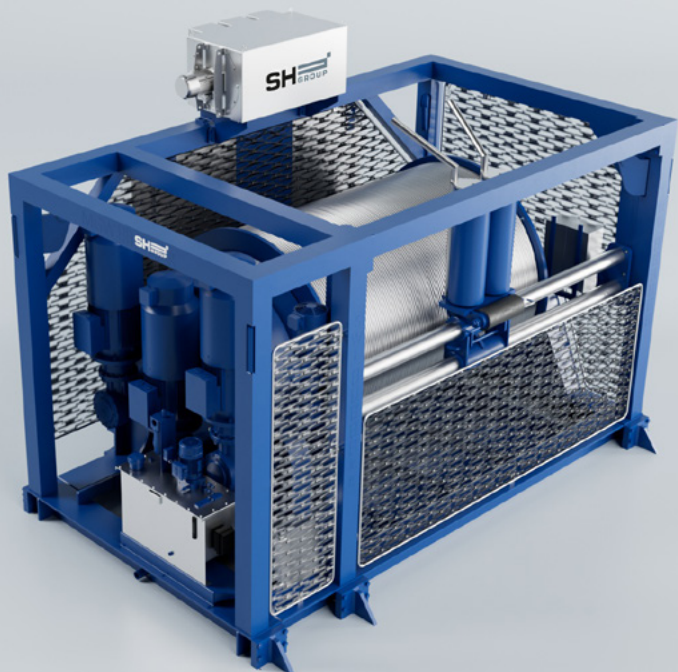
UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

Winch FS

Front Spooling Winch

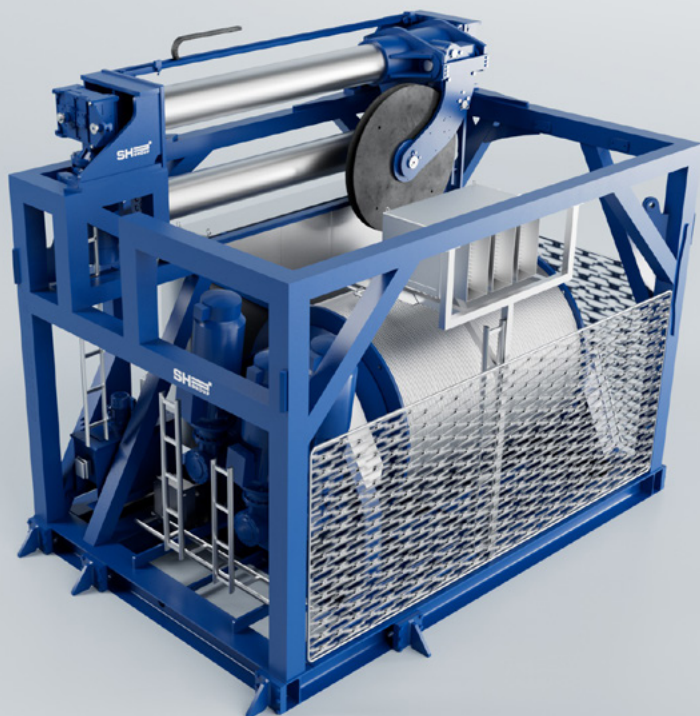


Description	OFL FS Winch for UHD-III 4K
Product key	OFL-5950-A3-4-312-195-FS-NZ-XXX
GA Drawing	10072032
Specification	See specification section + GA
Capacity	4500 m Ø34,1 mm in 13 layers
Pull force bottom / top	195 / 125 kN
Speed	61-99 m/min
AHC Depth	2600 m
AHC Performance	1,45 m/s ² and 1,5 m/s

Performance Winch - UHD-III 4K			
Definitions	Forces	Units	Note
Speed top purchase spec Speed top actual driveline	60 99	m/min m/min	Requested In compliance (AHC)
Speed bottom purchase spec Speed bottom actual driveline	40 61	m/min m/min	Requested In compliance
Pull top (calculated) Pull top purchase spec Pull top actual driveline	116 125 125	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
Pull bottom (calculated) Pull bottom purchase spec Pull bottom actual driveline	159 169 195	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DF	2	ψ	Standard

