

## SUMMARY OF EXHAUST SYSTEM CONFIGURATION:

Engine Selection: G2&G3 Manufacturer: Cummins  
Application: Gen-set Model: KTA38-G3  
Brake horsepower: 0.0 Electrical power: 750.0  
Allowable backpressure: 41.0 Design backpressure: 0.0  
BEMP: 0.0 RPM: 1800 Exhaust Temp: 865.0  
Exhaust Flow: 7645.0 Outlet dia: 5.8 # of outlets: 2  
Outlet Configuration:

## Silex Silencer Selections:

- 1) JCT-12-ST S.C. LPD 低背壓超級寧靜型消音器  
2) GENYC-12-ST Combo 吸收式寧靜型消音器

## Piping System Details:

- 1) Elbow: [dia=6.0", angle=90 deg] 6英吋90°度彎頭一只  
2) Wye Fitting: [dia=6.0", dia2=10.0"] 雙6英吋入口轉10英吋出口Y接  
3) Elbow: [dia=10.0", angle=90 deg] 10英吋90°度彎頭一只  
4) Piping Segment: [dia=10.0", len=98.0'] 10英吋管, 管長約30米

## SYSTEM ACOUSTICS

Octave Band and dBA Engine Sound Pressure Levels  
[dB] @ 3.0' & 90 deg to exhaust axis:

Frequency [Hz]	63	125	250	500	1000	2000	4000	8000	dBA
G2&G3:	122	128	124	115	111	104	94	86	<u>119</u> 引擎排氣原始噪音

## Octave Band Silencer Insertion Loss Data:

Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
JCT-12-ST S.C. LPD:	7	19	32	30	24	17	16	15
GENYC-12-ST Combo:	13	28	36	37	38	34	30	20

Overall Silencer System Noise Reduction: 43 dBA 消音器可減去噪音

## Octave Band Piping System Noise Reduction Data [dB]:

Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Elbow:	0	0	0	0	1	2	3	3
Wye Fitting:	0	0	0	0	0	0	0	0
Elbow:	0	0	0	1	2	3	3	3
Piping Segment:	24	24	24	24	24	24	24	24

Overall Piping System Noise Reduction: 24 dBA 管路可減去噪音

## Octave Band and dBA Sound Data at Receiver [dB]:

Distance to acoustical receiver: 3.0'  
Angle between receiver and axis of exhaust outlet: 90.0 degrees

Frequency [Hz]	63	125	250	500	1000	2000	4000	8000
Distance Attenuation:	0	0	0	0	0	0	0	0
Air Absorption:	0	0	0	0	0	0	0	0
Directivity:	0	0	0	0	0	0	0	0

Overall Noise Reduction between Outlet and Receiver: 0 dBA

Sound Pressure Levels at Receiver [dB]:

Frequency [Hz]	63	125	250	500	1000	2000	4000	8000	dB(A)
Receiver Level:	78	57	32	23	22	24	18	21	<u>52 排氣尾端一米處所測得噪音</u>

SYSTEM PRESSURE DATA:

Pressure Data Through Silencers

	Flow Rate [CFM]	Face Velocity [FPM]	Presssure Drop [inches WG]
JCT-12-ST S.C. LPD:	7645.0	9733.9	0.7
GENYC-12-ST Combo:	7645.0	9733.9	3.5
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Total pressure drop through all silencers:	<u>4.2 inches WG. 消音器所產生壓損</u>		

Pressure Data Through Piping Systems

	Flow Rate [CFM]	Face Velocity [FPM]	Presssure Drop [inches WG]
Elbow:	3822.0	19465.3	2.1
Wye Fitting:	3822.0	19465.3	0.2
Elbow:	7645.0	14016.9	1.1
Piping Segment:	7645.0	14016.9	10.0
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Total pressure drop through piping system:	<u>13.4 inches WG. 管路壓損</u>		

Total Back-pressure on Engine = 17.6 inches WG. 系統總壓損