



mitsubishi S6R2-PTAA

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[Technical data](#)

[Elastic data](#)

[Mechanical noise data](#)

[Fuel consumption](#)

Power House AB

Talattagatan 10, SE-426 76 Västra Frölunda, Sweden

Tel: +46 31 762 56 00, info@powerhouse.se

www.powerhouse.se



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0217-0003E Rev.2 (1/4)

DATE

February, 2014

Specification Sheets of S6R2-PTAA Engine

Specification Sheets of S6R2-PTAA Engine are enclosed herein.

Revision	First Edition : Mar., 2013((T13-0353-E Feb. '00)	Engine Engineering Department High Speed Engine Designing Section		
	Rev.1 : October,2013			
	Rev.2 : February,2014	Approved by	Checked by	Drawn by



GENERAL ENGINE DATA

Type	4-Cycle, Water Cooled	
Aspiration	Turbo-Charged, Air to Air Cooler	
Cylinder Arrangement	Inline	
No. of Cylinders	6	
Bore mm(in.)	170	(6.69)
Stroke mm(in.)	220	(8.66)
Displacement liter(in ³)	29.96	(1828)
Compression Ratio	14.0:1	
Dry Weight - Engine only - kg(lb)	2870	(6328)
- Radiator & Piping - kg(lb)	471	(1039)
Wet Weight - Engine only - kg(lb)	3015	(6648)
- Radiator & Piping - kg(lb)	557	(1228)

PERFORMANCE DATA

Steady State Speed Stability Band at any Constant Load		
Hydraulic (std.) or Electric Governor - %	±0.25 or better	
Maximum Overspeed Capacity - rpm	1750	
Moment of inertia of Rotating Components - kgf·m ² (lbf·ft ²)	41.74	(991)
(Includes Std. Flywheel)		
Cyclic Speed Variation with Flywheel at 1500rpm	1/95	

ENGINE MOUNTING

Maximum Bending Moment at Rear Face of Flywheel Housing - kgf·m(lbf·ft)	200	(1447)
-------------------------------------------------------------------------------	-----	--------

AIR INLET SYSTEM

Maximum Intake Air Restriction (Includes piping)		
With Clean Filter Element - mm H ₂ O (in.H ₂ O)	400	(15.7)
With Dirty Filter Element - mm H ₂ O (in.H ₂ O)	635	(25.0)

EXHAUST SYSTEM

Maximum Allowable Back Pressure - mm H ₂ O (in.H ₂ O)	600	(23.6)
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LUBRICATION SYSTEM

Oil Pressure at Idle - kgf/cm ² (psi)	2~3	(29~43)
at Rate Speed - kgf/cm ² (psi)	5~6.5	(71~93)
Maximum Oil Temperature - °C(°F)	110	(230)
Oil Capacity of Standard Pan High - liter (U.S.gal)	80	(21.1)
Low - liter (U.S.gal)	50	(13.2)
Total System Capacity (Includes Oil Filter) - liter (U.S.gal)	100	(26.4)
Maximum Angle of Installation (Std. Pan) Front Down	11.5°	
(Engine Only) Front Up	10°	
Side to Side	22.5°	

COOLING SYSTEM

Coolant Capacity - Engine only - liter (U.S.gal)	55	(14.5)
- Radiator & Piping - liter (U.S.gal)	86	(22.7)
Maximum External Friction Head at Engine Outlet - kgf/cm ² (psi)	0.35	(5.0)
Maximum Static Head of Coolant above Crankshaft Center - m(ft)	10	(32.8)
Maximum Outlet Pressure of Engine Water Pump - kgf/cm ² (psi)	2	(28.6)
Standard Thermostat (modulating) Range - °C(°F)	71~85	(160~185)
Maximum Coolant Temperature at Engine Outlet - °C(°F)	98	(208)
Minimum Coolant Expansion Space - % of System Capacity	10	
Maximum Cooling Air Temperature at Air to Air Cooler Inlet, TAA type - °C(°F)	40	(104)
Maximum Air Restriction on Discharge Side of Radiator and Fan - mm H ₂ O (in.H ₂ O)	10	(0.4)

The specifications are subject to change without notice.

APPLICATION : GENERATOR

FUEL SYSTEM

Fuel Injector	Mitsubishi PS6 Type × 1
Maximum Suction Head of Feed Pump - mm Hg (in. Hg)	75 (3.0)
Maximum Static Head of Return & Leak Pipe - mm Hg (in.Hg)	150 (5.9)

STARTING SYSTEM

Battery Charging Alternator - V-Ah	24-30
Starting Motor Capacity - V -kW	24-7.5
Maximum Allowable Resistance of Cranking Circuit - m Ω	2.5
Recommended Minimum Battery Capacity	
At 5°C(41°F) and above - Ah	200
Below 5°C(41°F) through - 5°C(23°F)	500

The specifications are subject to change without notice.

APPLICATION : GENERATOR

Pub. No. T0217-0003E Rev.2 3/4

ENGINE RATING

All data represent net performance with standard accessories such as air cleaner, inlet /exhaust manifolds, fuel oil system, L.O. pump, etc. under the condition of 100kPa(29.6inHg) barometric pressure, 77°F(25°C) ambient temperature and 30% relative humidity.

ITEM	UNIT	STAND-BY POWER			PRIME POWER		
		50Hz			50Hz		
Engine Speed	rpm	1500			1500		
No. of Cylinders		6					
Bore	mm (in.)	170 (6.69)					
Stroke	mm (in.)	220 (8.66)					
Displacement	liter (in. ³)	29.96 (1828)					
Brake Horse power without Fan	HP (kW)	978 (730)			892 (665)		
Brake Mean Effective Pressure without Fan	kgf/cm ² (psi)	19.9 (283)			18.1 (257)		
Mean Piston Speed	m/s (ft/min)	11.0 (2165)			11.0 (2165)		
Maximum Regenerative Power Absorption Capacity without Fan	HP (kW)	86 (64)			86 (64)		
Intake Air flow	m ³ /min (CFM)	67 (2366)			61 (2154)		
Exhaust Gas Flow	m ³ /min (CFM)	178 (6285)			163 (5756)		
Coolant Flow	liter/min (U.S. GPM)	670 (177)			670 (177)		
Cooling Air Flow (Std. Fan)	m ³ /min (CFM)	726 (25635)			726 (25635)		
Fan Loss Horse Power (Std. Fan)	HP (kW)	27 (20)			27 (20)		
Radiated Heat to Ambient	kcal/hr (BTU/min)	50756 (3357)			46293 (3062)		
Heat Rejection to Coolant	kcal/hr (BTU/min)	219942 (14547)			200602 (13268)		
Heat Rejection to Air to Air Cooler	kcal/hr (BTU/min)	203023 (13428)			185171 (12247)		
Heat Rejection to Exhaust	kcal/hr (BTU/min)	590818 (39076)			538865 (35640)		
Noise Level (1 m height & distance) (excludes, Intake,Exhaust & Fan)	dB(A)	TBD			TBD		

The specifications are subject to change without notice.

