Appendix 8.5 Turbine Source Noise Terms of Candidate Turbine

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Standard Acoustic Emission

Noise Level (LW): Values reported correspond to the average estimated Sound Power Level emitted by the WTG at hub height, called LW in TS IEC-61400-14. LW values are expressed in dB(A). To obtain LWd value, as defined in IEC-61400-14, it must be applied a 2 dB increase to LW.

dB(A): LW is expressed in decibels applying the "A" filter as required by IEC.

Noise generated at standard power operation mode LW is **107.8 dB(A).**

Noise values included in the present document correspond to the wind turbine configuration equipped with noise reduction add-ons attached to the blade.

SG 4.5-145	
Wind Speed [m/s]	**LW [dB(A)]**
3	95.1
3.5	95.1
4	95.1
4.5	95.1
5	95.5
5.5	97.6
6	99.7
6.5	101.5
7	103.2
7.5	104.7
8	106.2
8.5	107.6
9	107.8
9.5	107.8
10	107.8
10.5	107.8
11	107.8
11.5	107.8
12	107.8
12.5	107.8
13	107.8
13.5	107.8
14	107.8
14.5	107.8
15	107.8

Noise values included in the present document correspond to the wind turbine configuration equipped with noise reduction add-ons attached to the blade.

5 NOISE SPECTRA

Table 3 shows the noise curves for the SG 4.5-145 MW expressed as A-weighted sound power level in function of wind speed at hub height, for the standard, Flexible Rating and Noise Reduction System operation and application modes.

Wind Speed [m/s]	6	7	8	9	10	11	12	13	Up to cut-out
SG 4.5-145 Baseline AM0 @ 4.5MW	99.7	103.2	106.2	107.8	107.8	107.8	107.8	107.8	107.8
SG 4.5-145 AM-3 @ 4.2MW	99.7	103.2	106.2	106.9	106.9	106.9	106.9	106.9	106.9
SG 4.5-145 AM-2 @ 4.3MW	99.7	103.2	106.2	107.2	107.2	107.2	107.2	107.2	107.2
SG 4.5-145 AM-1 @ 4.4MW	99.7	103.2	106.2	107.5	107.5	107.5	107.5	107.5	107.5
SG 4.5-145 AM+1 @ 4.6MW	99.7	103.2	106.2	108.1	108.1	108.1	108.1	108.1	108.1
SG 4.5-145 AM+2 @ 4.7MW	99.7	103.2	106.2	108.4	108.4	108.4	108.4	108.4	108.4
SG 4.5-145 AM+3 @ 4.8MW	99.7	103.2	106.2	108.7	108.7	108.7	108.7	108.7	108.7
SG 4.5-145 NRS Mode N1	99.7	103.2	105.7	105.7	105.7	105.7	105.7	105.7	105.7
SG 4.5-145 NRS Mode N2	99.7	103.2	105.2	105.2	105.2	105.2	105.2	105.2	105.2
SG 4.5-145 NRS Mode N3	99.7	103.2	103.7	103.7	103.7	103.7	103.7	103.7	103.7
SG 4.5-145 NRS Mode N4	99.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7
SG 4.5-145 NRS Mode N5	99.7	101.7	101.7	101.7	101.7	101.7	101.7	101.7	101.7
SG 4.5-145 NRS Mode N6	99.7	99.9	99.9	99.9	99.9	99.9	99.9	99.9	99.9
SG 4.5-145 NRS Mode N7	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0
SG 4.5-145 NRS Mode N8	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0	98.0

Table 3 Noise curves for the SG 4.5-145 MW for the standard, Flexible Rating and Noise Reduction System operation and application modes (ref: *SG145spectra_4X00KW_R01_13072018*).

Tables 4 to 11 show the 1/3 octave band noise spectra for the SG 4.5-145 MW expressed as A-weighted sound power level for a given frequency band, for the standard, Flexible Rating and Noise Reduction System operation and application modes, at different wind speeds at hub height.

Central Frequency [Hz]	10	12.5	16	20	25	31.5	40	50	63	80	100
SG 4.5-145 Baseline AM0 @ 4.5MW	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 AM-3 @ 4.2MW	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 AM-2 @ 4.3MW	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 AM-1 @ 4.4MW	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 AM+1 @ 4.6MW	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 AM+2 @ 4.7MW	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 AM+3 @ 4.8MW	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 NRS Mode N1	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 NRS Mode N2	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 NRS Mode N3	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 NRS Mode N4	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 NRS Mode N5	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 NRS Mode N6	38	43.7	49.4	54.8	59.4	64.1	68.3	72.9	77.2	79.7	81.6
SG 4.5-145 NRS Mode N7	38	43.7	49.4	54.8	59.3	64	68.2	72.7	76.9	79.4	81.2
SG 4.5-145 NRS Mode N8	38	43.7	49.4	54.7	59.2	63.8	67.9	72.4	76.6	78.9	80.6
Central Frequency [Hz]	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**
SG 4.5-145 Baseline AM0 @ 4.5MW	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 AM-3 @ 4.2MW	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 AM-2 @ 4.3MW	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 AM-1 @ 4.4MW	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 AM+1 @ 4.6MW	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 AM+2 @ 4.7MW	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 AM+3 @ 4.8MW	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 NRS Mode N1	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 NRS Mode N2	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 NRS Mode N3	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 NRS Mode N4	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 NRS Mode N5	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 NRS Mode N6	83.1	84.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 NRS Mode N7	82.6	83.5	84.6	86.1	86.5	86.2	86.3	87.9	87.7	88.7	89.4
SG 4.5-145 NRS Mode N8	81.9	82.6	83.5	85	85.4	85.1	85.2	86.8	86.6	87.6	88.3
Central Frequency [Hz]	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**		
SG 4.5-145 Baseline AM0 @ 4.5MW	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 AM-3 @ 4.2MW	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 AM-2 @ 4.3MW	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 AM-1 @ 4.4MW	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 AM+1 @ 4.6MW	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 AM+2 @ 4.7MW	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 AM+3 @ 4.8MW	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 NRS Mode N1	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 NRS Mode N2	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 NRS Mode N3	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 NRS Mode N4	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 NRS Mode N5	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 NRS Mode N6	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 NRS Mode N7	89.3	88.2	86.8	84.6	81.5	77.2	72	66.2	61.6		
SG 4.5-145 NRS Mode N8	88.2	87.1	85.7	83.5	80.4	76.1	70.9	65.1	60.5		

Table 4 One-third octave band noise spectra of SG 4.5-145 @ 6 m/s
(*ref: SG145spectra_4X00KW_R01_13072018*)

