



Certificate No. 02-003735/025635

## TYPE APPROVAL CERTIFICATE

This is to certify that this product complies with the Rules for the classification of ships, Part 1 - General requirements, Chapter 3 - Type approval of products.

TYPE AND DESCRIPTION OF PRODUCT:

**BSKY™ BWMS**  
(model range BSKY300(081) to BSKY6000(1232))  
(model range BSKY300(081)EX to BSKY6000(1232)EX)  
Treatment rated capacity (TRC): 80-6000 m<sup>3</sup>/h

MANUFACTURER:

**WU XI BRIGHTSKY ELECTRONIC Co., Ltd.**  
Zhangzhen, No.312 State Road, Luoshe Town,  
Huishan District, Wuxi City, Jiangsu Province  
**PEOPLE'S REPUBLIC OF CHINA**

THE PRODUCT MEETS FOLLOWING RULES/REGULATIONS:

CRS Rules for technical supervision of sea-going ships, Part 22 – Pollution prevention  
Resolution MEPC.300(72) – Code for approval of ballast water management systems

FURTHER DETAILS OF THE PRODUCT AND CONDITIONS FOR CERTIFICATION ARE GIVEN OVERLEAF.

APPROVAL IS VALID UNTIL: **2026-10-12**

Place and date: Split, 2022-10-12

Seal

Marinko Popović, dipl.ing.

NOTE: This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Croatian Register of Shipping of any modification or changes to the product in order to obtain a valid certificate.

**DETAILED PRODUCT DESCRIPTION:**

Ballast water management system using hydrocyclone separation, ultrasonic unit and UV disinfection at ballast water uptake and ultrasonic unit and UV disinfection at ballast water discharge.

Model	TRC (m3/ h)	Hydrocyclone prefilter	US unit	UV unit
BSKY300(081)	80	CY08x1	US25	UV408
BSKY300(101)	130	CY10x1	US25	UV408
BSKY300(082)	160	CY08x2	US25	UV408
BSKY300(121)	200	CY12x1	US25	UV408
BSKY300(083)	240	CY08x3	US25	UV408
BSKY300(102)	260	CY10x2	US25	UV408
BSKY300(084)	300	CY08x4	US25	UV408
BSKY300(103)	300	CY10x3	US25	UV408
BSKY300(122)	300	CY12x2	US25	UV408
BSKY600(103)	390	CY10x3	US35	UV514
BSKY600(085)	400	CY08x5	US35	UV514
BSKY600(122)	400	CY12x2	US35	UV514
BSKY600(086)	480	CY08x6	US35	UV514
BSKY600(104)	520	CY10x4	US35	UV514
BSKY600(087)	560	CY08x7	US35	UV514
BSKY600(123)	600	CY12x3	US35	UV514
BSKY600(105)	600	CY10x5	US35	UV514
BSKY900(106)	780	CY10x6	US45	UV520
BSKY900(124)	800	CY12x4	US45	UV520
BSKY900(107)	900	CY10x7	US45	UV520
BSKY900(125)	900	CY12x5	US45	UV520
BSKY1200(125)	1000	CY12x5	US50	UV626
BSKY1200(108)	1040	CY10x8	US50	UV626
BSKY1200(109)	1170	CY10x9	US50	UV626
BSKY1200(126)	1200	CY12x6	US50	UV626
BSKY1200(1010)	1200	CY10x10	US50	UV626
BSKY1500(1010)	1300	CY10x10	US55	UV632
BSKY1500(127)	1400	CY12x7	US55	UV632
BSKY1500(1011)	1430	CY10x11	US55	UV632
BSKY1500(1012)	1500	CY10x12	US55	UV632
BSKY1500(128)	1500	CY12x8	US55	UV632

**DETAILED PRODUCT DESCRIPTION:**

UV units and prefilters can be installed in parallel configuration to achieve higher flow capacities.

