



# ICAO ENGINE EXHAUST EMISSIONS DATA BANK

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: GE90-115B BYPASS RATIO: 7.1  
UNIQUE ID NUMBER: 21GE184 PRESSURE RATIO ( $\pi_{00}$ ): 42.9  
ENGINE TYPE: TF RATED OUTPUT ( $F_{00}$ ) (kN): 513.9

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NOx	SMOKE NUMBER
$D_p/F_{00}$ (g/kN) or SN	5.0	42.2	73.0	4.0
AS % OF ORIGINAL LIMIT	25.4 %	35.8 %	58.0 %	26.3 %
AS % OF CAEP/2 LIMIT (NOx)			72.5 %	
AS % OF CAEP/4 LIMIT (NOx)			78.6 %	
AS % OF CAEP/6 LIMIT (NOx)			86.0 %	
AS % OF CAEP/8 LIMIT (NOx)			96.1 %	

### 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  
- OUT OF SERVICE

### MEASURED DATA

MODE	POWER SETTING (% $F_{00}$ )	TIME minutes	FUEL FLOW kg/s	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NOx	
TAKE-OFF	100	0.7	4.600	0.03	0.125	51.07	3.38
CLIMB OUT	85	2.2	3.566	0.02	0.14	36.44	2.23
APPROACH	30	4.0	1.073	0.05	2.16	16.17	1.6
IDLE	7	26.0	0.341	3.64	34.58	5.51	1.34
LTO TOTAL FUEL (kg) or EMISSIONS (g)			1453	1964	19039	34114	-
NUMBER OF ENGINES				2	2	2	2
NUMBER OF TESTS				6	6	6	6
AVERAGE $D_p/F_{00}$ (g/kN) or AVERAGE SN (MAX)				3.82	37.06	66.39	3.38
SIGMA ( $D_p/F_{00}$ in g/kN, or SN)				0.25	1.31	1.09	1.55
RANGE ( $D_p/F_{00}$ in g/kN, or SN)				3.51 - 4.1	35.36 - 38.56	54.60 - 67.83	0.71 - 4.54

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT All POWER SETTINGS  
STAGE BLEED 0 % CORE FLOW AT All POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	97.06 - 98.32
TEMPERATURE (K)	290.7 - 298.7
ABS HUMIDITY (kg/kg)	0.0051 - 0.0094

### FUEL

SPEC	Jet A
H/C	1.90 - 1.96
AROM (%)	11.9 - 16.4

MANUFACTURER: GE Aircraft Engines  
TEST ORGANIZATION: GE Aviation  
TEST LOCATION: PTO, Ohio  
TEST DATES: FROM 23 May 03 TO 26 May 16

### 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.

If REVISED, this data supersedes databank UID  
Compliance with fuel venting requirements: 0 ('x' if complies, PR if pre-regulation)