Central Frequency [Hz]	10	12.5	16	20	25	31.5	40	50	63	80	100
SG 4.5-145 Baseline AM0 @ 4.5MW	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 AM-3 @ 4.2MW	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 AM-2 @ 4.3MW	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 AM-1 @ 4.4MW	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 AM+1 @ 4.6MW	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 AM+2 @ 4.7MW	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 AM+3 @ 4.8MW	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 NRS Mode N1	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 NRS Mode N2	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 NRS Mode N3	41.5	47.2	52.9	58.3	62.9	67.6	71.8	76.4	80.7	83.2	85.1
SG 4.5-145 NRS Mode N4	41.5	47.2	52.9	58.3	62.9	67.5	71.7	76.3	80.5	83	84.8
SG 4.5-145 NRS Mode N5	41.5	47.2	52.9	58.2	62.8	67.4	71.5	76	80.1	82.5	84.2
SG 4.5-145 NRS Mode N6	41.5	47.2	52.8	58.1	62.6	67.1	71.1	75.4	79.4	81.6	83.1
SG 4.5-145 NRS Mode N7	41.5	47.2	52.8	58.1	62.5	67	70.9	75.2	79.1	81.1	82.6
SG 4.5-145 NRS Mode N8	41.5	47.2	52.8	58	62.4	66.8	70.7	74.9	78.7	80.6	81.9
Central Frequency [Hz]	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**
SG 4.5-145 Baseline AM0 @ 4.5MW	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 AM-3 @ 4.2MW	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 AM-2 @ 4.3MW	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 AM-1 @ 4.4MW	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 AM+1 @ 4.6MW	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 AM+2 @ 4.7MW	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 AM+3 @ 4.8MW	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 NRS Mode N1	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 NRS Mode N2	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 NRS Mode N3	86.6	87.6	88.8	90.3	90.7	90.4	90.5	92.1	91.9	92.9	93.6
SG 4.5-145 NRS Mode N4	86.2	87.2	88.3	89.8	90.2	89.9	90	91.6	91.4	92.4	93.1
SG 4.5-145 NRS Mode N5	85.5	86.3	87.3	88.8	89.2	88.9	89	90.6	90.4	91.4	92.1
SG 4.5-145 NRS Mode N6	84.2	84.7	85.4	86.9	87.3	87	87.1	88.7	88.5	89.5	90.2
SG 4.5-145 NRS Mode N7	83.5	84	84.5	86	86.4	86.1	86.2	87.8	87.6	88.6	89.3
SG 4.5-145 NRS Mode N8	82.8	83.1	83.4	84.9	85.3	85	85.1	86.7	86.5	87.5	88.2
Central Frequency [Hz]	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**		
SG 4.5-145 Baseline AM0 @ 4.5MW	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 AM-3 @ 4.2MW	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 AM-2 @ 4.3MW	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 AM-1 @ 4.4MW	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 AM+1 @ 4.6MW	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 AM+2 @ 4.7MW	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 AM+3 @ 4.8MW	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 NRS Mode N1	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 NRS Mode N2	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 NRS Mode N3	93.5	92.4	91	88.8	85.7	81.4	76.2	70.4	65.8		
SG 4.5-145 NRS Mode N4	93	91.9	90.5	88.3	85.2	80.9	75.7	69.9	65.3		
SG 4.5-145 NRS Mode N5	92	90.9	89.5	87.3	84.2	79.9	74.7	68.9	64.3		
SG 4.5-145 NRS Mode N6	90.1	89	87.6	85.4	82.3	78	72.8	67	62.4		
SG 4.5-145 NRS Mode N7	89.2	88.1	86.7	84.5	81.4	77.1	71.9	66.1	61.5		
SG 4.5-145 NRS Mode N8	88.1	87	85.6	83.4	80.3	76	70.8	65	60.4		

Table 5 One-third octave band noise spectra of SG 4.5-145 @ 7 m/s
(*ref: SG145spectra_4X00KW_R01_13072018*)