Winch RALW

Right Angle Winch



Description	OFL RA Winch for UHD-III 4K
Product key	OFL-5950-A3-4-312-195-RA-NZ-XXX
GA Drawing	10072123
Specification	See specification section + GA
Capacity	4500 m Ø34,1 mm in 13 layers
Pull force bottom / top	195 / 125 kN
Speed	61-99 m/min
AHC Depth	2600 m
AHC Performance	1,45 m/s2 and 1,5 m/s

Performance Winch - UHD-III 4K			
Definitions	Forces	Units	Note
Speed top purchase spec Speed top actual driveline	60 99	m/min m/min	Requested In compliance (AHC)
Speed bottom purchase spec Speed bottom actual driveline	40 61	m/min m/min	Requested In compliance
Pull top (calculated) Pull top purchase spec Pull top actual driveline	116 125 125	kN kN kN	TMS + ROV + Through-Frame Defining In compliance
Pull bottom (calculated) Pull bottom purchase spec Pull bottom actual driveline	159 169 195	kN kN kN	TMS + Umbilical Defining In compliance (SWL)
DF	2	ψ	Standard

A-Frame SPL

Simple luffing A-Frame



Description	SPL-15 for UHD-III 3K / 4K
Product key	SPL-15-S-4.7-3.0-NZ-XXX
GA Drawing	10072518
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	4,7 m

Performance A-Frame - UHD-III 4K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air SPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	159	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 4K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

A-Frame DPL

Telescopic Luffing A-Frame



Description	DPL-15 for UHD-III 3K / 4K
Product key	DPL-15-S-6.7-3.0-NZ-XXX
GA Drawing	10073232
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	6,7 m

Performance A-Frame - UHD-III 4K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air DPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	159	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 4K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

A-Frame DPL (Without base frame)

Telescopic Luffing A-Frame



Description	DPL-15 UHD-III 3K / 4K
Product key	DPL-15-S-6.8-3.2-NZ-020
GA Drawing	10081531
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	6,8 m

Performance A-Frame - UHD-III 3K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air DPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	122	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 3K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

A-Frame LPL

Low dipping A-Frame



Description	LPL-15 for UHD-III 3K / 4K
Product key	LPL-15-L-7.8-3.0-NZ-XXX
GA Drawing	10082108
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	7,8 m

Performance A-Frame - UHD-III 4K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air LPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	159	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 4K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

A-Frame CPL (Without base frame)

Low dipping, telescopic A-Frame



Description	CPL-15 for UHD-III 3K / 4K
Product key	CPL-15-S-6.9-3.5-NZ-XXX
GA Drawing	CPL15-200-001
Specification	See specification section + GA
SWL Air	15 T @ DAF3
SWL Sub	22,5 T @ DAF2
Outreach	6,8 m

Performance A-Frame - UHD-III 4K			
Definitions	Forces	Units	Note
SWL air (calculated)	116	kN	TMS + ROV + Through-Frame
SWL air purchase spec	125	kN	Defining
SWL air CPL-15	147	kN	In compliance
DAF air	3	ψ	Standard
SWL sub (calculated)	159	kN	TMS + Umbilical
SWL sub purchase spec	221	kN	Defining
SWL sub 4K A-frames	221	kN	In compliance (SWL)
DAF sub	2	ψ	Standard

HD 3K

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UHD-III 3K

UHD-III 4K

OPTIONS
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- Optional certification and design features - **Winches**

