Contents

	Genset	Marine	O & G	Rail	C & I
Application	X				
Engine model	20V4000G94LF				
Rated power [kW]	3308				
Rated speed [rpm]	1500				
Application Group	3D				
Legislative body	NEA Singapore for ORDE				
Test cycle	D2				
Data Set No.	XZ54954100068				
Data Set Basis	NEA Singapore for ORDE				
Fuel sulphur content [ppm]	7				

			Project no.		
PDF		Name	**0**		Size
Configurator		Lenhof, Torsten (TATP)	Order no.		**A4**
			0		
	Approver1	Kneifel, Alexander (TSLE)	EDS-ID		
	Approver2	Breuer, Joerg (TVA)	**841-01.11.2021**		
	Approver3				
	Approver4				
Description of Revision	Frequency	User	FN2\00042812		

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Ref.-dataset: 420122_364_NEA_G94LF_D2.nc for 295 in EDS platfrom.

Engine model
20V4000G94LF

Title
Emission data sheet

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Configuration-ID	Documentation	Emissionstage basis	
295	AVK - Project request	**NEA Singapore for ORDE**	**7**

PDF	Name	Project no. **0**		Size **A4**
Configurator	Lenhof, Torsten (TATP)	Order no. **0**		
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Engine model
20V4000G94LF

Title
Emission data sheet

Description of Revision	Frequency

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Ref.-dataset: 420122_364_NEA_G94LF_D2.nc for 295 in EDS platfrom.

Emissionstage
NEA Singapore for ORDE

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Configuration-ID **295**	Documentation AVK - Project request	Emissionstage basis **NEA Singapore for ORDE**	of **7**

Engine data

	Genset	Marine	O & G	Rail	C & I
Application	X				
Engine model	20V4000G94LF				
Application Group	3D				
Legislative body	NEA Singapore for ORDE				
Test cycle	D2				
Fuel sulphur content [ppm]	7				
mg/mN^3 values base on residual oxygen value of [%]	5				

Engine raw emissions*

Cycle point	[-]	n1	n2	n3	n4	n5
Power	kW	3307	2480	1653	827	331
Power relative	[-]	1	0.75	0.5	0.25	0.1
Engine speed	1/min	1500	1499	1499	1500	1499
Engine speed relative	[-]	1	1	1	1	1
Filter smoke number	Bosch	0.2	0.23	0.62	0.97	0.07
Exhaust temperature after ETC	grdC	474.5	420.2	420.8	386.2	264
Exhaust back pressure after ETC (static)	mbar	39	23	9	6	2
Exhaust back pressure after ETC (total)	mbar	52	32	14	5	0
Exhaust mass flow wet	kg/h	19195.7	15929.6	12082.7	7484.8	5323.4
NOX-Emissions specific	g/kWh	6.6	5.94	4.79	4.41	9.06
SO2-Emissions specific	g/kWh	0.003	0.003	0.003	0.003	0.004
CO-Emissions specific	g/kWh	0.32	0.39	1.02	1.45	2.79
HC1-Emissions specific	g/kWh	0.05	0.07	0.09	0.16	0.72
NMHC-Emissions specific	g/kWh	0.05	0.06	0.08	0.16	0.71

	PDF	Name	Project no. 0	Size A4
	Configurator	Lenhof, Torsten (TATP)	Order no. 0	
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	User	FN2\00042812		

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Engine model
20V4000G94LF

Title
Emission data sheet

Description of Revision	Frequency	

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Emissionstage
NEA Singapore for ORDE

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Configuration-ID **295**	Documentation AVK - Project request	Emissionstage basis **NEA Singapore for ORDE**	of **7**

NOX+HC1-Emissions specific	g/kWh	6.65	6.01	4.88	4.57	9.78
NOX+NMHC-Emissions specific	g/kWh	6.65	6.01	4.88	4.57	9.76
CO2-Emissions specific	g/kWh	645.7	632.1	669.3	721.6	844.5
PM-Emissions specific (Meas.)	g/kWh	0.02	0.029	0.098	0.178	0.052
NOX-Emissions (based on 5% O2)	mg/m3N	2362	2172	1639	1375	2411
NOX+HC1-Emissions (based on 5% O2)	mg/m3N	2381	2195	1668	1426	2598
NOX+NMHC-Emissions (based on 5% O2)	mg/m3N	2381	2195	1667	1425	2594
CO2-Emissions (based on 5% O2)	mg/m3N	223605	223062	222523	222036	219217
CO-Emissions (based on 5% O2)	mg/m3N	111.4	138.5	339.2	444.6	723
HC1-Emissions (based on 5% O2)	mg/m3N	18.5	23.1	28.8	50.4	186.9
SO2-Emissions (based on 5% O2)	mg/m3N	1	1	1	1	1
PM-Emissions (calculated) (based on 5% O2)	mg/m3N	16.9	20	34.2	52.1	31.8
PM-Emissions (based on 5% O2)	mg/m3N	6.9	10.3	32.7	54.6	13.5
Oxygen (O2)	%	9.9	11.2	11.9	13.1	15.8