APPLICATION : GENERATOR

Pub. No. T0217-0003E Rev.2 4/4



**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0307-0006E (1/2)

DATE

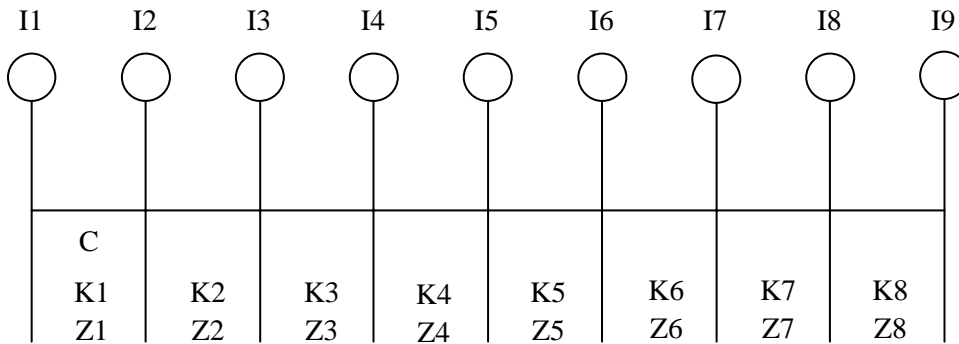
July, 2006

Elastic data of S6R2 Engine

Elastic data of S6R2 Engine are enclosed herein.

Revision	First Edition : July, 2006 (Refer to ELASTIC-S6R2-PTA Oct.,2003, S6R2.0)	Engine Engineering Department Large Engine Design Section		
		Approved by	Checked by	Drawn by



S6R2-PTA ELASTIC DATA

	Moment of inertia J kg.m ²	Damping coefficient Nm/rad/s	Spring const. x10 ⁷ Nm/rad	Tensile strength N/mm ²	Section modulus cm ³
I1	DAMPER	1.11	C=524.7	K1=0	Z1 =0.0
I2	PULLEY	0.952	—	K2=1.196	Z2 =373.7
I3	No.1 CRANK	0.810	—	K3=0.763	Z3 =373.7
I4	No.2 CRANK	0.480	—	K4=0.763	Z4 =373.7
I5	No.3 CRANK	0.800	—	K5=0.763	Z5 =373.7
I6	No.4 CRANK	0.800	—	K6=0.763	Z6 =373.7
I7	No.5 CRANK	0.480	—	K7=0.763	Z7 =373.7
I8	No.6 CRANK	0.810	—	K8=1.216	Z8 =373.7
I9	FLYWHEEL 18in	5.59	—		

Hysteresis constant:177 No. of Cylinder: 6 Bore:170mm Stroke:220mm

Length of Con-Rod: 400mm Weight of Reciprocating Parts:12.87 kg

Firing order:1-5-3-6-2-4

Firing interval:0-120-240-360-480-600

APPLICATION : LAND USE

The data is subject to change without notice.





**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T0404-0006E (1/2)

DATE

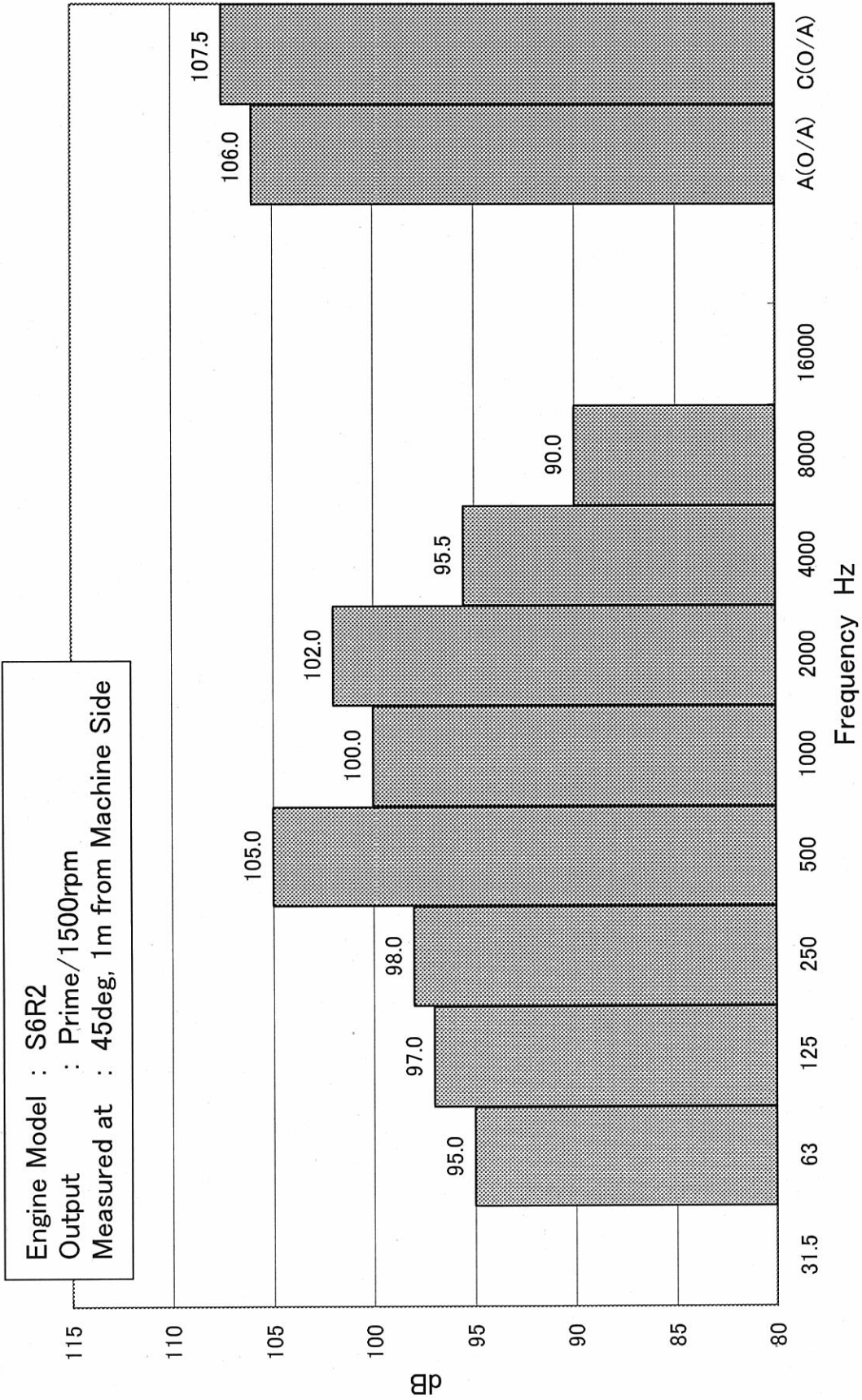
Sep., 2006

Mechanical Noize Data of S6R2

Mechanical Noize Data of S6R2 is enclosed herein.