Model	TRC (m <sup>3</sup> /h)	Base model	Quantity
BSKY1800(1012)	1560	BSKY900(106)	2
BSKY1800(128)	1600	BSKY900(124)	2
BSKY1800(1014)	1800	BSKY900(107)	2
BSKY1800(1210)	1800	BSKY900(125)	2
BSKY2400(1210)	2000	BSKY1200(125)	2
BSKY2400(1016)	2080	BSKY1200(108)	2
BSKY2400(1018)	2340	BSKY1200(109)	2
BSKY2400(1212)	2400	BSKY1200(126)	2
BSKY2400(1020)	2400	BSKY1200(1010)	2
BSKY2700(1018)	2340	BSKY900(106)	3
BSKY2700(1212)	2400	BSKY900(124)	3
BSKY2700(1021)	2700	BSKY900(107)	3
BSKY2700(1215)	2700	BSKY900(125)	3
BSKY3000(1020)	2600	BSKY1500(1010)	2
BSKY3000(1214)	2800	BSKY1500(127)	2
BSKY3000(1022)	2860	BSKY1500(1011)	2
BSKY3000(1024)	3000	BSKY1500(1012)	2
BSKY3000(1216)	3000	BSKY1500(128)	2
BSKY3600(1215)	3000	BSKY1200(125)	3
BSKY3600(1024)	3120	BSKY1200(108)	3
BSKY3600(1027)	3510	BSKY1200(109)	3
BSKY3600(1218)	3600	BSKY1200(126)	3
BSKY3600(1030)	3600	BSKY1200(1010)	3
BSKY4500(1030)	3900	BSKY1500(1010)	3
BSKY4500(1221)	4200	BSKY1500(127)	3
BSKY4500(1033)	4290	BSKY1500(1011)	3
BSKY4500(1036)	4500	BSKY1500(1012)	3
BSKY4500(1224)	4500	BSKY1500(128)	3
BSKY4800(1220)	4000	BSKY1200(125)	4
BSKY4800(1032)	4160	BSKY1200(108)	4
BSKY4800(1036)	4680	BSKY1200(109)	4
BSKY4800(1224)	4800	BSKY1200(126)	4
BSKY4800(1040)	4800	BSKY1200(1010)	4

Model	TRC (m <sup>3</sup> /h)	Base model	Quantity
BSKY6000(1040)	5200	BSKY1500(1010)	4
BSKY6000(1228)	5600	BSKY1500(127)	4
BSKY6000(1044)	5720	BSKY1500(1011)	4
BSKY6000(1048)	6000	BSKY1500(1012)	4
BSKY6000(1232)	6000	BSKY1500(128)	4

#### Hydrocyclone prefilter

Model	Flow range (m <sup>3</sup> /h)	Max. working pressure (bar)	Working pressure range (bar)	Material
CY08	32-88	5	1-5	Duplex S31803 & SS316L
CY10	52-143			
CY12	80-220			

#### Ultrasonic unit

Model	TRC (m <sup>3</sup> /h)	Max. power consumption (kW)	No. of generator	Protection degree	Material
US25/ US25EX	300	8,4	1	IP55/ Ex e ib q px IIC T4, IP65	Duplex S31803 & SS316L
US35/ US35EX	600	12,6	1		
US45/ US45EX	900	15,4	2		
US50/ US50EX	1200	18,2	2		
US55/ US55EX	1500	19,6	2		

#### UV unit

Model	TRC (m <sup>3</sup> /h)	Max. UV lamp power consumption (kW)	No. of lamps	UV dose (mJ/cm <sup>2</sup> )	Protection degree	Material
UV408/ UV408 EX	300	5,5	8	≥167	IP55/ Ex e ib q px IIC T4, IP65	Duplex S31803 & SS316L
UV514/ UV514 EX	600		14	≥147,2		
UV520/ UV520 EX	900		20	≥141,6		
UV626/ UV626 EX	1200		26	≥136,6		
UV632/ UV632 EX	1500		32	≥134,8		

**APPLICATION / LIMITATIONS:**

Salinity: no limitation

Temperature of ballast water: no limitation

Holding time:  $\geq 72$  h

UVT:  $\geq 60\%$

Maximum working pressure: 5 bar

Operation temperature: 0- 55 °C

**TYPE APPROVAL DOCUMENTATION:**

Description	Drawing no.	Rev.
System drawings	Chapter 7 Chapter 8	1.0.2
Component drawings	Chapter 9	1.0.2
Land-based test report Shipboard test report	KOMERI-0906-18T2500 VTR-19T2500	0
Environmental testing report	S033A-2020 S022A-2021	2020-10-29 2021-06-28
Operation, maintenance and safety manual	Chapter 3 Chapter 4	1.1.3

**HAZARDOUS AREA/ EX-PROOF:**

The hydrocyclone prefilter, US unit and UV unit have Ex-certification and can be installed in hazardous area zone 1, gas group IIC and temperature class T4. The control panels and power supply are to be located in safe zone.

**TECHNICAL SPECIFICATIONS:**

**Local control panel**

Type: BSKY\_CON

Power supply: Single phase AC 220V, IP44

**Remote control panel**

Type: BSKY\_CON\_R

Power supply: DC 24V, IP44

**Control rack**

Type: CR106, CR109, CR112, CR106F, CR109F, CR112F

Power supply: 3 phase AC 380/440V; Single phase AC 220V, IP44

**MARKING OF PRODUCT:**

- Manufacturer's name or trade mark
- Type designation
- Serial number

**CONDITIONS FOR CERTIFICATION:**

This certificate is issued on the basis of the test reports and the documentation listed in type approval certificate issued by China Classification Society on behalf of People's Republic of China No. JS20PTB00337\_02 and JS21PTB00125\_02.

BWMS is type approved with the following control and safety related instruments:

- flow meter
- UV unit temperature sensor
- BWMS inlet pressure transmitter
- UV dose sensor
- emergency stop button