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| Project : | IN070 – WFI-P ENG | | |

Noise data sheet W46_50.docx

W18V46/50/50DF/50SG noise data sheet

1. Engine

a. Sound power level

A-weighted sound power level of the engine, ref. 1pW:

| Frequency [Hz] | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | Total |
|---|------|----|-----|-----|-----|------|------|------|------|------------|
| A-weighted sound power level $L_{w,A}$ [dB] | - | 87 | 108 | 115 | 120 | 122 | 124 | 120 | 112 | 128 |

Sound power level is based on measurement made according to standard ISO 9614-2:1996 Acoustics -- Determination of sound power levels of noise sources using sound intensity -- Part 2: Measurement by scanning. This is to be treated as primary noise data for engine.

b. Spatial averaged sound pressure level

Typical spatial averaged A-weighted sound pressure level inside engine hall is 110 dB(A). The spatial average sound pressure value represents noise incident on engine hall walls and could then be used for power plant structure acoustic design.

c. Surface averaged sound pressure level

Typical surface averaged A-weighted sound pressure level of Wärtsilä genset is 115 dB(A) at 1 m distance. In case of separate concrete engine cell installation, absorption material may be needed in the engine cell to reduce unnecessary reflections and reach the stated value.

2. Exhaust gas outlet

Exhaust gas outlet A-weighted sound power level without silencer, ref. 1pW:

| Frequency [Hz] | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | Total |
|---|------|-----|-----|-----|-----|------|------|------|------|------------|
| A-weighted sound power level $L_{w,A}$ [dB] | 120 | 121 | 125 | 133 | 133 | 135 | 139 | 117 | - | 142 |

One outlet per engine.

3. Insulated exhaust gas ducting

Exhaust gas ducting A-weighted sound power level without silencer, ref. 1pW:

| Frequency [Hz] | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | Total |
|---|------|----|-----|-----|-----|------|------|------|------|-----------|
| A-weighted sound power level $L_{w,A}$ [dB/m] | 63 | 71 | 70 | 76 | 85 | 91 | 79 | 79 | 66 | 93 |

Sound power level per meter length of the source.

4. Charge air intake

Charge air intake A-weighted sound power level without silencer, ref. 1pW:

| | | | | | | | | | | |
|---|------|----|-----|-----|-----|------|------|------|------|--------------|
| Frequency [Hz] | 31.5 | 63 | 125 | 250 | 500 | 1000 | 2000 | 4000 | 8000 | Total |
| A-weighted sound power level $L_{w,A}$ [dB] | 79 | 89 | 92 | 95 | 108 | 125 | 135 | 136 | 134 | 140 |

Two intakes per engine.

Data for environmental impact assessment use only - not to be taken as guaranteed values.