Central Frequency [Hz]	10	12.5	16	20	25	31.5	40	50	63	80	100
SG 4.5-145 Baseline AM0 @ 4.5MW	44.5	50.2	55.9	61.3	65.9	70.6	74.8	79.4	83.7	86.2	88.1
SG 4.5-145 AM-3 @ 4.2MW	44.5	50.2	55.9	61.3	65.9	70.6	74.8	79.4	83.7	86.2	88.1
SG 4.5-145 AM-2 @ 4.3MW	44.5	50.2	55.9	61.3	65.9	70.6	74.8	79.4	83.7	86.2	88.1
SG 4.5-145 AM-1 @ 4.4MW	44.5	50.2	55.9	61.3	65.9	70.6	74.8	79.4	83.7	86.2	88.1
SG 4.5-145 AM+1 @ 4.6MW	44.5	50.2	55.9	61.3	65.9	70.6	74.8	79.4	83.7	86.2	88.1
SG 4.5-145 AM+2 @ 4.7MW	44.5	50.2	55.9	61.3	65.9	70.6	74.8	79.4	83.7	86.2	88.1
SG 4.5-145 AM+3 @ 4.8MW	44.5	50.2	55.9	61.3	65.9	70.6	74.8	79.4	83.7	86.2	88.1
SG 4.5-145 NRS Mode N1	44.5	50.2	55.9	61.3	65.9	70.5	74.7	79.3	83.6	86	87.9
SG 4.5-145 NRS Mode N2	44.5	50.2	55.9	61.3	65.8	70.5	74.6	79.2	83.4	85.8	87.7
SG 4.5-145 NRS Mode N3	44.5	50.2	55.9	61.2	65.7	70.3	74.4	78.9	83	85.3	87
SG 4.5-145 NRS Mode N4	44.5	50.2	55.8	61.1	65.6	70.1	74	78.4	82.4	84.5	86
SG 4.5-145 NRS Mode N5	44.5	50.2	55.8	61.1	65.5	69.9	73.8	78.1	82	84	85.4
SG 4.5-145 NRS Mode N6	44.5	50.2	55.7	61	65.3	69.6	73.4	77.5	81.2	83.1	84.3
SG 4.5-145 NRS Mode N7	44.5	50.2	55.7	60.9	65.2	69.5	73.2	77.2	80.9	82.6	83.7
SG 4.5-145 NRS Mode N8	44.5	50.1	55.7	60.8	65.1	69.3	73	76.9	80.5	82.1	83
Central Frequency [Hz]	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**
SG 4.5-145 Baseline AM0 @ 4.5MW	89.6	90.6	91.8	93.3	93.7	93.4	93.5	95.1	94.9	95.9	96.6
SG 4.5-145 AM-3 @ 4.2MW	89.6	90.6	91.8	93.3	93.7	93.4	93.5	95.1	94.9	95.9	96.6
SG 4.5-145 AM-2 @ 4.3MW	89.6	90.6	91.8	93.3	93.7	93.4	93.5	95.1	94.9	95.9	96.6
SG 4.5-145 AM-1 @ 4.4MW	89.6	90.6	91.8	93.3	93.7	93.4	93.5	95.1	94.9	95.9	96.6
SG 4.5-145 AM+1 @ 4.6MW	89.6	90.6	91.8	93.3	93.7	93.4	93.5	95.1	94.9	95.9	96.6
SG 4.5-145 AM+2 @ 4.7MW	89.6	90.6	91.8	93.3	93.7	93.4	93.5	95.1	94.9	95.9	96.6
SG 4.5-145 AM+3 @ 4.8MW	89.6	90.6	91.8	93.3	93.7	93.4	93.5	95.1	94.9	95.9	96.6
SG 4.5-145 NRS Mode N1	89.3	90.3	91.3	92.8	93.2	92.9	93	94.6	94.4	95.4	96.1
SG 4.5-145 NRS Mode N2	89.1	90	90.7	92.2	92.6	92.3	92.4	94	93.8	94.8	95.5
SG 4.5-145 NRS Mode N3	88.2	89	89.2	90.7	91.1	90.8	90.9	92.5	92.3	93.3	94
SG 4.5-145 NRS Mode N4	87.1	87.6	88.2	89.7	90.1	89.8	89.9	91.5	91.3	92.3	93
SG 4.5-145 NRS Mode N5	86.3	86.7	87.1	88.6	89	88.7	88.8	90.4	90.2	91.2	91.9
SG 4.5-145 NRS Mode N6	84.9	85.1	85.3	86.8	87.2	86.9	87	88.6	88.4	89.4	90.1
SG 4.5-145 NRS Mode N7	84.2	84.2	84.3	85.8	86.2	85.9	86	87.6	87.4	88.4	89.1
SG 4.5-145 NRS Mode N8	83.5	83.3	83.3	84.8	85.2	84.9	85	86.6	86.4	87.4	88.1
Central Frequency [Hz]	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**		
SG 4.5-145 Baseline AM0 @ 4.5MW	96.5	95.4	94	91.8	88.7	84.4	79.2	73.4	68.8		
SG 4.5-145 AM-3 @ 4.2MW	96.5	95.4	94	91.8	88.7	84.4	79.2	73.4	68.8		
SG 4.5-145 AM-2 @ 4.3MW	96.5	95.4	94	91.8	88.7	84.4	79.2	73.4	68.8		
SG 4.5-145 AM-1 @ 4.4MW	96.5	95.4	94	91.8	88.7	84.4	79.2	73.4	68.8		
SG 4.5-145 AM+1 @ 4.6MW	96.5	95.4	94	91.8	88.7	84.4	79.2	73.4	68.8		
SG 4.5-145 AM+2 @ 4.7MW	96.5	95.4	94	91.8	88.7	84.4	79.2	73.4	68.8		
SG 4.5-145 AM+3 @ 4.8MW	96.5	95.4	94	91.8	88.7	84.4	79.2	73.4	68.8		
SG 4.5-145 NRS Mode N1	96	94.9	93.5	91.3	88.2	83.9	78.7	72.9	68.3		
SG 4.5-145 NRS Mode N2	95.4	94.3	92.9	90.7	87.6	83.3	78.1	72.3	67.7		
SG 4.5-145 NRS Mode N3	93.9	92.8	91.4	89.2	86.1	81.8	76.6	70.8	66.2		
SG 4.5-145 NRS Mode N4	92.9	91.8	90.4	88.2	85.1	80.8	75.6	69.8	65.2		
SG 4.5-145 NRS Mode N5	91.8	90.7	89.3	87.1	84	79.7	74.5	68.7	64.1		
SG 4.5-145 NRS Mode N6	90	88.9	87.5	85.3	82.2	77.9	72.7	66.9	62.3		
SG 4.5-145 NRS Mode N7	89	87.9	86.5	84.3	81.2	76.9	71.7	65.9	61.3		
SG 4.5-145 NRS Mode N8	88	86.9	85.5	83.3	80.2	75.9	70.7	64.9	60.3		

Table 6 One-third octave band noise spectra of SG 4.5-145 @ 8 m/s
(*ref: SG145spectra_4X00KW_R01_13072018*)