Revision	First Edition : Sep.,2006	Engine Engineering Department Large Engine Design Section		
		Approved by	Checked by	Drawn by

Mechanical Noise Analysis





**MITSUBISHI DIESEL ENGINE
TECHNICAL INFORMATION**

ITEM NO.

T33-0100-E

DATE

Jun. 1999

FUEL CONSUMPTION

(SB, SA, SH, SR SERIES ENGINES FOR GENERATOR DRIVE)

ENGINE MODEL	ENGINE rpm	REMARKS
S6B-PTA, PTK	1500	W/Fan, W/O Fan
	1800	
S6B3-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S6A3-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S12A2-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S12H-PTA	1500	W/Fan, W/O Fan
	1800	
S6R-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S6R2-PTA, PTK	1000	W/Fan, W/O Fan
	1200	
S12R-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S12R-PTA2, PTK2	1500	W/Fan, W/O Fan
	1800	
S16R-PTA, PTK	1200	W/Fan, W/O Fan
	1500	
S16R-PTA2, PTK2	1500	W/Fan, W/O Fan
	1800	
S6A3-PTAA	1500	W/Fan
	1800	
S6R2-PTAA	1500	W/Fan
S12R-PTAA2	1500	W/Fan
	1800	
S16R-PTAA2	1500	W/Fan
	1800	

