Cogenco

a Dalkia company

Noise information for Packaged Cogenco CHP-Tesco Stores

Noise

The CHP unit is powered by a lean burn gas reciprocating engine. The engine and alternator are mounted together onto the base frame using anti-vibration mountings to prevent the transmission of vibration to external structures.

A weatherproof acoustic enclosure is made of zinc enamelled sheet steel and insulated with sound absorbing material. The outside is painted and provided with doors on the sides and at the engine end to enable maintenance and repairs to be carried out. The sound level on full load is rated at 65dB (A) at 1 metre although alternative sound level values can be specified at time of order. All services connection to the CHP can be made on the outside of the unit.

For ventilation and combustion air, the enclosure is provided with an electric fan. Inlet and outlets situated on the top of the enclosure are fitted with noise attenuators which are rated at 65dB (A) at 1 metre.

Exhaust gas silencers are fitted to the top of the container and are rated at a sound level of 65 dB(A) at 1 metre.

The CHP range to be utilised on the Tesco Stores sites will use MAN prime movers and attached are sound spectrums for the CGC 140 kWe CHP Unit and the CGC 237 kWe unit.

Sound Pressure Levels

Cogenco

CGC 140	Engine:	MAN E 2876 TE 302	Speed:	1500	RPM
Overall level	65	dB(A)			

Engine - Unsilenced

Frequency	63	125	250	500	1k	2k	4k	8k
Engine noise pressure level [dB] (at 1m)	60	79.5	88	93.1	97.7	98	95.1	90.7
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Subresult noise pressure level [dB(A)]	33.6	63.4	79.4	89.9	97.7	99.2	96.1	89.6
Noise pressure level at1m [dB(A)]	**103.1**							

Exhaust gas system unsilenced

Frequency	63	125	250	500	1k	2k	4k	8k
Soundpressure level [dB] (at 1m)	84.5	87.6	83.1	97.2	108.3	99.7	101.7	90.3
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Soundpressure level [dB] (at 1m)	58.1	71.5	74.5	94	108.3	100.9	102.7	89.2
Soundpressure level [dB] (at 1m)	**110.1**							

With canopy

Frequency	63	125	250	500	1k	2k	4k	8k
Engine noise pressure level [dB] (at 1m)	60	79.5	88	93.1	97.7	98	95.1	90.7
Damping canopy [dB]	-15	-23	-30	-35	-38	-39	-41	-40
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Subresult noise pressure level [dB(A)]	18.6	40.4	49.4	54.9	59.7	60.2	55.1	49.6
Noise pressure level at1m [dB(A)]	**64.5**							

Air attenuators

Frequency	63	125	250	500	1k	2k	4k	8k
Engine noise pressure level at 1m [dB]	60	79.5	88	93.1	97.7	98	95.1	90.7
Damping attenuator [dB]	-8	-15	-30	-42	-38	-44	-46	-32
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Subresult noise pressure level [dB(A)]	25.6	48.4	49.4	47.9	59.7	55.2	50.1	57.6
Noise pressure level at 1m [dB(A)]	**63.3**							

Exhaust gas system - silenced

Frequency	63	125	250	500	1k	2k	4k	8k
Soundpressure level [dB] (at 1m)	84.5	87.6	83.1	97.2	108.3	99.7	101.7	90.3
Soundpres. reduction resonance silencer	-8	-15	-29	-28	-27	-7	-3	-2
Soundpres. reduction absorbtion silencer	-19	-33	-38	-46	-49	-45	-43	-29
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Soundpressure level [dB] (at 1m)	31.1	23.5	7.5	20	32.3	48.9	56.7	58.2
Soundpressure level [dB] (at 1m)	**60.8**							

Sound Pressure Levels

Cogenco

CGC 237	Engine:	MAN E 2842 E 312	Speed:	1500	RPM
Overall level	65	dB(A)			

Engine - Unsilenced

Frequency	63	125	250	500	1k	2k	4k	8k
Engine noise pressure level [dB] (at 1m)	75.8	76.7	89.7	96.2	98.5	97.7	93.7	89.7
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Subresult noise pressure level [dB(A)]	49.4	60.6	81.1	93.0	98.5	98.9	94.7	88.6
Noise pressure level at1m [dB(A)]	**103.1**							

Exhaust gas system unsilenced

Frequency	63	125	250	500	1k	2k	4k	8k
Soundpressure level [dB] (at 1m)	95.6	98.4	98.4	104.2	120	100.3	100.3	87
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Soundpressure level [dB] (at 1m)	69.2	82.3	89.8	101	120	101.5	101.3	85.9
Soundpressure level [dB] (at 1m)	**120.2**							

With canopy

Frequency	63	125	250	500	1k	2k	4k	8k
Engine noise pressure level [dB] (at 1m)	75.8	76.7	89.7	96.2	98.5	97.7	93.7	89.7
Damping canopy [dB]	-15	-23	-30	-35	-38	-39	-41	-40
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Subresult noise pressure level [dB(A)]	34.4	37.6	51.1	58.0	60.5	59.9	53.7	48.6
Noise pressure level at1m [dB(A)]	**65.0**							

Air attenuators

Frequency	63	125	250	500	1k	2k	4k	8k
Engine noise pressure level at 1m [dB]	75.8	76.7	89.7	96.2	98.5	97.7	93.7	89.7
Damping attenuator [dB]	-8	-15	-30	-42	-38	-44	-46	-32
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Subresult noise pressure level [dB(A)]	41.4	45.6	51.1	51	60.5	54.9	48.7	56.6
Noise pressure level at 1m [dB(A)]	**63.6**							

Exhaust gas system - silenced

Frequency	63	125	250	500	1k	2k	4k	8k
Soundpressure level [dB] (at 1m)	95.6	98.4	98.4	104.2	120	100.3	100.3	87
Soundpres. reduction resonance silencer	-7	-17	-23	-12	-23	-7	-3	-1
Soundpres. reduction absorbtion silencer	-16	-37	-35	-40	-47	-43	-38	-28
dB(A) correction	-26.4	-16.1	-8.6	-3.2	0	1.2	1	-1.1
Soundpressure level [dB] (at 1m)	46.2	28.3	31.8	49	50	51.5	60.3	56.9
Soundpressure level [dB] (at 1m)	**62.8**							