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OPTIONS
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Level 1 – Certification and design options			
No.	Certification options		
1.1	DNV-ST-0378.		
1.2	DNVGL-ST-E273 R30		
1.3	ILO 152 Lifting appliances		
No.	Design features and equipment		
1.4	Umbilical cooling - external	1.18	Water separation filter
1.5	Umbilical cooling - internal	1.19	Brake resistor – fresh water
1.6	Drip tray	1.20	Brake resistor – sea water
1.7	Lebus split sleeves HD 3K winch	1.21	MRU - NORSUB 6000
1.8	Lebus split sleeves HD 4K winch	1.22	Active THD filter
1.9	Lebus split sleeves UHD-III 3K winch	1.23	Load monitoring from external load cell in A-frame or routing sheave
1.10	Lebus split sleeves UHD-III 4K winch	1.24	Load cell in sheave (applicable for RALW winch only)
1.11	Central lubrication for FSLW winch	1.25	Incoming main power voltage monitoring
1.12	Central lubrication for RALW winch	1.26	In-line rectors for VFD's - OBS. Electrical main cabinet +200mm width
1.13	Emergency recovery panel	1.27	Protective tarpaulin for winch frame
1.14	19" rack remote online-room control panel	1.28	Flood lights on winch frame
1.15	Touch screen size upgrade from 9 to 12"	1.29	Spare drum with cradle
1.16	Umbilical lifetime monitoring		
1.17	Radio remote control (Combined Winch and A-Frame)		

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Level 2 – Umbilical options

No.	Umbilical options
2.1	Delivery of slip ring – Standard Schilling scope
2.2	Delivery of umbilical – Standard Schilling scope
2.3	Slip ring installation – Standard Schilling scope
2.4	Spooling

Level 3 – Spare part options

No.	Spare part options
3.1	Reduced spare package
3.2	Full spare package
3.3	Comprehensive spare package

Level 4 – Shipping options

No.	Shipping options
4.1	Preservation and wrapping
4.2	Loading - FCA acc. To incoterms 2020
4.3	Delivery - DAP acc. To incoterms 2020

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UHD-III 3K

UHD-III 4K

 OPTIONS
AND DATA



- Optional certification and design features - **A-frames**

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Level 1 – Certification and design options

No.	Certification options	
1.1	DNV-ST-0378 offshore and platform lifting appliances. Design certificate - Third party witness by DNV	
1.2	DNVGL-ST-E273 R30 Portable offshore units	
1.3	ILO 152 Lifting Appliances	
No.	Design features and equipment	
1.4	Bullet for A-frame in mat. 1.4418 QT	1.18 ROV anti-crush feature
1.5	Drip tray – part of A-frame base	1.19 Additional sheave wheel with flagging (Loose item for umbilical routing)
1.6	Loose Drip tray (For A-frame without base points)	1.20 Additional sheave wheel fixed (Loose item for umbilical routing)
1.7	Central lubrication (10 auto-lubrications points)	
1.8	Stainless steel hydraulic fittings	
1.9	Load cell in docking head sheave	
1.10	Latched indication sensors for winch HMI	
1.11	Safety Railing hinged (Manually operated)	
1.12	Safety Railing hinged (Automated handling)	
1.13	Cable Rinsing System	
1.14	HPU 1 x 45kW	
1.15	HPU 2 x 45kW	
1.16	HPU Bunding	
1.17	Water separation filter mounted on HPU	

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Level 3 – Spare part options

No.	Spare part options
2.1	Reduced spare package
2.2	Full spare package

Level 4 – Shipping options

No.	Shipping options
4.1	Preservation and wrapping
4.2	Loading - FCA acc. To incoterms 2020
4.3	Delivery - DAP acc. To incoterms 2020

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 OPTIONS
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Winch standard spec

Dimension and Design

Design factor (psi):	2.0.
Design temperature:	TD -20° to +45°C.
Overall dimensions:	See GA drawing.
Drum dimensions:	See GA drawing.
Weight:	See GA drawing. Specified excl. Umbilical and slip ring.
Cable capacity:	3K 3300m.
Cable capacity:	4K 4500m.