First Edition : Jun. 1999

Engine Engineering Department
Large Engine Design Section

Revision

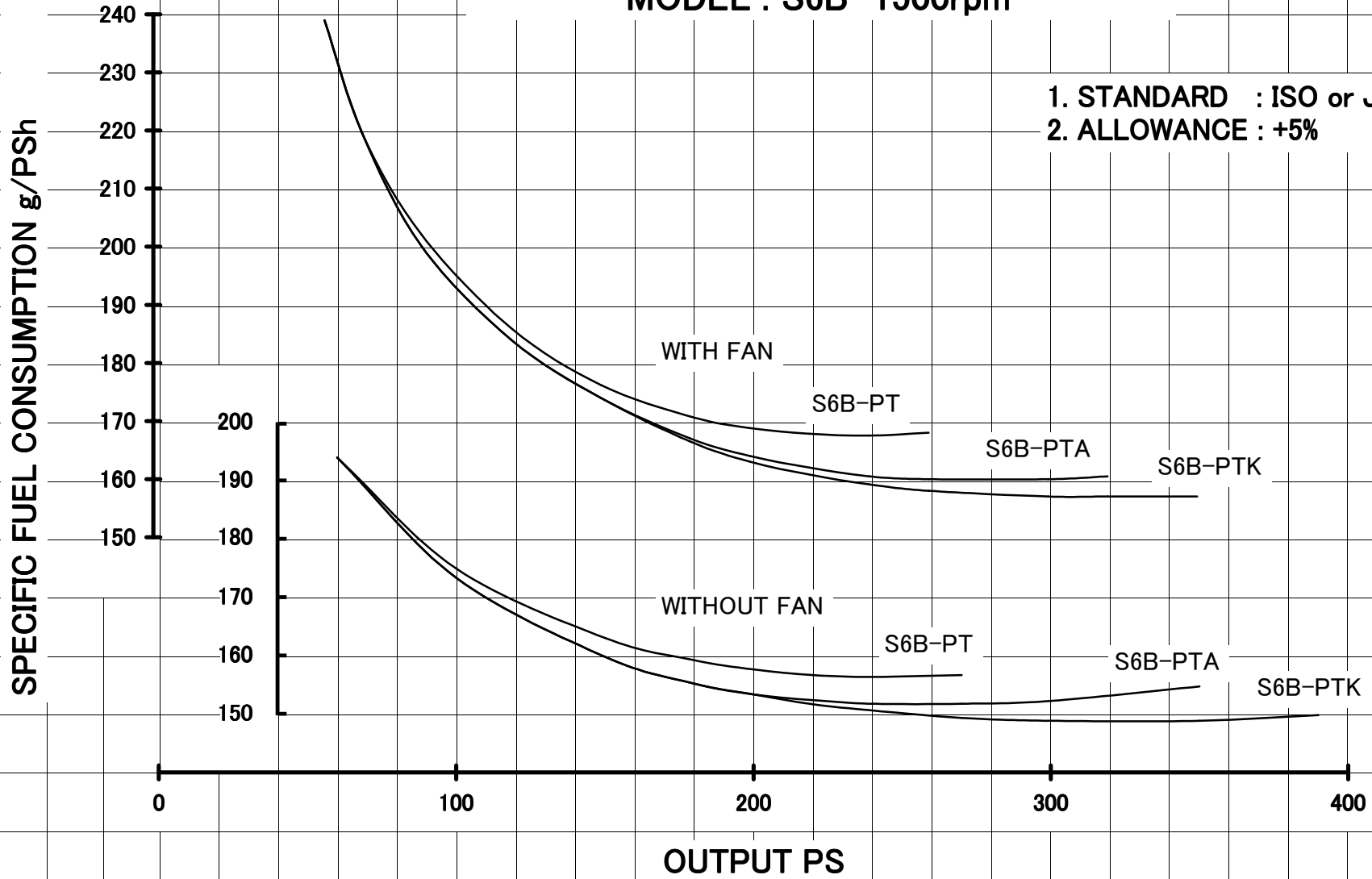
Approved by

Checked by

Drawn by

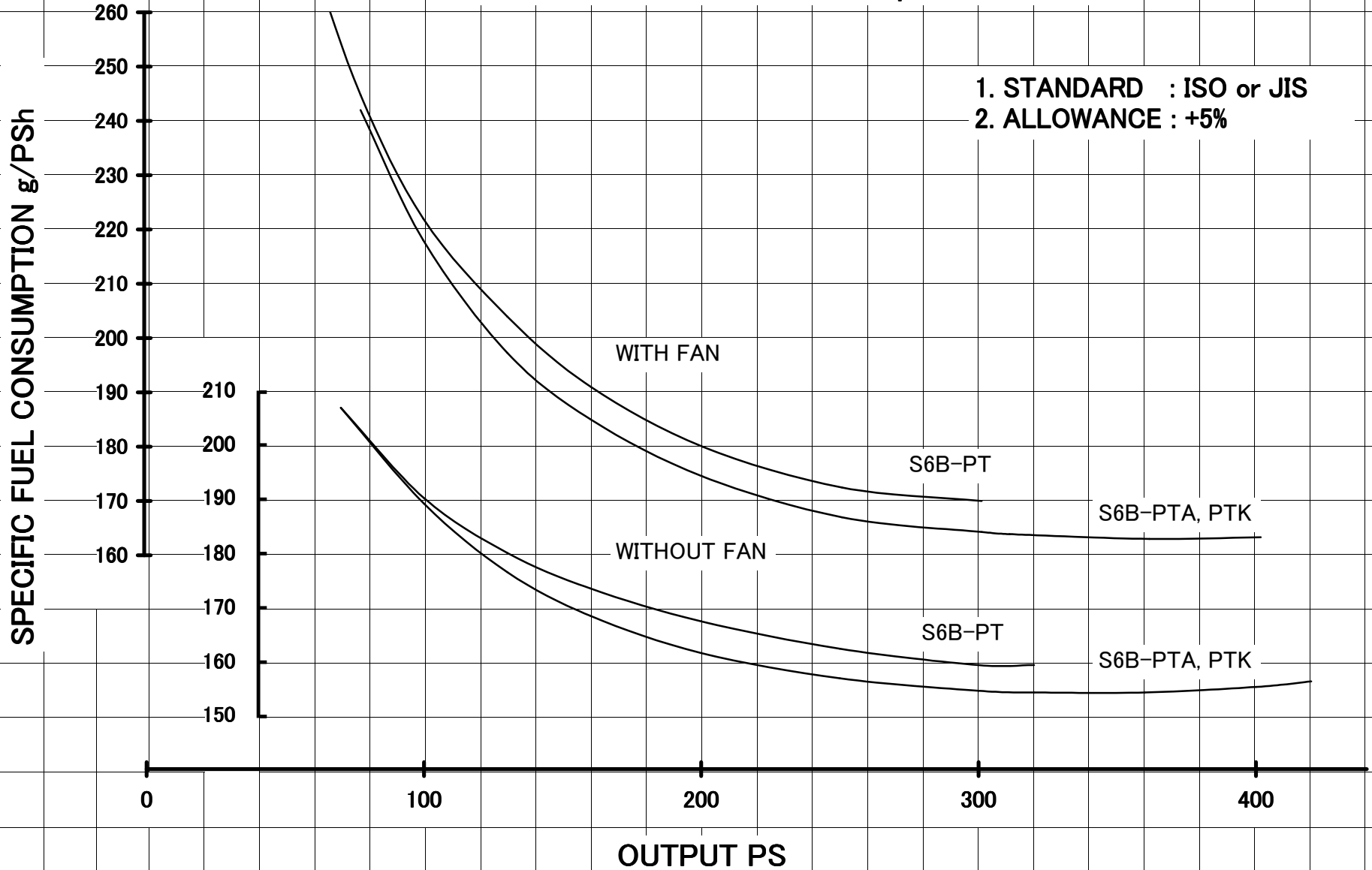
SPECIFIC FUEL CONSUMPTION MODEL : S6B 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

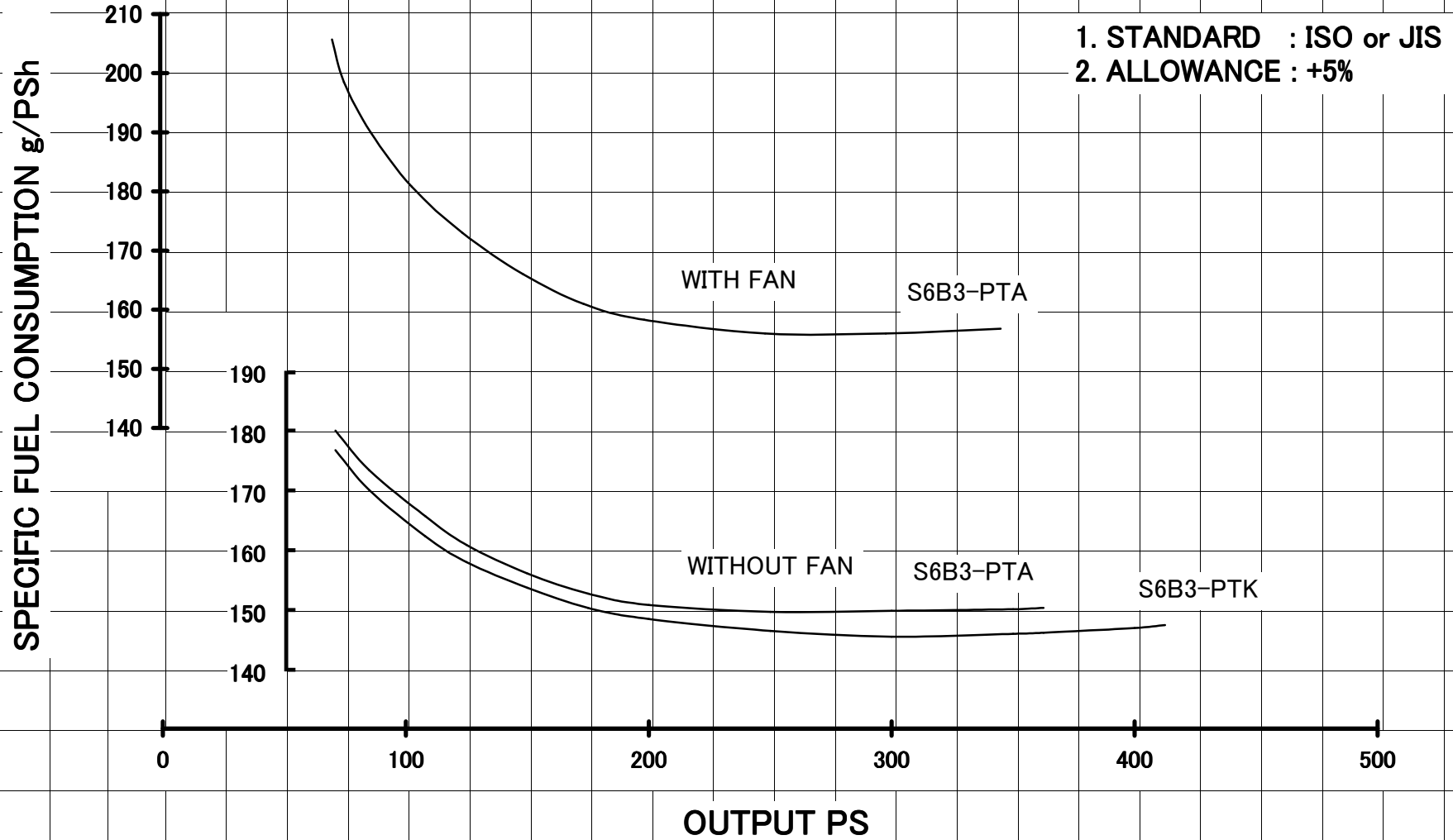


SPECIFIC FUEL CONSUMPTION MODEL : S6B 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S6B3 1200rpm