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Engine model
20V4000G94LF

Title
Emission data sheet

Emissionstage
NEA Singapore for ORDE

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Configuration-ID **295**	Documentation AVK - Project request	Emissionstage basis **NEA Singapore for ORDE**	of **7**

Engine data

Application	Genset	Marine	O & G	Rail	C & I
Application	X				
Engine model	20V4000G94LF				
Application Group	3D				
Legislative body	NEA Singapore for ORDE				
Test cycle	D2				
Fuel sulphur content [ppm]	7				
mg/mN^3 values base on residual oxygen value of [%]	5				

Not to exceed emission values*

Cycle point	[-]	n1	n2	n3	n4	n5
Power	kW	3307	2480	1653	827	331
Power relative	[-]	1	0.75	0.5	0.25	0.1
Engine speed	1/min	1500	1499	1499	1500	1499
Engine speed relative	[-]	1	1	1	1	1
NOX-Emissions specific	g/kWh	8.58	7.72	6.23	6.61	17.21
CO-Emissions specific	g/kWh	0.55	0.67	1.94	2.89	5.57
HC1-Emissions specific	g/kWh	0.09	0.11	0.16	0.33	2.09
NMHC-Emissions specific	g/kWh	0.09	0.11	0.16	0.32	
NOX+HC1-Emissions specific	g/kWh	8.67	7.84	6.39	6.94	19.3
NOX+NMHC-Emissions specific	g/kWh	8.67	7.83	6.39	6.93	
PM-Emissions specific (Meas.)	g/kWh	0.03	0.046	0.147	0.266	0.192
NOX-Emissions (based on 5% O2)	mg/m3N	3071	2824	2130	2063	4581
NOX+HC1-Emissions (based on 5% O2)	mg/m3N	3103	2863	2185	2164	5123
NOX+NMHC-Emissions (based on 5% O2)	mg/m3N	3102	2862	2184	2162	

PDF	Name	Project no. 0	Size A4
Configurator	Lenhof, Torsten (TATP)	Order no. 0	
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Engine model **20V4000G94LF**

Title **Emission data sheet**

Description of Revision	Frequency

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Ref.-dataset: 420122_364_NEA_G94LF_D2.nc for 295 in EDS platfrom.

Emissionstage
NEA Singapore for ORDE

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Configuration-ID **295**	Documentation AVK - Project request	Emissionstage basis **NEA Singapore for ORDE**	of **7**

CO-Emissions (based on 5% O2)	mg/m3N	189.4	235.5	644.5	889.1	1446
HC1-Emissions (based on 5% O2)	mg/m3N	31.5	39.2	54.7	100.8	542
PM-Emissions (based on 5% O2)	mg/m3N	10.4	16.4	49	81.9	49.8

PDF	Name	Project no. **0**		Size **A4**
Configurator	Lenhof, Torsten (TATP)	Order no. **0**		
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Engine model
20V4000G94LF

Title
Emission data sheet

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Emissionstage **NEA Singapore for ORDE**	Sheet **6**

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Cycle information for NEA Singapore for ORDE

	Genset	Marine	O & G	Rail	C & I
Application	X				
Engine model	20V4000G94LF				
Serial-number	V122				
Application Group	3D				
Legislative body	NEA Singapore for ORDE				
Test cycle	D2				
Data Set No.	XZ54954100068				
Test-Report-Number	841-01.11.2021				
Test location	P126				
Date of test	29.03.2017				
Tester	MTU a Rolls-Royce Solution				
Date of EDS	01.11.2021				

Engine cycle emissions*

Emission	Unit	Cycle value	NEA Singapore for ORDE-Limit
CO cycle value	g/kWh	0.802	3.5
NOX+NMHC cycle value	g/kWh	5.567	6.4
Particulate (measurement) cycle value	g/kWh	0.074	0.2

	PDF	Name	Project no. **0**	Size **A4**
	Configurator	Lenhof, Torsten (TATP)	Order no. **0**	
	Approver1	Kneifel, Alexander (TSLE)	EDS-ID	
	Approver2	Breuer, Joerg (TVA)	**841-01.11.2021**	
	Approver3			
	Approver4			
Description of Revision / Frequency	User	FN2\00042812		
	Engine model **20V4000G94LF**		Title **Emission data sheet**	

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Emissionstage **NEA Singapore for ORDE**	Sheet **7**
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