Performance

SWL:	HD 3K	130 kN
	HD 4K	160 kN
	UHD-III 3K	195 kN
	UHD-III 4K	195 kN
Power supply:	Voltage performance reference	440 V
	Voltage range	400-480 V
	Frequency performance reference	60 Hz
	Frequency range	50-60 Hz
	Consumption 180kW drive line, approx.	310 A
	Consumption 312kW drive line, approx.	500 A
	During AHC mode the current can increase up to 130%	

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UHD-III 3K

UHD-III 4K

OPTIONS
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Construction

General: Self-contained all steel welded construction with drum, level wind and drive motors.

Bearings Housed ferrous roller bearings.

Surface treatment

Degreasing	
Sandblasting to ISO8501-1	SA 2,5
1 x Zinc primer	70 my
1 x Priming epoxy coat	130 my
2 x Top coat polyurethane à 40 my	80 my
Total layer thickness	280 my
Colour RAL	TBA
Layer thickness regarded as minimum values	

Level wind

Winch Front spooling
 winch Adjustable Level wind for front spooling.
 Horizontal +/- 8 degree, fleet angle.
 Electrical driven spooling gear. A stainless steel absolute encoder is placed on the level wind trapeze guiding spindle. Spindle is driven by frequency controlled motor and gear. Together with the encoder placed on the winch drum a PLC controls the cable spooling.

Winch Right Angle spooling
 Right angle level wind made as a separate item. to be mounted on top of winch frame during mobilization.
 Vertical exit angle -15 to +50 degree.
 Horizontal +/- 0 degree.
 Electrical driven spooling gear. A stainless steel encoder is placed on the level wind trapeze guiding spindle.
 Spindle in stainless steel.
 Spindle is driven by frequency controlled motor and gear. Together with the encoder placed on the winch drum a PLC controls the cable spooling.
 Level wind equipped with sheave in PA6G metaerial.
 Bottom groove to match umbrilical bending radius.
 Sheave carrying arm can be opened for installation of umbilical.

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OPTIONS
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Drive line	Electrical motors trough planetary gears driving a ring gear connected the drum.
Sea fastening clamps	1 set (six of) sea fastening clamps for welding to deck.
Sacrificial	Bolts for fastening brackets to tensioner foundation included.
Brakes	"Fail safe" disc-brake mounted on motor. Electric OFF / spring ON. Brake position feedback from micro switch. Brake force according to DNV requirements for ROV handling.ded.

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UHD-III 3K

UHD-III 4K

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Electrical components and control system

Main switch board:	Separate item in stainless steel AISI316L, IP56 is mounted on winch. Cabinet equipped with special ventilation system. Three frequency converters, make Danfoss, for winch motor drives with encoder feedback card for closed loop vector control. Frequency converters installed in separate part of the cabinet isolated from the PLC and rest of control system. Frequency converter, make Danfoss, for level wind system. One PLC, make Siemens S7-1500 for winch control, and AHC control. Easy "on-site" recovery of PLC via provided SD card containing program backup. Backup is valid for the supplied winch, installation of the backup on other winches prohibited. Level wind is controlled via PLC, programmed to suit actual cable diameter. The PLC receives pulses from encoders placed on drum and level wind and thereby calculates the necessary movement of level wind to match the movement of the drum.
Brake resistor	Separate unit in stainless steel AISI 304/316L for mounted on top of winch. Brake resistor air cooled, temperature monitoring in brake resistor with PT100 sensor, connected to alarm in control system. Temperature displayed in HMI. Brake resistor divided in sections. Each section supports one frequency converter. Each section can easily be replaced in case of malfunction without affecting the other sections.
Heating	Main switch board, motors and junction boxes (if possible) are equipped with electrical heating. During storage, an external supply of 220-240VAC, 50/60HZ is needed to maintain the heat function.