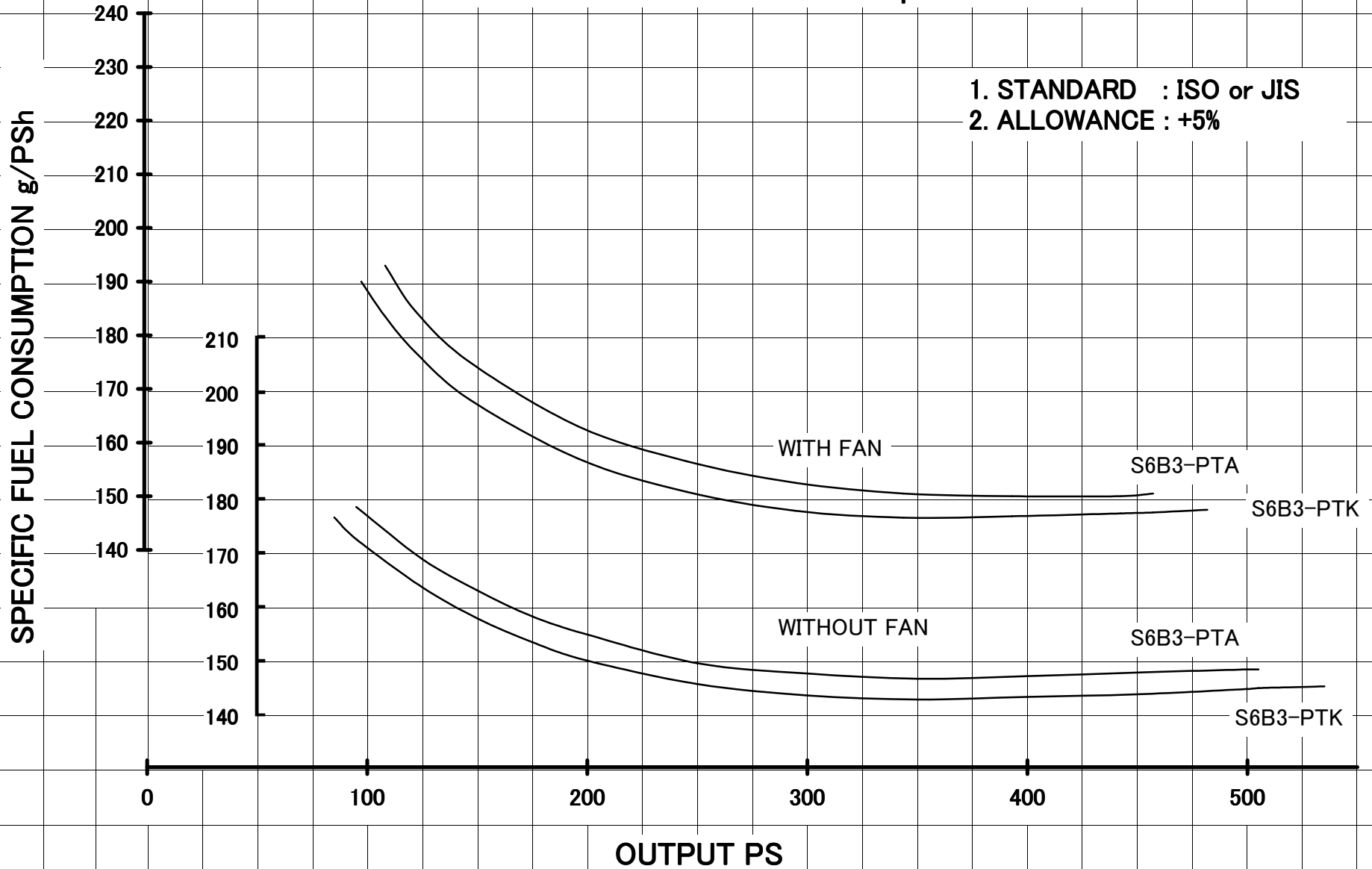


SPECIFIC FUEL CONSUMPTION

MODEL : S6B3 1500rpm

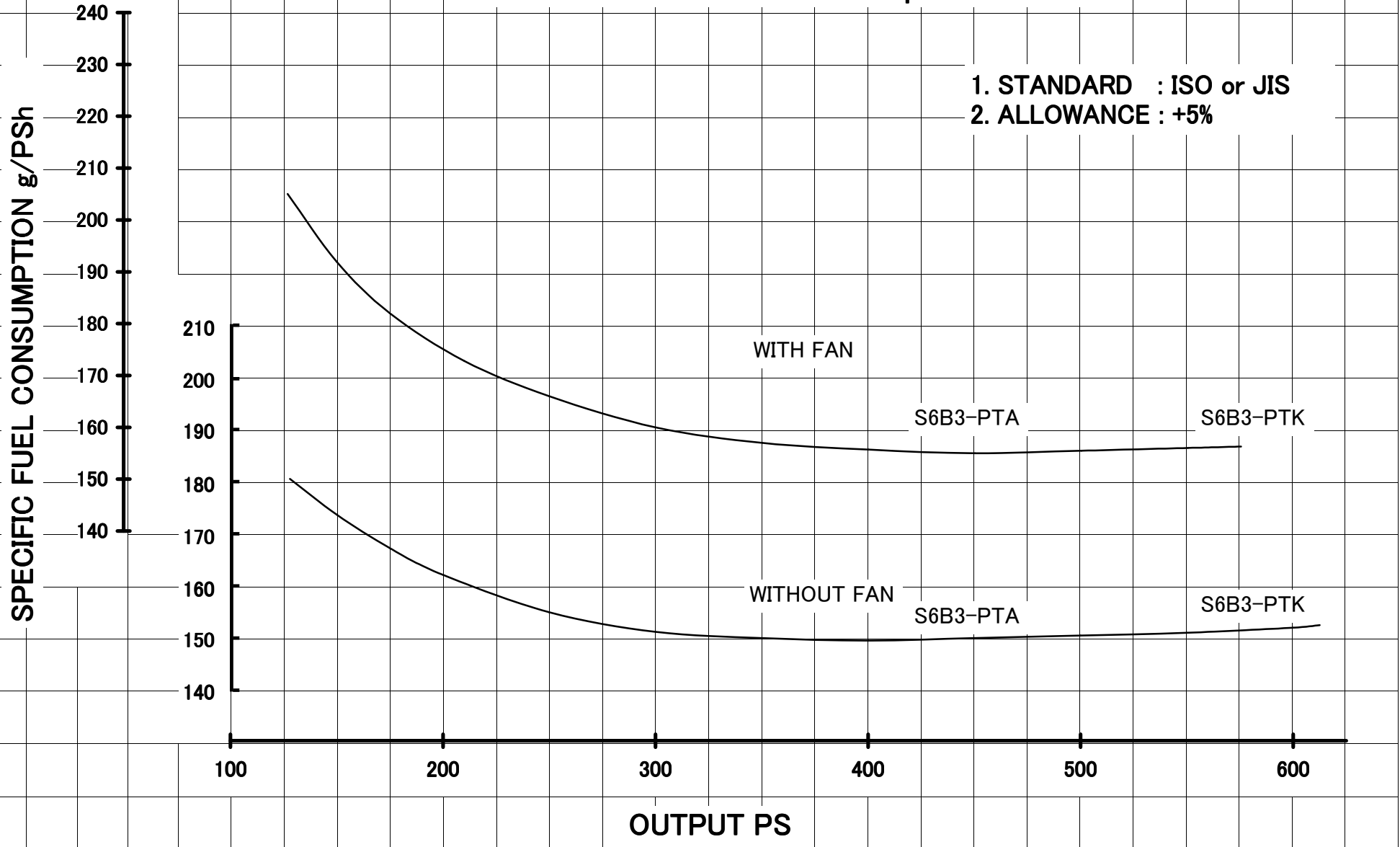
1. STANDARD : ISO or JIS

2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S6B3 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S6A3 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