Central Frequency [Hz]	10	12.5	16	20	25	31.5	40	50	63	80	100
SG 4.5-145 Baseline AM0 @ 4.5MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81	85.3	87.8	89.7
SG 4.5-145 AM-3 @ 4.2MW	46.1	51.8	57.5	62.9	67.4	72.1	76.3	80.8	85	87.5	89.3
SG 4.5-145 AM-2 @ 4.3MW	46.1	51.8	57.5	62.9	67.5	72.1	76.3	80.9	85.1	87.6	89.4
SG 4.5-145 AM-1 @ 4.4MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	80.9	85.2	87.7	89.6
SG 4.5-145 AM+1 @ 4.6MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81.1	85.4	87.9	89.8
SG 4.5-145 AM+2 @ 4.7MW	46.1	51.8	57.5	62.9	67.5	72.3	76.5	81.1	85.5	88	90
SG 4.5-145 AM+3 @ 4.8MW	46.1	51.8	57.5	62.9	67.6	72.3	76.5	81.2	85.6	88.1	90.1
SG 4.5-145 NRS Mode N1	46.1	51.8	57.5	62.8	67.4	72	76.1	80.5	84.7	87	88.8
SG 4.5-145 NRS Mode N2	46.1	51.8	57.5	62.8	67.3	71.9	76	80.4	84.6	86.9	88.5
SG 4.5-145 NRS Mode N3	46.1	51.8	57.4	62.7	67.2	71.7	75.7	80.1	84.1	86.3	87.9
SG 4.5-145 NRS Mode N4	46.1	51.8	57.4	62.6	67	71.4	75.3	79.5	83.3	85.3	86.6
SG 4.5-145 NRS Mode N5	46.1	51.8	57.4	62.6	66.9	71.3	75.1	79.2	82.9	84.8	86
SG 4.5-145 NRS Mode N6	46.1	51.8	57.3	62.5	66.7	71	74.6	78.6	82.2	83.8	84.8
SG 4.5-145 NRS Mode N7	46.1	51.7	57.3	62.4	66.6	70.8	74.4	78.3	81.8	83.4	84.2
SG 4.5-145 NRS Mode N8	46.1	51.7	57.3	62.3	66.5	70.7	74.2	78	81.4	82.8	83.6
Central Frequency [Hz]	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**
SG 4.5-145 Baseline AM0 @ 4.5MW	91.2	92.2	93.4	94.9	95.3	95	95.1	96.7	96.5	97.5	98.2
SG 4.5-145 AM-3 @ 4.2MW	90.7	91.6	92.5	94	94.4	94.1	94.2	95.8	95.6	96.6	97.3
SG 4.5-145 AM-2 @ 4.3MW	90.9	91.8	92.8	94.3	94.7	94.4	94.5	96.1	95.9	96.9	97.6
SG 4.5-145 AM-1 @ 4.4MW	91	92	93.1	94.6	95	94.7	94.8	96.4	96.2	97.2	97.9
SG 4.5-145 AM+1 @ 4.6MW	91.4	92.4	93.7	95.2	95.6	95.3	95.4	97	96.8	97.8	98.5
SG 4.5-145 AM+2 @ 4.7MW	91.5	92.6	94	95.5	95.9	95.6	95.7	97.3	97.1	98.1	98.8
SG 4.5-145 AM+3 @ 4.8MW	91.7	92.8	94.3	95.8	96.2	95.9	96	97.6	97.4	98.4	99.1
SG 4.5-145 NRS Mode N1	90.1	90.9	91.2	92.7	93.1	92.8	92.9	94.5	94.3	95.3	96
SG 4.5-145 NRS Mode N2	89.8	90.5	90.7	92.2	92.6	92.3	92.4	94	93.8	94.8	95.5
SG 4.5-145 NRS Mode N3	89	89.5	89.1	90.6	91	90.7	90.8	92.4	92.2	93.2	93.9
SG 4.5-145 NRS Mode N4	87.5	87.7	88.1	89.6	90	89.7	89.8	91.4	91.2	92.2	92.9
SG 4.5-145 NRS Mode N5	86.7	86.8	87.1	88.6	89	88.7	88.8	90.4	90.2	91.2	91.9
SG 4.5-145 NRS Mode N6	85.3	85.2	85.2	86.7	87.1	86.8	86.9	88.5	88.3	89.3	90
SG 4.5-145 NRS Mode N7	84.6	84.3	84.2	85.7	86.1	85.8	85.9	87.5	87.3	88.3	89
SG 4.5-145 NRS Mode N8	83.8	83.4	83.2	84.7	85.1	84.8	84.9	86.5	86.3	87.3	88
Central Frequency [Hz]	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**		
SG 4.5-145 Baseline AM0 @ 4.5MW	98.1	97	95.6	93.4	90.3	86	80.8	75	70.4		
SG 4.5-145 AM-3 @ 4.2MW	97.2	96.1	94.7	92.5	89.4	85.1	79.9	74.1	69.5		
SG 4.5-145 AM-2 @ 4.3MW	97.5	96.4	95	92.8	89.7	85.4	80.2	74.4	69.8		
SG 4.5-145 AM-1 @ 4.4MW	97.8	96.7	95.3	93.1	90	85.7	80.5	74.7	70.1		
SG 4.5-145 AM+1 @ 4.6MW	98.4	97.3	95.9	93.7	90.6	86.3	81.1	75.3	70.7		
SG 4.5-145 AM+2 @ 4.7MW	98.7	97.6	96.2	94	90.9	86.6	81.4	75.6	71		
SG 4.5-145 AM+3 @ 4.8MW	99	97.9	96.5	94.3	91.2	86.9	81.7	75.9	71.3		
SG 4.5-145 NRS Mode N1	95.9	94.8	93.4	91.2	88.1	83.8	78.6	72.8	68.2		
SG 4.5-145 NRS Mode N2	95.4	94.3	92.9	90.7	87.6	83.3	78.1	72.3	67.7		
SG 4.5-145 NRS Mode N3	93.8	92.7	91.3	89.1	86	81.7	76.5	70.7	66.1		
SG 4.5-145 NRS Mode N4	92.8	91.7	90.3	88.1	85	80.7	75.5	69.7	65.1		
SG 4.5-145 NRS Mode N5	91.8	90.7	89.3	87.1	84	79.7	74.5	68.7	64.1		
SG 4.5-145 NRS Mode N6	89.9	88.8	87.4	85.2	82.1	77.8	72.6	66.8	62.2		
SG 4.5-145 NRS Mode N7	88.9	87.8	86.4	84.2	81.1	76.8	71.6	65.8	61.2		
SG 4.5-145 NRS Mode N8	87.9	86.8	85.4	83.2	80.1	75.8	70.6	64.8	60.2		

Table 7 One-third octave band noise spectra of SG 4.5-145 @ 9 m/s
(*ref: SG145spectra_4X00KW_R01_13072018*)

