



ICAO ENGINE nvPM EMISSIONS DATA SHEET

SUBSONIC ENGINES

ENGINE IDENTIFICATION: Passport20-19BB1A BYPASS RATIO (-): 5.9
UNIQUE ID NUMBER: 07P27GE241 PRESSURE RATIO π_{oo} (-): 41.3
COMBUSTOR: SAC
ENGINE TYPE: MTF RATED OUTPUT F_{oo} (kN): 84.2

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 $nvPM_{mass}$	38.9	$3.08\text{E}+14$	113
AS % OF CAEP/10 LIMIT	-	-	1.6
AS % OF CAEP/11 LIMIT (InP)	1.4	1.8	
AS % OF CAEP/11 LIMIT (NT)	5.8	3.8	

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	0.797	23.7	$8.01\text{E}+13$	
CLIMB OUT	85	2.2	0.657	21.8	$1.04\text{E}+14$	
APPROACH	30	4.0	0.221	2.0	$9.25\text{E}+13$	
IDLE	7	26.0	0.078	0.9	$5.16\text{E}+13$	
LTO TOTAL (kg, mg, number of particles)			296	2899	$2.30\text{E}+16$	-
NUMBER OF ENGINES				3	3	3
NUMBER OF TESTS				9	9	9
AVERAGE LTO/F_{oo} VALUES (mg/kN, particles/kN)				34.4	$2.73\text{E}+14$	-
MAX EI VALUES (mg/kg, particles/kg) AND MAX MASS CONC. ($\mu\text{g}/\text{m}^3$)				24.0	$1.40\text{E}+14$	102

* 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	27.3	$1.82\text{E}+14$
CLIMB OUT	85	25.5	$2.58\text{E}+14$
APPROACH	30	3.1	$5.48\text{E}+14$
IDLE	7	1.5	$3.27\text{E}+14$

AMBIENT CONDITIONS

	From	To	FUEL	
BAROMETER (kPa)	97.5	99.5	HEAT OF COMBUSTION (MJ/kg)	43.22
TEMPERATURE (K)	277.7	287.1	HYDROGEN CONTENT (%mass)	13.51
HUMIDITY (kg water/kg dry air)	0.0028	0.0043	AROMATICS CONTENT (%vol)	17.6
			NAPHTHALENE CONTENT (%vol)	0.33
			SULPHUR CONTENT (ppm by mass)	5

MANUFACTURER: General Electric Company
TEST ORGANIZATION: GE Aerospace
TEST LOCATION: PTO, Ohio, USA
TEST DATES: 08/12/2024-14/12/2024

REMARKS

- Engine S/N 904-385/01; Ref. GE Report R2022AE139/Rev.2
- Engine S/N 904-439/01; Ref. GE Report R2023AE174/Rev.0
- Engine S/N 904-292/03; Ref. GE Report R2024AE174/Rev.0
- Atmospheric Conditions, Fuel and Test Dates are specified for Engine S/N 904-292/03
- The maximum EI_{num} occurs between 30% and 85% F_{oo}