



ICAO ENGINE nvPM EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Genx-1B64/P2 BYPASS RATIO (-): 9.1
UNIQUE ID NUMBER: 07P27GE232 PRESSURE RATIO π_{oo} (-): 40.7
COMBUSTOR: TAPS
ENGINE TYPE: TF RATED OUTPUT F_{oo} (kN): 298.0

REGULATORY DATA

CHARACTERISTIC VALUES:	LTO_{mass}/F_{oo} (mg/kN)	LTO_{num}/F_{oo} (particles/kN)	NVPM MASS CONCENTRATION ($\mu\text{g}/\text{m}^3$)
LTO/F_{oo} AND MAX $nvPM_{mass}$	1.3	$9.38\text{E}+13$	160
AS % OF CAEP/10 LIMIT	-	-	3.9
AS % OF CAEP/11 LIMIT (InP)	0.4	2.2	
AS % OF CAEP/11 LIMIT (NT)	0.6	3.4	

MEASURED DATA

MODE	POWER SETTING (% F_{oo})	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES*		NVPM MASS CONCENTRATION PEAK $nvPM_{mass}$ ($\mu\text{g}/\text{m}^3$)
				EI_{mass} (mg/kg)	EI_{num} (particles/kg)	
TAKE-OFF	100	0.7	2.293	0.0	$4.65\text{E}+09$	
CLIMB OUT	85	2.2	1.886	0.0	$6.30\text{E}+09$	
APPROACH	30	4.0	0.605	1.3	$7.97\text{E}+13$	
IDLE	7	26.0	0.208	0.2	$2.62\text{E}+13$	
LTO TOTAL (kg, mg, number of particles)			815	269	$2.01\text{E}+16$	-
NUMBER OF ENGINES				1	1	1
NUMBER OF TESTS				3	3	3
AVERAGE LTO/F_{oo} VALUES (mg/kN, particles/kN)				0.9	$6.74\text{E}+13$	-
MAX EI VALUES (mg/kg, particles/kg) AND MAX MASS CONC. ($\mu\text{g}/\text{m}^3$)				5.8	$2.45\text{E}+14$	124

* Emissions Indices are corrected for thermophoretic loss and fuel hydrogen content

DATA FOR EMISSIONS INVENTORIES (ESTIMATIONS FOR ENGINE EXIT PLANE VALUES)

MODE	POWER SETTING (% F_{oo})	CORRECTED EMISSIONS INDICES	
		EI_{mass_SL} (mg/kg)	EI_{num_SL} (particles/kg)
TAKE-OFF	100	0.0	$7.00\text{E}+09$
CLIMB OUT	85	0.0	$9.56\text{E}+09$
APPROACH	30	2.2	$5.40\text{E}+14$
IDLE	7	0.5	$2.44\text{E}+14$

AMBIENT CONDITIONS

	From	To	FUEL	
BAROMETER (kPa)	97.9	98.5	HEAT OF COMBUSTION (MJ/kg)	43.22
TEMPERATURE (K)	293.4	300.5	HYDROGEN CONTENT (%mass)	13.71
HUMIDITY (kg water/kg dry air)	0.0070	0.0122	AROMATICS CONTENT (%vol)	16.3
			NAPHTHALENE CONTENT (%vol)	0.27
			SULPHUR CONTENT (ppm by mass)	6

MANUFACTURER: General Electric Company
TEST ORGANIZATION: GE Aerospace
TEST LOCATION: PTO, Ohio, USA
TEST DATES: 24/05/2023-31/05/2023

REMARKS

1. Engine S/N 958-859/1
2. Ref. GE Report R2022AE169/Rev.0
3. The maximum EI_{mass} occurs between 30% and 85% F_{oo}
4. The maximum EI_{num} occurs between 30% and 85% F_{oo}