

# CompactClean Bulker, Non-EX, Loose Components

The CompactClean OptIMO BWMS has been designed for vessels trading globally or primarily in IMO regulated waters. The CompactClean OptIMO BWMS provides optimized performance in IMO waters combined with reduced flowrate in US territories. If your vessel trades primarily outside of US waters in IMO-regulated waters, we can offer the CompactClean OptIMO system for ballast water management.

## Tailor-made solutions for Bulk carriers

The CompactClean Bulker BWMS is the CAPEX competitive choice for operators in the dry bulk segment. The CompactClean Bulker BWMS provides you exactly the flexibility that you need and deploys the same proven principles and quality as the CompactClean and CompactClean OptIMO.

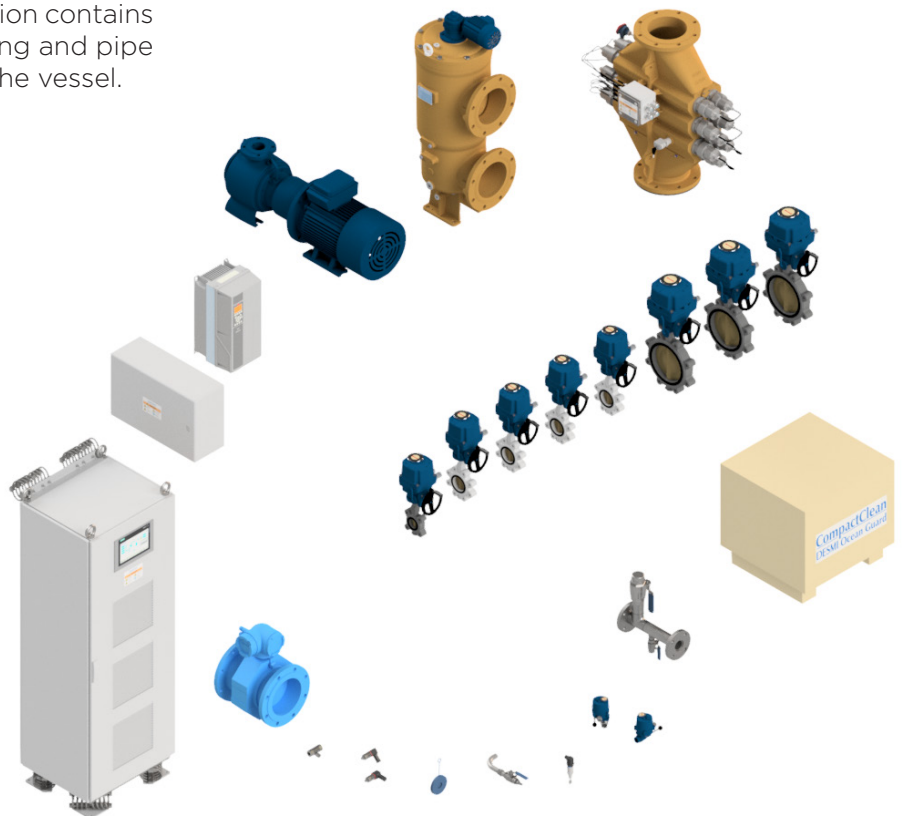
Typically, it takes a bulk carrier longer to unload its cargo than to load it. Thus, the de-ballast operation is often carried out at a higher flowrate since two (or more) pumps will operate during de-ballasting while one pump is operated during ballasting. Since the mechanical filtration process is by-passed during

de-ballast, the CompactClean Bulker is installed with a smaller filter compared to the UV capacity. This will have a significant effect on the CAPEX and OPEX.

The CompactClean Bulker system uses the same dual mode design as the CompactClean OptIMO solution and therefore offers the same treatment capacity down to 35% UV-T in IMO mode. Furthermore, the CompactClean Bulker solution offers all the same benefits as our usual, high quality solutions - from fully automated operation to low footprint and more.

## Loose Component Delivery

The loose component configuration provides maximum flexibility in terms of deployment. This is the typical choice for retrofit projects as all components freely can be placed where there is enough room for them. This configuration contains all components excepts electrical wiring and pipe spools, which will be customized for the vessel.