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Electrical drive motors	Electrical motors 4 poled, with brakes. Cast iron motor and junction box for 400/480V@50/60 HZ frequency controlled operation 0-80 Hz, IP56. Forced cooling for low speed operation 0 Hz. Anti-condensation heating 230V. 3 x PTC in winding. Encoder for closed loop frequency control.
Motor supervision	One PT100 sensor per frequency converter connected to alarm in control system. The sensor also control the cooling fan on the motor. The start/stop temperature is adjustable. Read out of temperature in HMI.
AHC functionality	Winch system can respond to signal from MRU. Specific acceleration and speed, see drawing.
Anti-drifting during AHC	The TMS have a tendency to drift when deployed in AHC mode for periods longer than 15 minutes. AD mode will keep the deployed TMS at a fixed depth.
Launch & recov. During AHC	The launch & recovery mode makes it possible to adjust the position of the TMS while the winch is in AHC-Mode. The set point for the anti- drifting functionality is changed by 10 cm for each sec. the joystick is actuated.
Motor redundancy	Switches for emergency drive with fail on one of the main motors, electric brakes or frequency converters are placed inside the main electrical cabinet. It is possible to operate the winch with one motor / frequency drive out of operation.

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Safety on winch	Protection around moving parts on winch. Flashing lamp indicating remote control of winch, incl. 5m cable and magnetic foundation.
Constant tension "latched" (low tension)	Torque control. – When the TMS/ROV is latched to the A-frame and the strain on the cable is relived, it is possible to switch to low constant tension, and the winch will follow the movement of the Aframe. If the TMS/ROV drops out of the latch, the control system will detect the failure and switch to full torque, thereby preventing dropping of the stack.
Joystick	scale To avoid the TMS to "tip over" because of too high launch speed, the launch speed can be adjusted from 50-100% via the HMI.
Ethernet	Ethernet port on PLC and frequency converters. Enable remote reading and programming online, access provided by customer.
Main controls	Stainless steel AISI316L, IP56 box for open deck location, including HMI panel in 9" color touch screen, Joystick for speed control, Emergency stop, Cable 15 mtr. and Pedestal in stainless steel for deck mounting. All winch operations controlled from the HMI with operational mode, general status view, profinet feedback, detailed parameter configuration, warning and alarm readings. Interface provided in differentiated protected user levels. Transfer of command by login. High torque to 125%, intended for load testing of termination.

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Slip ring installation

Slip ring	Prepared for Focal type 176 slip ring.
Rotating junction box	Prepared for Schilling type 101-7562
Stationary junction box	Prepared for Schilling type 101-7563
Umbilical installation	Mechanical steel clamp machined to fit the umbilical armor. + cable clamps supporting the stripped umbilical at winch drum. Support for one extra round of umbilical to make sure re-termination is possible. Auto stop with 8 turns back on drum.

Documentation

FAT	SH Group A/S standard FAT according to DNV's Rules for Certification of Lifting Appliances – Cert. ST-0378
Manuals	One Fabrication record book One Technical manual, including drawings and datasheets One user manual Manuals delivered electronically Manuals in English language

Electrical installation

Motor cable, control cable, earthing, marking etc.	According to DNV-OS-D201 Electrical Installations, latest version. Offshore Standard.
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OPTIONS
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Design directives

System design	System designed according to DNV-ST-0378 Standard for offshore and platform lifting appliances, latest version and prepared to meet requirements for certification.
Lifting design	Lifting devices designed, tested and prepared for certification according to DNV-ST-E273 R30. Lifting devices are frame, pad eyes and lifting sling
Quality Assurance	SH Group A/S operates a DS/EN ISO 9001-2015 certified quality assurance system.

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OPTIONS AND DATA

A-Frame standard spec

Performance and design 10T SWL

SWL air	(@dynamic factor)	10Te@ <30° 10Te@2 <15°
SWL submerged	(@dynamic factor)	15Te@2 <0° 15Te@1,33 <15

Calculations

	Construction	Factor	Equation	Result
SWL Air	A-frame <0° (vertical)	3	10Te x 3	30Te
	Latch <0° (vertical)	2	10Te x 2	20Te
	Luffing <0° (vertical)	1,25	10Te x 1,25	12,5Te
	A-frame <15° (angled)	2	10Te x 2	20Te
	Vertical load result Horizontal load result			≈19Te 5Te
SWL submerged	A-frame <0° (vertical)	2	15Te x 2	30Te
	A-frame <15° (angled)	1,33	15Te x 1,33	20Te
	Vertical load result Horizontal load result			≈19Te 5Te

