



## ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: GE90-110B1 BYPASS RATIO: 7.3  
UNIQUE ID NUMBER: 01P21GE216 PRESSURE RATIO ( $\pi_{o/o}$ ): 40.4  
COMBUSTOR: DAC  
ENGINE TYPE: TF RATED THRUST ( $F_{o/o}$ ) (kN): 492.6

REGULATORY DATA \*\* DATA SUPERSEDED \*\* SEE FOLLOWING UID FOR REVISED DATA: 07P27GE239

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>o/o</sub> (g/kN) or SN	5.4	44.6	67.0	3.5
AS % OF ORIGINAL LIMIT	27.5	37.8	55.5	22.7
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			69.4	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			76.4	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			84.1	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			94.6	

For non-volatile particulate matter (nvPM) emissions, please refer to the ICAO Engine nvPM Emissions Data Sheet.

## DATA STATUS

- PRE-REGULATION  
x CERTIFICATION  
- REVISED (SEE REMARKS)

## TEST ENGINE STATUS

x NEWLY MANUFACTURED ENGINES  
- DEDICATED ENGINES TO PRODUCTION STANDARD  
- OTHER (SEE REMARKS)

## EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
(ANNEX 16 VOLUME II)

## CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
- OUT OF PRODUCTION (DATE: - )  
- OUT OF SERVICE (DATE: - )

## MEASURED DATA

MODE	POWER SETTING (%F <sub>o/o</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
TAKE-OFF	100	0.7	4.226	0.03	0.13	45.25	3.0
CLIMB OUT	85	2.2	3.375	0.02	0.14	34.39	2.2
APPROACH	30	4.0	1.029	0.05	2.50	15.53	1.6
IDLE	7	26.0	0.334	3.87	35.72	5.42	1.4
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1391	2043	19317	30010	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				6	6	6	6
AVERAGE D <sub>p</sub> /F <sub>o/o</sub> (g/kN) or AVERAGE SN (MAX)				4.1	39.2	60.9	3.0
SIGMA (D <sub>p</sub> /F <sub>o/o</sub> in g/kN, or SN)				0.3	1.4	1.1	1.3
RANGE (D <sub>p</sub> /F <sub>o/o</sub> in g/kN, or SN)				3.78-4.46	37.37-40.7	59.06-62.32	0.68-3.8

## ACCESSORY LOADS

POWER EXTRACTION 0 (kW)  
STAGE BLEED 0 (% CORE FLOW)

AT All POWER SETTINGS  
AT All POWER SETTINGS

## ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.1-98.3
TEMPERATURE (K)	290.7-298.7
ABS HUMIDITY (kg/kg)	0.0051-0.0094

## FUEL

SPEC	Jet A
H/C	1.9-1.96
AROM (%)	11.9-16.4

MANUFACTURER: General Electric Company  
TEST ORGANIZATION: General Electric Company  
TEST LOCATION: PTO, Ohio  
TEST DATES: 23/11/2003-26/05/2016

NO<sub>x</sub> REGULATION PARAGRAPH

	2.3.2 c) (CAEP/4)
	2.3.2 d) (CAEP/6)
x	2.3.2 e) (CAEP/8)

## REMARKS

- Engine S/N 906-107/01 and ESN 901-007/01, GE Report R2019EA459
- Engine S/N 906-107/01 smoke numbers corrected for fuel aromatics volume, GE Report R2003AE462
- Smoke Number for each LTO mode is average of max SN for test points around that power setting
- Average SN (MAX) is the average of the maximum smoke number point from each run.
- Certification in accordance with Part III, Chapter 2, of Amendment 9 of ICAO Annex 16 Vol. II.

Compliance with Fuel Venting requirements:

x ('x' if complies, 'PR' if pre-regulation, '- ' if information is not available)