Central Frequency [Hz]	10	12.5	16	20	25	31.5	40	50	63	80	100
SG 4.5-145 Baseline AM0 @ 4.5MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81	85.3	87.8	89.7
SG 4.5-145 AM-3 @ 4.2MW	46.1	51.8	57.5	62.9	67.4	72.1	76.3	80.8	85	87.5	89.3
SG 4.5-145 AM-2 @ 4.3MW	46.1	51.8	57.5	62.9	67.5	72.1	76.3	80.9	85.1	87.6	89.4
SG 4.5-145 AM-1 @ 4.4MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	80.9	85.2	87.7	89.6
SG 4.5-145 AM+1 @ 4.6MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81.1	85.4	87.9	89.8
SG 4.5-145 AM+2 @ 4.7MW	46.1	51.8	57.5	62.9	67.5	72.3	76.5	81.1	85.5	88	90
SG 4.5-145 AM+3 @ 4.8MW	46.1	51.8	57.5	62.9	67.6	72.3	76.5	81.2	85.6	88.1	90.1
SG 4.5-145 NRS Mode N1	46.1	51.8	57.5	62.8	67.4	72	76.1	80.5	84.7	87	88.8
SG 4.5-145 NRS Mode N2	46.1	51.8	57.5	62.8	67.3	71.9	76	80.4	84.6	86.9	88.5
SG 4.5-145 NRS Mode N3	46.1	51.8	57.4	62.7	67.2	71.7	75.7	80.1	84.1	86.3	87.9
SG 4.5-145 NRS Mode N4	46.1	51.8	57.4	62.6	67	71.4	75.3	79.5	83.3	85.3	86.6
SG 4.5-145 NRS Mode N5	46.1	51.8	57.4	62.6	66.9	71.3	75.1	79.2	82.9	84.8	86
SG 4.5-145 NRS Mode N6	46.1	51.8	57.3	62.5	66.7	71	74.6	78.6	82.2	83.8	84.8
SG 4.5-145 NRS Mode N7	46.1	51.7	57.3	62.4	66.6	70.8	74.4	78.3	81.8	83.4	84.2
SG 4.5-145 NRS Mode N8	46.1	51.7	57.3	62.3	66.5	70.7	74.2	78	81.4	82.8	83.6
Central Frequency [Hz]	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**
SG 4.5-145 Baseline AM0 @ 4.5MW	91.2	92.2	93.4	94.9	95.3	95	95.1	96.7	96.5	97.5	98.2
SG 4.5-145 AM-3 @ 4.2MW	90.7	91.6	92.5	94	94.4	94.1	94.2	95.8	95.6	96.6	97.3
SG 4.5-145 AM-2 @ 4.3MW	90.9	91.8	92.8	94.3	94.7	94.4	94.5	96.1	95.9	96.9	97.6
SG 4.5-145 AM-1 @ 4.4MW	91	92	93.1	94.6	95	94.7	94.8	96.4	96.2	97.2	97.9
SG 4.5-145 AM+1 @ 4.6MW	91.4	92.4	93.7	95.2	95.6	95.3	95.4	97	96.8	97.8	98.5
SG 4.5-145 AM+2 @ 4.7MW	91.5	92.6	94	95.5	95.9	95.6	95.7	97.3	97.1	98.1	98.8
SG 4.5-145 AM+3 @ 4.8MW	91.7	92.8	94.3	95.8	96.2	95.9	96	97.6	97.4	98.4	99.1
SG 4.5-145 NRS Mode N1	90.1	90.9	91.2	92.7	93.1	92.8	92.9	94.5	94.3	95.3	96
SG 4.5-145 NRS Mode N2	89.8	90.5	90.7	92.2	92.6	92.3	92.4	94	93.8	94.8	95.5
SG 4.5-145 NRS Mode N3	89	89.5	89.1	90.6	91	90.7	90.8	92.4	92.2	93.2	93.9
SG 4.5-145 NRS Mode N4	87.5	87.7	88.1	89.6	90	89.7	89.8	91.4	91.2	92.2	92.9
SG 4.5-145 NRS Mode N5	86.7	86.8	87.1	88.6	89	88.7	88.8	90.4	90.2	91.2	91.9
SG 4.5-145 NRS Mode N6	85.3	85.2	85.2	86.7	87.1	86.8	86.9	88.5	88.3	89.3	90
SG 4.5-145 NRS Mode N7	84.6	84.3	84.2	85.7	86.1	85.8	85.9	87.5	87.3	88.3	89
SG 4.5-145 NRS Mode N8	83.8	83.4	83.2	84.7	85.1	84.8	84.9	86.5	86.3	87.3	88
Central Frequency [Hz]	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**		
SG 4.5-145 Baseline AM0 @ 4.5MW	98.1	97	95.6	93.4	90.3	86	80.8	75	70.4		
SG 4.5-145 AM-3 @ 4.2MW	97.2	96.1	94.7	92.5	89.4	85.1	79.9	74.1	69.5		
SG 4.5-145 AM-2 @ 4.3MW	97.5	96.4	95	92.8	89.7	85.4	80.2	74.4	69.8		
SG 4.5-145 AM-1 @ 4.4MW	97.8	96.7	95.3	93.1	90	85.7	80.5	74.7	70.1		
SG 4.5-145 AM+1 @ 4.6MW	98.4	97.3	95.9	93.7	90.6	86.3	81.1	75.3	70.7		
SG 4.5-145 AM+2 @ 4.7MW	98.7	97.6	96.2	94	90.9	86.6	81.4	75.6	71		
SG 4.5-145 AM+3 @ 4.8MW	99	97.9	96.5	94.3	91.2	86.9	81.7	75.9	71.3		
SG 4.5-145 NRS Mode N1	95.9	94.8	93.4	91.2	88.1	83.8	78.6	72.8	68.2		
SG 4.5-145 NRS Mode N2	95.4	94.3	92.9	90.7	87.6	83.3	78.1	72.3	67.7		
SG 4.5-145 NRS Mode N3	93.8	92.7	91.3	89.1	86	81.7	76.5	70.7	66.1		
SG 4.5-145 NRS Mode N4	92.8	91.7	90.3	88.1	85	80.7	75.5	69.7	65.1		
SG 4.5-145 NRS Mode N5	91.8	90.7	89.3	87.1	84	79.7	74.5	68.7	64.1		
SG 4.5-145 NRS Mode N6	89.9	88.8	87.4	85.2	82.1	77.8	72.6	66.8	62.2		
SG 4.5-145 NRS Mode N7	88.9	87.8	86.4	84.2	81.1	76.8	71.6	65.8	61.2		
SG 4.5-145 NRS Mode N8	87.9	86.8	85.4	83.2	80.1	75.8	70.6	64.8	60.2		

Table 8 One-third octave band noise spectra of SG 4.5-145 @ 10 m/s
(*ref: SG145spectra_4X00KW_R01_13072018*)