210
200
190
180
170
160
150
140

190
180
170
160
150
140

WITH FAN

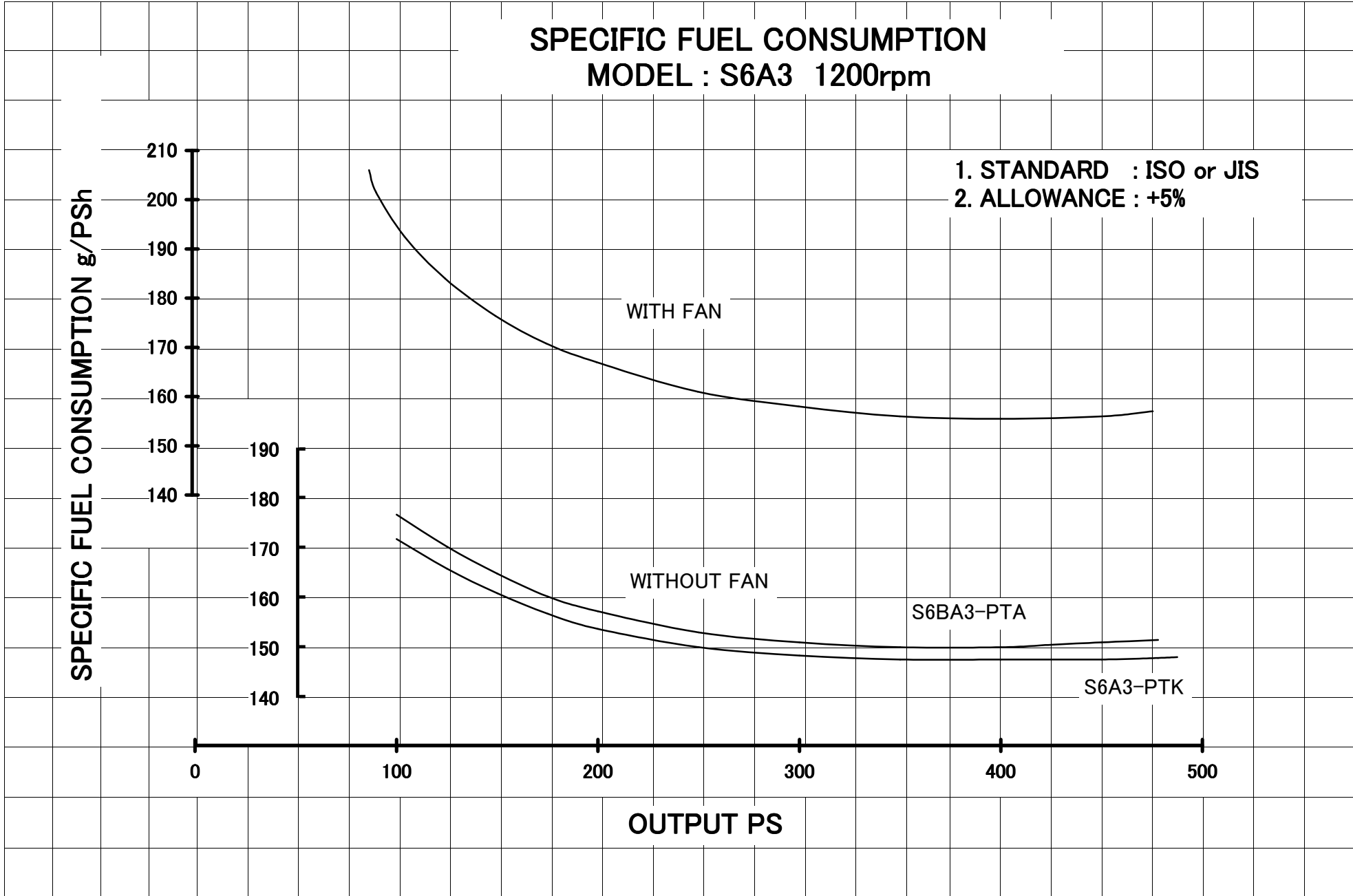
WITHOUT FAN

S6BA3-PTA

S6A3-PTK

0 100 200 300 400 500

OUTPUT PS



SPECIFIC FUEL CONSUMPTION MODEL : S6A3 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