Performance and design 15T SWL

SWL air	(@dynamic factor)	15Te@ <30° 15Te@2 <15°
SWL submerged	(@dynamic factor)	22,5Te@2 <0° 22,5Te@1,33 <15

Calculations

	Construction	Factor	Equation	Result
SWL Air	A-frame<0° (vertical)	3	15Te x 3	45Te
	Latch<0° (vertical)	2	15Te x 2	30Te
	Luffing<0° (vertical)	1,25	15Te x 1,25	18Te
	A-frame<15° (angled)	2	15Te x 2	30Te
	Vertical load result Horizontal load result			≈29Te 8Te
SWL submerged	A-frame<0° (vertical)	2	22,5Te x 2	45Te
	A-frame<15° (angled)	1,33	22,5Te x 1,33	30Te
	Vertical load result Horizontal load result			≈29Te 8Te

Dimension

Overall dimensions: See GA drawing

Base frame: See GA drawing

Weight: See GA drawing

Construction

Design Temperature TD -20° to +45°C.

General Self-contained all steel welded construction.

Sea fastening clamps Sacrificial 1 set off sea fastening clamps for welding to deck. Bolts for fastening sacrificial brackets to A-Frame foundation included.

Working area Grated floor panels in working/docking area.
All painted surfaces subjected to foot traffic have non-slip finish.

Main hydraulic cylinders Hydraulic cylinders for A-frame tilt and extension with stainless steel piston rods and composite bearings. Flow control with rotational flow divider.

Hydraulic cylinders Hydraulic cylinders for sheave arrangement etc. with stainless piston rods and composite bearings.

Hydraulic system Connection plate with pressure, return, drain and LS for connection to HPU. Hydraulic pressure required 250 bar.

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

**OPTIONS
AND DATA**

Controls

(HCP) Control panel in stainless steel for mounting close to A-frame foundation with necessary relief valves, check valves and control valves for local control of all A-frame functions.

Danfoss PVG 120/32:

- A-frame luffing (in/out)
- Extension (in/out)
- Off lead docking head (roll)
- Side lead docking head (pitch)
- Latch lock / release
- Snubber rotation
- Snubber ring up/down

Off lead and side lead flow adjustment valves.

Off lead and side lead open/close

Hydraulic fitting and pipes

Hydraulic pipe material: Up to Ø38 in stainless steel AISI316.

Fittings system: Walform. Fitting material: Chromatic steel body, stainless steel nut. Stainless steel body optional.

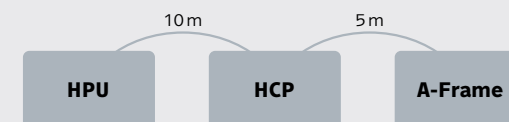
Hose coupling material: Chromatic steel wrapped with densyl tape. Stainless steel optional.

Hoses

Connection hoses 10m long between HPU and HCP are included if HPU option is chosen. Connection hoses 5m long between HCP and A-Frame are included.

Lights

LED floodlights



HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

Docking Head

The docking head unit is directly connected to the A-frame top bar and provides no vertical movement.

The docking head is built with:

- Fail safe latch interface ROV/TMS with Ø1700 mm rubber fender
- Hydraulic open with visual indicator to confirm operation
- PA6G cable sheave to suit exact cable diameter.
- Sheave flagging to adapt fleet angle (max+/-8 °)
- Adjustable sheave height to obtain equal balance in snubber head.
- Rotation 0 - 270° with hydraulic brake
- +/-15° side lead (pitch) of latch, variable hydraulic dampened.
- +/-15° off lead (roll) of latch, variable hydraulic dampened.
- Latch function, self-latching/locking, spring applied with visual indication.