Central Frequency [Hz]	10	12.5	16	20	25	31.5	40	50	63	80	100
SG 4.5-145 Baseline AM0 @ 4.5MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81	85.3	87.8	89.7
SG 4.5-145 AM-3 @ 4.2MW	46.1	51.8	57.5	62.9	67.4	72.1	76.3	80.8	85	87.5	89.3
SG 4.5-145 AM-2 @ 4.3MW	46.1	51.8	57.5	62.9	67.5	72.1	76.3	80.9	85.1	87.6	89.4
SG 4.5-145 AM-1 @ 4.4MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	80.9	85.2	87.7	89.6
SG 4.5-145 AM+1 @ 4.6MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81.1	85.4	87.9	89.8
SG 4.5-145 AM+2 @ 4.7MW	46.1	51.8	57.5	62.9	67.5	72.3	76.5	81.1	85.5	88	90
SG 4.5-145 AM+3 @ 4.8MW	46.1	51.8	57.5	62.9	67.6	72.3	76.5	81.2	85.6	88.1	90.1
SG 4.5-145 NRS Mode N1	46.1	51.8	57.5	62.8	67.4	72	76.1	80.5	84.7	87	88.8
SG 4.5-145 NRS Mode N2	46.1	51.8	57.5	62.8	67.3	71.9	76	80.4	84.6	86.9	88.5
SG 4.5-145 NRS Mode N3	46.1	51.8	57.4	62.7	67.2	71.7	75.7	80.1	84.1	86.3	87.9
SG 4.5-145 NRS Mode N4	46.1	51.8	57.4	62.6	67	71.4	75.3	79.5	83.3	85.3	86.6
SG 4.5-145 NRS Mode N5	46.1	51.8	57.4	62.6	66.9	71.3	75.1	79.2	82.9	84.8	86
SG 4.5-145 NRS Mode N6	46.1	51.8	57.3	62.5	66.7	71	74.6	78.6	82.2	83.8	84.8
SG 4.5-145 NRS Mode N7	46.1	51.7	57.3	62.4	66.6	70.8	74.4	78.3	81.8	83.4	84.2
SG 4.5-145 NRS Mode N8	46.1	51.7	57.3	62.3	66.5	70.7	74.2	78	81.4	82.8	83.6
Central Frequency [Hz]	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**
SG 4.5-145 Baseline AM0 @ 4.5MW	91.2	92.2	93.4	94.9	95.3	95	95.1	96.7	96.5	97.5	98.2
SG 4.5-145 AM-3 @ 4.2MW	90.7	91.6	92.5	94	94.4	94.1	94.2	95.8	95.6	96.6	97.3
SG 4.5-145 AM-2 @ 4.3MW	90.9	91.8	92.8	94.3	94.7	94.4	94.5	96.1	95.9	96.9	97.6
SG 4.5-145 AM-1 @ 4.4MW	91	92	93.1	94.6	95	94.7	94.8	96.4	96.2	97.2	97.9
SG 4.5-145 AM+1 @ 4.6MW	91.4	92.4	93.7	95.2	95.6	95.3	95.4	97	96.8	97.8	98.5
SG 4.5-145 AM+2 @ 4.7MW	91.5	92.6	94	95.5	95.9	95.6	95.7	97.3	97.1	98.1	98.8
SG 4.5-145 AM+3 @ 4.8MW	91.7	92.8	94.3	95.8	96.2	95.9	96	97.6	97.4	98.4	99.1
SG 4.5-145 NRS Mode N1	90.1	90.9	91.2	92.7	93.1	92.8	92.9	94.5	94.3	95.3	96
SG 4.5-145 NRS Mode N2	89.8	90.5	90.7	92.2	92.6	92.3	92.4	94	93.8	94.8	95.5
SG 4.5-145 NRS Mode N3	89	89.5	89.1	90.6	91	90.7	90.8	92.4	92.2	93.2	93.9
SG 4.5-145 NRS Mode N4	87.5	87.7	88.1	89.6	90	89.7	89.8	91.4	91.2	92.2	92.9
SG 4.5-145 NRS Mode N5	86.7	86.8	87.1	88.6	89	88.7	88.8	90.4	90.2	91.2	91.9
SG 4.5-145 NRS Mode N6	85.3	85.2	85.2	86.7	87.1	86.8	86.9	88.5	88.3	89.3	90
SG 4.5-145 NRS Mode N7	84.6	84.3	84.2	85.7	86.1	85.8	85.9	87.5	87.3	88.3	89
SG 4.5-145 NRS Mode N8	83.8	83.4	83.2	84.7	85.1	84.8	84.9	86.5	86.3	87.3	88
Central Frequency [Hz]	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**		
SG 4.5-145 Baseline AM0 @ 4.5MW	98.1	97	95.6	93.4	90.3	86	80.8	75	70.4		
SG 4.5-145 AM-3 @ 4.2MW	97.2	96.1	94.7	92.5	89.4	85.1	79.9	74.1	69.5		
SG 4.5-145 AM-2 @ 4.3MW	97.5	96.4	95	92.8	89.7	85.4	80.2	74.4	69.8		
SG 4.5-145 AM-1 @ 4.4MW	97.8	96.7	95.3	93.1	90	85.7	80.5	74.7	70.1		
SG 4.5-145 AM+1 @ 4.6MW	98.4	97.3	95.9	93.7	90.6	86.3	81.1	75.3	70.7		
SG 4.5-145 AM+2 @ 4.7MW	98.7	97.6	96.2	94	90.9	86.6	81.4	75.6	71		
SG 4.5-145 AM+3 @ 4.8MW	99	97.9	96.5	94.3	91.2	86.9	81.7	75.9	71.3		
SG 4.5-145 NRS Mode N1	95.9	94.8	93.4	91.2	88.1	83.8	78.6	72.8	68.2		
SG 4.5-145 NRS Mode N2	95.4	94.3	92.9	90.7	87.6	83.3	78.1	72.3	67.7		
SG 4.5-145 NRS Mode N3	93.8	92.7	91.3	89.1	86	81.7	76.5	70.7	66.1		
SG 4.5-145 NRS Mode N4	92.8	91.7	90.3	88.1	85	80.7	75.5	69.7	65.1		
SG 4.5-145 NRS Mode N5	91.8	90.7	89.3	87.1	84	79.7	74.5	68.7	64.1		
SG 4.5-145 NRS Mode N6	89.9	88.8	87.4	85.2	82.1	77.8	72.6	66.8	62.2		
SG 4.5-145 NRS Mode N7	88.9	87.8	86.4	84.2	81.1	76.8	71.6	65.8	61.2		
SG 4.5-145 NRS Mode N8	87.9	86.8	85.4	83.2	80.1	75.8	70.6	64.8	60.2		

Table 9 One-third octave band noise spectra of SG 4.5-145 @ 11 m/s
(*ref: SG145spectra_4X00KW_R01_13072018*)