220
210
200
190
180
170
160
150
140

210
200
190
180
170
160
150
140

WITH FAN

S6A3-PTA

S6A3-PTK

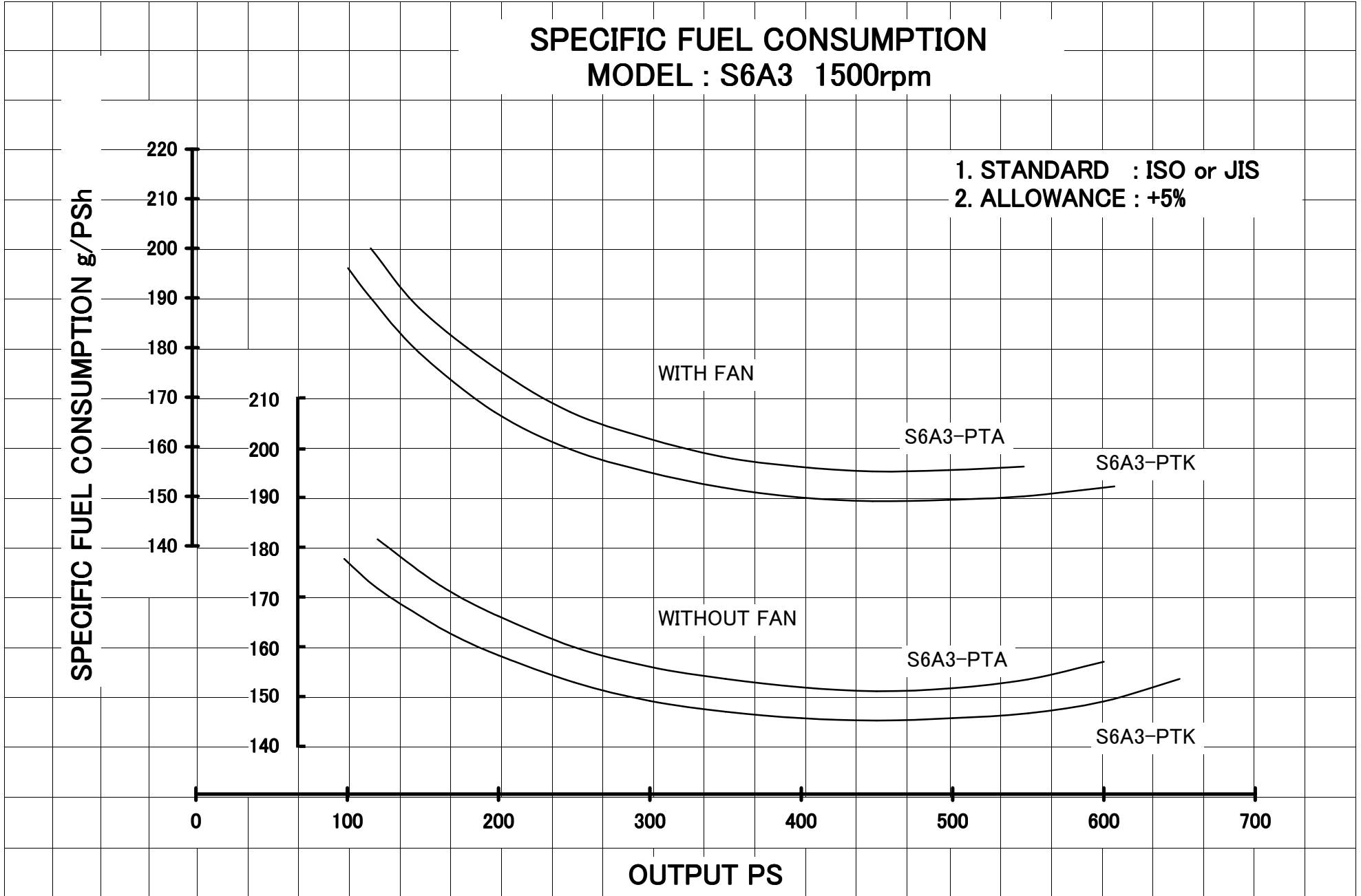
WITHOUT FAN

S6A3-PTA

S6A3-PTK

0 100 200 300 400 500 600 700

OUTPUT PS



SPECIFIC FUEL CONSUMPTION

MODEL : S6A3 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

230
220
210
200
190
180
170
160
150

210
200
190
180
170
160
150

WITH FAN

S6A3-PTA

S6A3-PTK

WITHOUT FAN

S6A3-PTA

S6A3-PTK

0

100

200

300

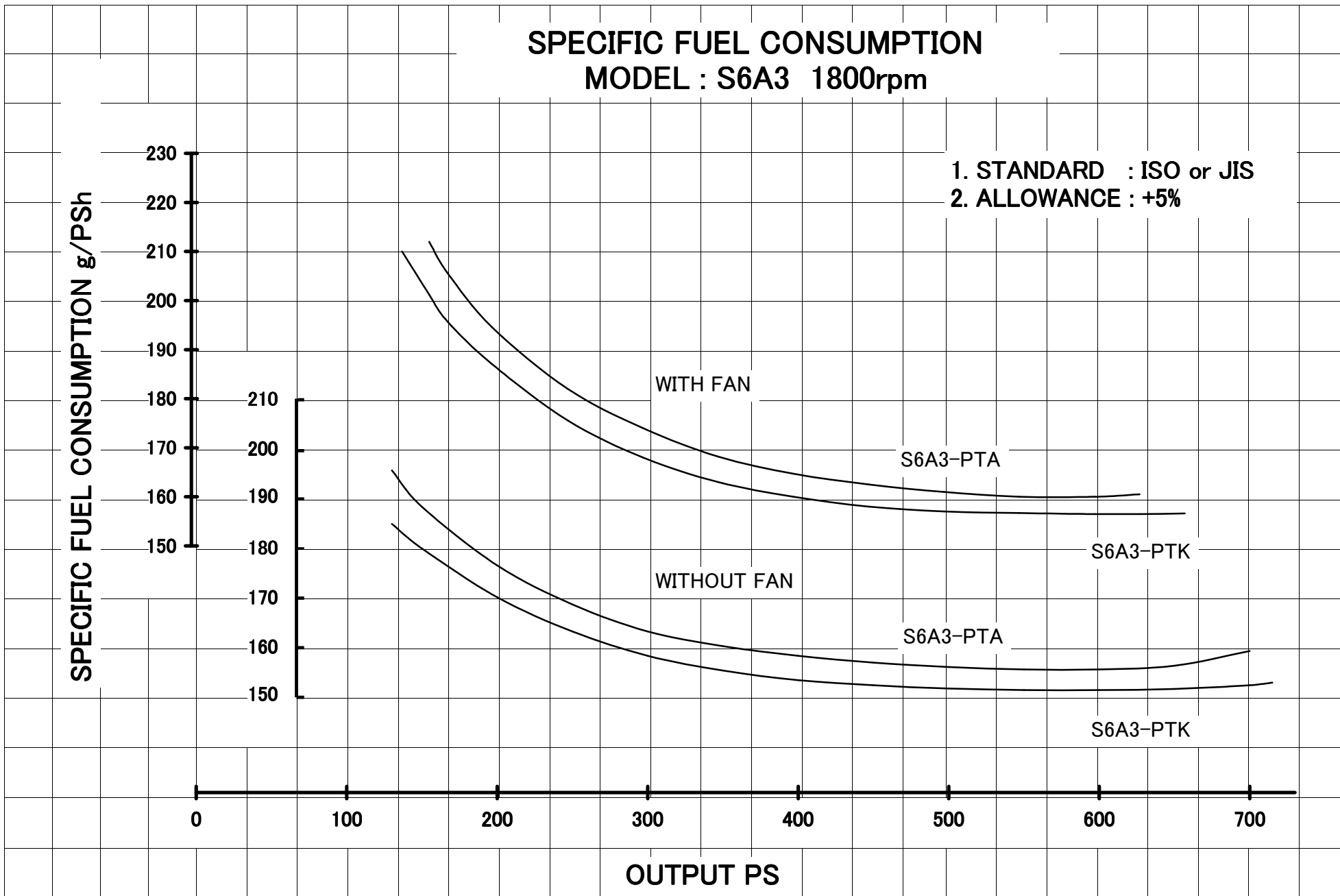
400

500

600

700

OUTPUT PS



SPECIFIC FUEL CONSUMPTION MODEL : S12A2 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