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Description	135-340	190-340	135-500	190-500	250-500	250-750	340-750	340-1000	500-1000	500-1500	750-1500	750-2100	1000-2100
Both Modes Max Flow [m <sup>3</sup> /h] - Ballast	135	190	135	190	255	255	340	340	515	515	770	770	1040
IMO Mode Max Flow [m <sup>3</sup> /h] - De-Ballast	370	370	510	510	750	750	1200	1200	1200	1650	1650	2500	2500
USCG Mode Max Flow [m <sup>3</sup> /h] - De-Ballast	250	250	340	340	500	500	870	870	1180	1180	1740	1740	1740
Minimum Flow Ballast [m <sup>3</sup> /h] Filter	25	35	25	35	35	35	45	45	50	50	65	65	95
Minimum Flow De-Ballast [m <sup>3</sup> /h] UV unit	9	9	9	9	9	13	13	19	19	26	26	38	38
Min Power required UV-T > 100% UV lamps dim to 38% [kW]	13,7	13,7	18,2	18,2	27,4	27,4	27,4	41	41	54,7	54,7	82,1	82,1
Avg. Power required UV-T = 85% UV lamps dim to 70% [kW]	25,2	25,2	33,6	33,6	50,4	50,4	75,6	75,6	75,6	100,8	100,8	151,2	151,2
Install Power required UV-T < 62% All components running [kW]	54	54	67,0	67,0	93,0	93,0	131,0	131,0	131,0	169,0	169,0	245,0	245,0
Maximum Current At 440V [A]	73	73	106	106	106	126	126	177	177	229	229	332	332
Main Cabinet L x W x H [mm] Weight [kg]	606 x 594 x 1795 mm 262 kg	606 x 594 x 1795 mm 262 kg	606 x 594 x 1795 mm 272 kg	606 x 594 x 1795 mm 272 kg	606 x 594 x 1795 mm 272 kg	606 x 594 x 2171 mm 349 kg	606 x 679 x 2171 mm 349 kg	1206 x 579 x 1771 mm 498 kg	1206 x 579 x 1771 mm 498 kg	1203 x 700 x 2208 mm 677 kg	1203 x 700 x 2208 mm 677 kg	1203 x 700 x 2208 mm 788 kg	1203 x 700 x 2208 mm 788 kg
UV Unit H x W x D Dry Weight [kg]	776 x 828 x 438 mm 150 kg	776 x 828 x 438 mm 150 kg	902 x 828 x 446 mm 190 kg	902 x 828 x 446 mm 190 kg	902 x 828 x 446 mm 190 kg	852 x 828 x 516 mm 222 kg	852 x 828 x 516 mm 222 kg	986 x 838 x 541 mm 331 kg	986 x 838 x 541 mm 331 kg	1032 x 838 x 628 mm 390 kg	1032 x 838 x 628 mm 390 kg	1102 x 844 x 722 mm 580 kg	1102 x 844 x 722 mm 580 kg
Filter H x W x L [mm] Weight [kg]	950 x 450 x 450 mm 131 kg	1000 x 450 x 400 mm 192 kg	950 x 450 x 450 mm 131 kg	1000 x 450 x 400 mm 192 kg	1150 x 500 x 500 mm 288 kg	1150 x 500 x 500 mm 288 kg	1200 x 500 x 500 mm 322 kg	1200 x 500 x 500 mm 322 kg	1300 x 650 x 650 mm 527 kg	1300 x 650 x 650 mm 527 kg	1550 x 700 x 700 mm 757 kg	1550 x 700 x 700 mm 757 kg	1750 x 800 x 800 mm 900 kg
Pump L x W x H [mm] Weight [kg]	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 236 kg	1041 x 350 x 440 mm 250 kg	1041 x 350 x 440 mm 250 kg	1041 x 350 x 440 mm 250 kg	1041 x 350 x 440 mm 250 kg
VFD H x W x D [mm] Weight [kg]	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg	480 x 242 x 260 mm 23 kg
External Control Box H x L x W [mm] Weight [kg]	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg	380 x 600 x 210 mm 25,2 kg