Central Frequency [Hz]	10	12.5	16	20	25	31.5	40	50	63	80	100
SG 4.5-145 Baseline AM0 @ 4.5MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81	85.3	87.8	89.7
SG 4.5-145 AM-3 @ 4.2MW	46.1	51.8	57.5	62.9	67.4	72.1	76.3	80.8	85	87.5	89.3
SG 4.5-145 AM-2 @ 4.3MW	46.1	51.8	57.5	62.9	67.5	72.1	76.3	80.9	85.1	87.6	89.4
SG 4.5-145 AM-1 @ 4.4MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	80.9	85.2	87.7	89.6
SG 4.5-145 AM+1 @ 4.6MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81.1	85.4	87.9	89.8
SG 4.5-145 AM+2 @ 4.7MW	46.1	51.8	57.5	62.9	67.5	72.3	76.5	81.1	85.5	88	90
SG 4.5-145 AM+3 @ 4.8MW	46.1	51.8	57.5	62.9	67.6	72.3	76.5	81.2	85.6	88.1	90.1
SG 4.5-145 NRS Mode N1	46.1	51.8	57.5	62.8	67.4	72	76.1	80.5	84.7	87	88.8
SG 4.5-145 NRS Mode N2	46.1	51.8	57.5	62.8	67.3	71.9	76	80.4	84.6	86.9	88.5
SG 4.5-145 NRS Mode N3	46.1	51.8	57.4	62.7	67.2	71.7	75.7	80.1	84.1	86.3	87.9
SG 4.5-145 NRS Mode N4	46.1	51.8	57.4	62.6	67	71.4	75.3	79.5	83.3	85.3	86.6
SG 4.5-145 NRS Mode N5	46.1	51.8	57.4	62.6	66.9	71.3	75.1	79.2	82.9	84.8	86
SG 4.5-145 NRS Mode N6	46.1	51.8	57.3	62.5	66.7	71	74.6	78.6	82.2	83.8	84.8
SG 4.5-145 NRS Mode N7	46.1	51.7	57.3	62.4	66.6	70.8	74.4	78.3	81.8	83.4	84.2
SG 4.5-145 NRS Mode N8	46.1	51.7	57.3	62.3	66.5	70.7	74.2	78	81.4	82.8	83.6
Central Frequency [Hz]	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**
SG 4.5-145 Baseline AM0 @ 4.5MW	91.2	92.2	93.4	94.9	95.3	95	95.1	96.7	96.5	97.5	98.2
SG 4.5-145 AM-3 @ 4.2MW	90.7	91.6	92.5	94	94.4	94.1	94.2	95.8	95.6	96.6	97.3
SG 4.5-145 AM-2 @ 4.3MW	90.9	91.8	92.8	94.3	94.7	94.4	94.5	96.1	95.9	96.9	97.6
SG 4.5-145 AM-1 @ 4.4MW	91	92	93.1	94.6	95	94.7	94.8	96.4	96.2	97.2	97.9
SG 4.5-145 AM+1 @ 4.6MW	91.4	92.4	93.7	95.2	95.6	95.3	95.4	97	96.8	97.8	98.5
SG 4.5-145 AM+2 @ 4.7MW	91.5	92.6	94	95.5	95.9	95.6	95.7	97.3	97.1	98.1	98.8
SG 4.5-145 AM+3 @ 4.8MW	91.7	92.8	94.3	95.8	96.2	95.9	96	97.6	97.4	98.4	99.1
SG 4.5-145 NRS Mode N1	90.1	90.9	91.2	92.7	93.1	92.8	92.9	94.5	94.3	95.3	96
SG 4.5-145 NRS Mode N2	89.8	90.5	90.7	92.2	92.6	92.3	92.4	94	93.8	94.8	95.5
SG 4.5-145 NRS Mode N3	89	89.5	89.1	90.6	91	90.7	90.8	92.4	92.2	93.2	93.9
SG 4.5-145 NRS Mode N4	87.5	87.7	88.1	89.6	90	89.7	89.8	91.4	91.2	92.2	92.9
SG 4.5-145 NRS Mode N5	86.7	86.8	87.1	88.6	89	88.7	88.8	90.4	90.2	91.2	91.9
SG 4.5-145 NRS Mode N6	85.3	85.2	85.2	86.7	87.1	86.8	86.9	88.5	88.3	89.3	90
SG 4.5-145 NRS Mode N7	84.6	84.3	84.2	85.7	86.1	85.8	85.9	87.5	87.3	88.3	89
SG 4.5-145 NRS Mode N8	83.8	83.4	83.2	84.7	85.1	84.8	84.9	86.5	86.3	87.3	88
Central Frequency [Hz]	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**		
SG 4.5-145 Baseline AM0 @ 4.5MW	98.1	97	95.6	93.4	90.3	86	80.8	75	70.4		
SG 4.5-145 AM-3 @ 4.2MW	97.2	96.1	94.7	92.5	89.4	85.1	79.9	74.1	69.5		
SG 4.5-145 AM-2 @ 4.3MW	97.5	96.4	95	92.8	89.7	85.4	80.2	74.4	69.8		
SG 4.5-145 AM-1 @ 4.4MW	97.8	96.7	95.3	93.1	90	85.7	80.5	74.7	70.1		
SG 4.5-145 AM+1 @ 4.6MW	98.4	97.3	95.9	93.7	90.6	86.3	81.1	75.3	70.7		
SG 4.5-145 AM+2 @ 4.7MW	98.7	97.6	96.2	94	90.9	86.6	81.4	75.6	71		
SG 4.5-145 AM+3 @ 4.8MW	99	97.9	96.5	94.3	91.2	86.9	81.7	75.9	71.3		
SG 4.5-145 NRS Mode N1	95.9	94.8	93.4	91.2	88.1	83.8	78.6	72.8	68.2		
SG 4.5-145 NRS Mode N2	95.4	94.3	92.9	90.7	87.6	83.3	78.1	72.3	67.7		
SG 4.5-145 NRS Mode N3	93.8	92.7	91.3	89.1	86	81.7	76.5	70.7	66.1		
SG 4.5-145 NRS Mode N4	92.8	91.7	90.3	88.1	85	80.7	75.5	69.7	65.1		
SG 4.5-145 NRS Mode N5	91.8	90.7	89.3	87.1	84	79.7	74.5	68.7	64.1		
SG 4.5-145 NRS Mode N6	89.9	88.8	87.4	85.2	82.1	77.8	72.6	66.8	62.2		
SG 4.5-145 NRS Mode N7	88.9	87.8	86.4	84.2	81.1	76.8	71.6	65.8	61.2		
SG 4.5-145 NRS Mode N8	87.9	86.8	85.4	83.2	80.1	75.8	70.6	64.8	60.2		

Table 10 One-third octave band noise spectra of SG 4.5-145 @ 12 m/s
(*ref: SG145spectra_4X00KW_R01_13072018*)