Surface treatment

Degreasing	
Sandblasting to ISO8501-1	SA 2,5
1 x Zinc primer	70 my
1 x Priming epoxy coat	130 my
2 x Top coat polyurethane à 40 my	80 my
Total layer thickness	280 my
Colour RAL	TBA
Layer thickness regarded as minimum values	

Quality Assurance

SH Group A/S operates a DS/EN ISO 9001-2015 certified quality assurance system.

HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA

Documentation

FAT SH Group A/S standard FAT according to DNV's Rules for Certification of Lifting Appliances – Cert. ST-0378

Manuals One Fabrication record book
One Technical manual, including drawings and datasheets
One user manual
Manuals delivered electronically
Manuals in English language

Electrical installation

Motor cable, control cable, earthing, marking etc. According to DNV-OS-D201 Electrical Installations, latest version. Offshore Standard.

Design directives

System design System designed according to DNV-ST-0378 Standard for offshore and platform lifting appliances, latest version and prepared to meet requirements for certification.

Lifting design Lifting devices designed, tested and prepared for certification according to DNV-ST-E273 R30. Lifting devices are frame, pad eyes and lifting sling

Hydraulic hoses Hydraulic Hoses MED certified

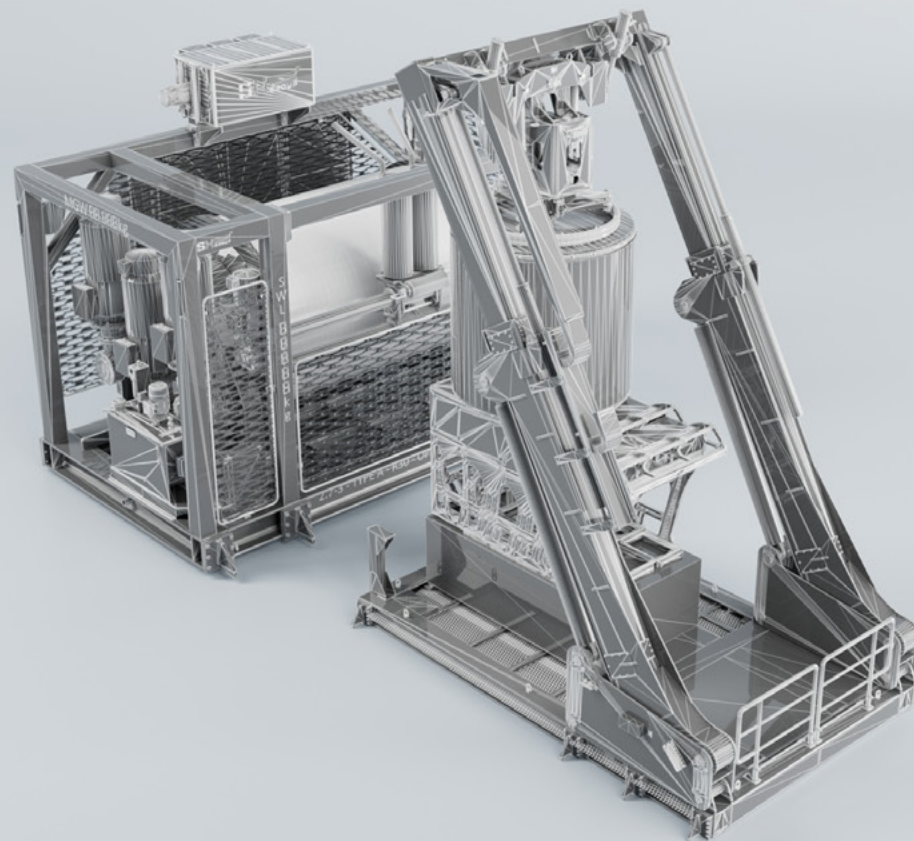
HD 3K

HD 4K

UHD-III 3K

UHD-III 4K

OPTIONS
AND DATA



LAUNCH AND RECOVERY SYSTEM FOR HD, UHD-III



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