Central Frequency [Hz]	10	12.5	16	20	25	31.5	40	50	63	80	100
SG 4.5-145 Baseline AM0 @ 4.5MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81	85.3	87.8	89.7
SG 4.5-145 AM-3 @ 4.2MW	46.1	51.8	57.5	62.9	67.4	72.1	76.3	80.8	85	87.5	89.3
SG 4.5-145 AM-2 @ 4.3MW	46.1	51.8	57.5	62.9	67.5	72.1	76.3	80.9	85.1	87.6	89.4
SG 4.5-145 AM-1 @ 4.4MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	80.9	85.2	87.7	89.6
SG 4.5-145 AM+1 @ 4.6MW	46.1	51.8	57.5	62.9	67.5	72.2	76.4	81.1	85.4	87.9	89.8
SG 4.5-145 AM+2 @ 4.7MW	46.1	51.8	57.5	62.9	67.5	72.3	76.5	81.1	85.5	88	90
SG 4.5-145 AM+3 @ 4.8MW	46.1	51.8	57.5	62.9	67.6	72.3	76.5	81.2	85.6	88.1	90.1
SG 4.5-145 NRS Mode N1	46.1	51.8	57.5	62.8	67.4	72	76.1	80.5	84.7	87	88.8
SG 4.5-145 NRS Mode N2	46.1	51.8	57.5	62.8	67.3	71.9	76	80.4	84.6	86.9	88.5
SG 4.5-145 NRS Mode N3	46.1	51.8	57.4	62.7	67.2	71.7	75.7	80.1	84.1	86.3	87.9
SG 4.5-145 NRS Mode N4	46.1	51.8	57.4	62.6	67	71.4	75.3	79.5	83.3	85.3	86.6
SG 4.5-145 NRS Mode N5	46.1	51.8	57.4	62.6	66.9	71.3	75.1	79.2	82.9	84.8	86
SG 4.5-145 NRS Mode N6	46.1	51.8	57.3	62.5	66.7	71	74.6	78.6	82.2	83.8	84.8
SG 4.5-145 NRS Mode N7	46.1	51.7	57.3	62.4	66.6	70.8	74.4	78.3	81.8	83.4	84.2
SG 4.5-145 NRS Mode N8	46.1	51.7	57.3	62.3	66.5	70.7	74.2	78	81.4	82.8	83.6
Central Frequency [Hz]	**125**	**160**	**200**	**250**	**315**	**400**	**500**	**630**	**800**	**1000**	**1250**
SG 4.5-145 Baseline AM0 @ 4.5MW	91.2	92.2	93.4	94.9	95.3	95	95.1	96.7	96.5	97.5	98.2
SG 4.5-145 AM-3 @ 4.2MW	90.7	91.6	92.5	94	94.4	94.1	94.2	95.8	95.6	96.6	97.3
SG 4.5-145 AM-2 @ 4.3MW	90.9	91.8	92.8	94.3	94.7	94.4	94.5	96.1	95.9	96.9	97.6
SG 4.5-145 AM-1 @ 4.4MW	91	92	93.1	94.6	95	94.7	94.8	96.4	96.2	97.2	97.9
SG 4.5-145 AM+1 @ 4.6MW	91.4	92.4	93.7	95.2	95.6	95.3	95.4	97	96.8	97.8	98.5
SG 4.5-145 AM+2 @ 4.7MW	91.5	92.6	94	95.5	95.9	95.6	95.7	97.3	97.1	98.1	98.8
SG 4.5-145 AM+3 @ 4.8MW	91.7	92.8	94.3	95.8	96.2	95.9	96	97.6	97.4	98.4	99.1
SG 4.5-145 NRS Mode N1	90.1	90.9	91.2	92.7	93.1	92.8	92.9	94.5	94.3	95.3	96
SG 4.5-145 NRS Mode N2	89.8	90.5	90.7	92.2	92.6	92.3	92.4	94	93.8	94.8	95.5
SG 4.5-145 NRS Mode N3	89	89.5	89.1	90.6	91	90.7	90.8	92.4	92.2	93.2	93.9
SG 4.5-145 NRS Mode N4	87.5	87.7	88.1	89.6	90	89.7	89.8	91.4	91.2	92.2	92.9
SG 4.5-145 NRS Mode N5	86.7	86.8	87.1	88.6	89	88.7	88.8	90.4	90.2	91.2	91.9
SG 4.5-145 NRS Mode N6	85.3	85.2	85.2	86.7	87.1	86.8	86.9	88.5	88.3	89.3	90
SG 4.5-145 NRS Mode N7	84.6	84.3	84.2	85.7	86.1	85.8	85.9	87.5	87.3	88.3	89
SG 4.5-145 NRS Mode N8	83.8	83.4	83.2	84.7	85.1	84.8	84.9	86.5	86.3	87.3	88
Central Frequency [Hz]	**1600**	**2000**	**2500**	**3150**	**4000**	**5000**	**6300**	**8000**	**10000**		
SG 4.5-145 Baseline AM0 @ 4.5MW	98.1	97	95.6	93.4	90.3	86	80.8	75	70.4		
SG 4.5-145 AM-3 @ 4.2MW	97.2	96.1	94.7	92.5	89.4	85.1	79.9	74.1	69.5		
SG 4.5-145 AM-2 @ 4.3MW	97.5	96.4	95	92.8	89.7	85.4	80.2	74.4	69.8		
SG 4.5-145 AM-1 @ 4.4MW	97.8	96.7	95.3	93.1	90	85.7	80.5	74.7	70.1		
SG 4.5-145 AM+1 @ 4.6MW	98.4	97.3	95.9	93.7	90.6	86.3	81.1	75.3	70.7		
SG 4.5-145 AM+2 @ 4.7MW	98.7	97.6	96.2	94	90.9	86.6	81.4	75.6	71		
SG 4.5-145 AM+3 @ 4.8MW	99	97.9	96.5	94.3	91.2	86.9	81.7	75.9	71.3		
SG 4.5-145 NRS Mode N1	95.9	94.8	93.4	91.2	88.1	83.8	78.6	72.8	68.2		
SG 4.5-145 NRS Mode N2	95.4	94.3	92.9	90.7	87.6	83.3	78.1	72.3	67.7		
SG 4.5-145 NRS Mode N3	93.8	92.7	91.3	89.1	86	81.7	76.5	70.7	66.1		
SG 4.5-145 NRS Mode N4	92.8	91.7	90.3	88.1	85	80.7	75.5	69.7	65.1		
SG 4.5-145 NRS Mode N5	91.8	90.7	89.3	87.1	84	79.7	74.5	68.7	64.1		
SG 4.5-145 NRS Mode N6	89.9	88.8	87.4	85.2	82.1	77.8	72.6	66.8	62.2		
SG 4.5-145 NRS Mode N7	88.9	87.8	86.4	84.2	81.1	76.8	71.6	65.8	61.2		
SG 4.5-145 NRS Mode N8	87.9	86.8	85.4	83.2	80.1	75.8	70.6	64.8	60.2		

Table 11 One-third octave band noise spectra of SG 4.5-145 @ 13 m/s and up to cut out wind speed (*ref: SG145spectra_4X00KW_R01_13072018*)