190
180
170
160
150

180
170
160
150

0

200

400

600

800

OUTPUT PS

WITH FAN

WITHOUT FAN

S12A2-PT

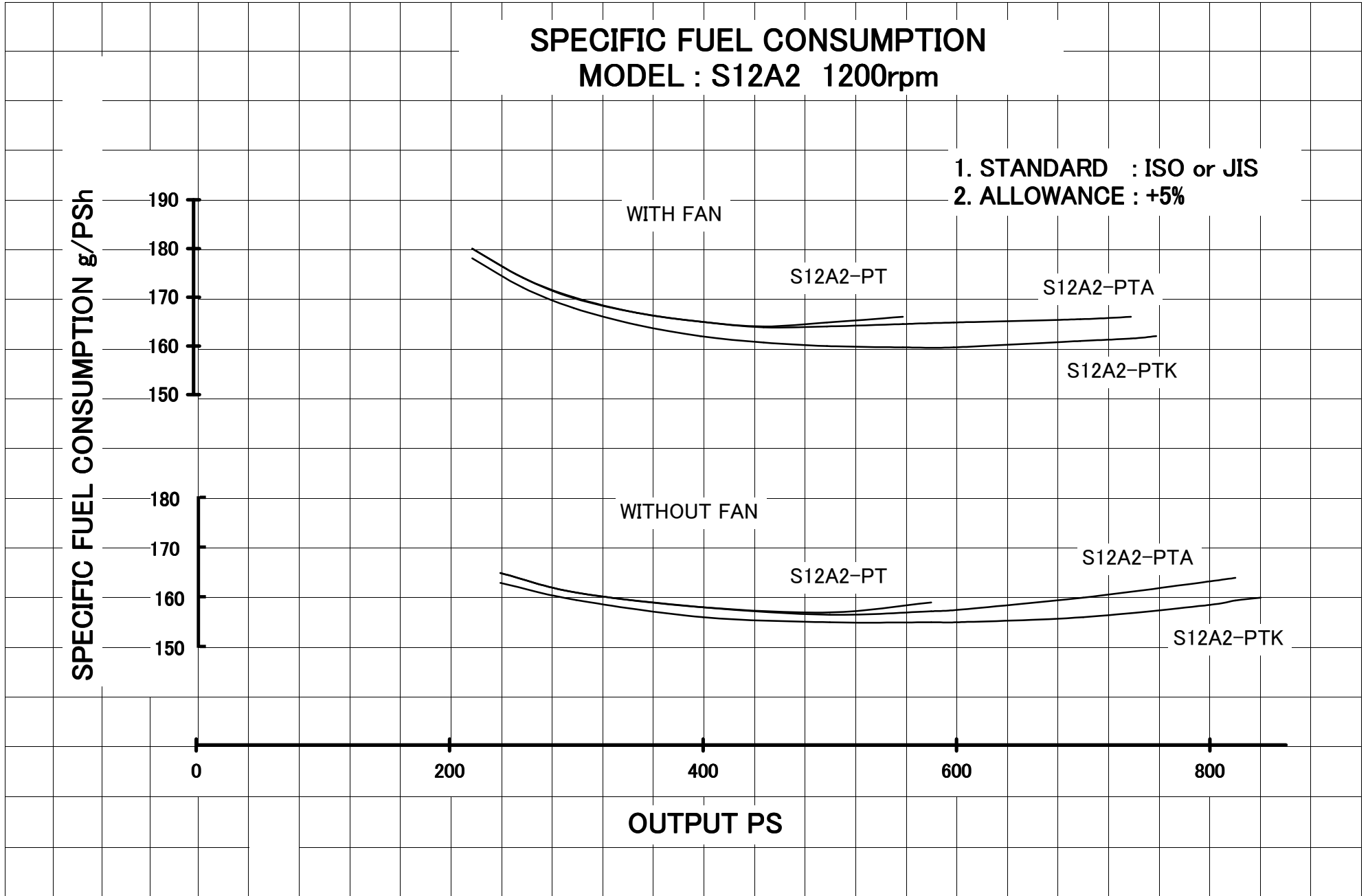
S12A2-PT

S12A2-PTA

S12A2-PTK

S12A2-PTA

S12A2-PTK



SPECIFIC FUEL CONSUMPTION MODEL : S12A2 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

190
180
170
160
150

190
180
170
160
150
140

0

200

400

600

800

1000

OUTPUT PS

WITH FAN

S12A2-PT

S12A2-PTA

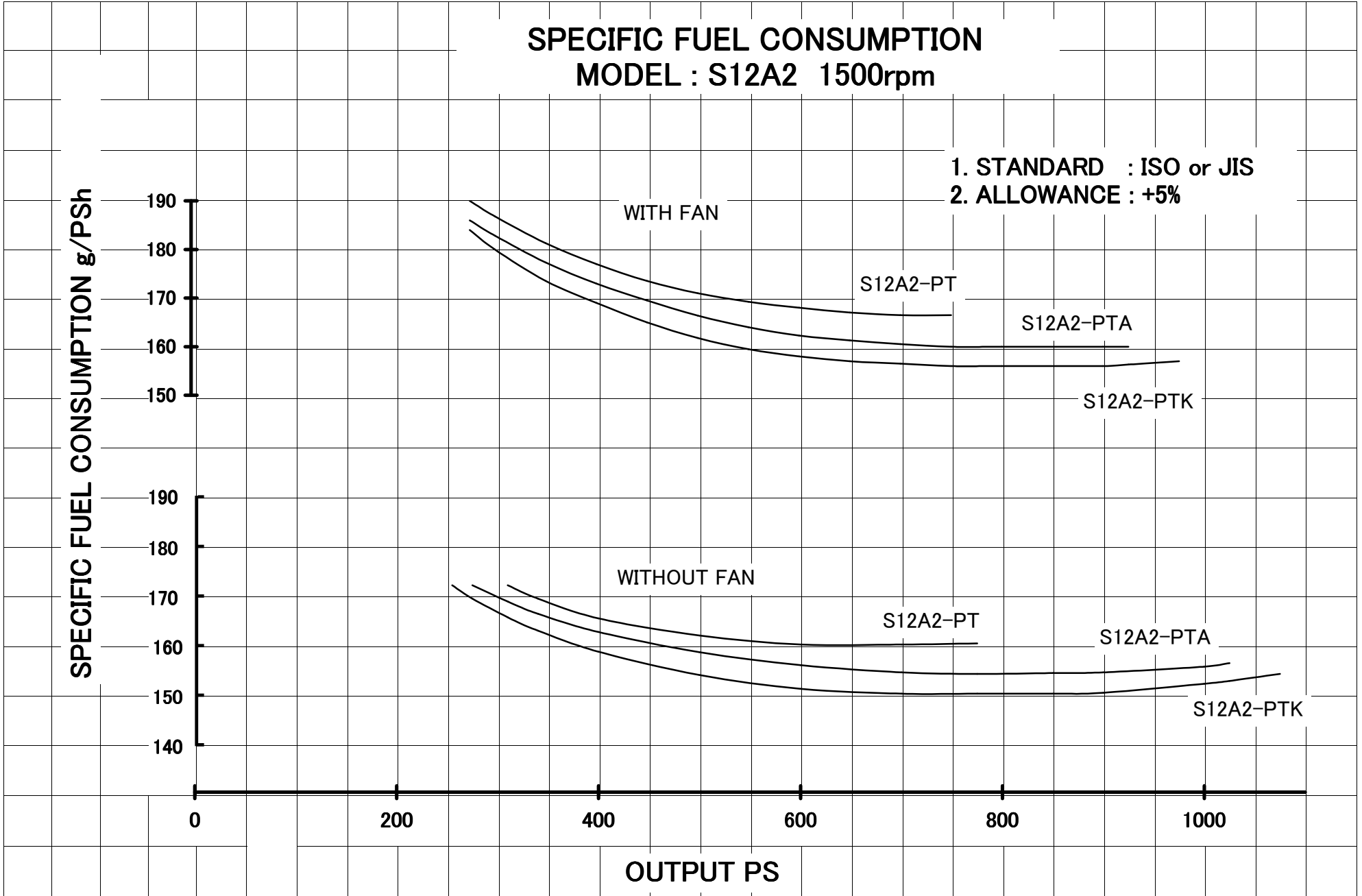
S12A2-PTK

WITHOUT FAN

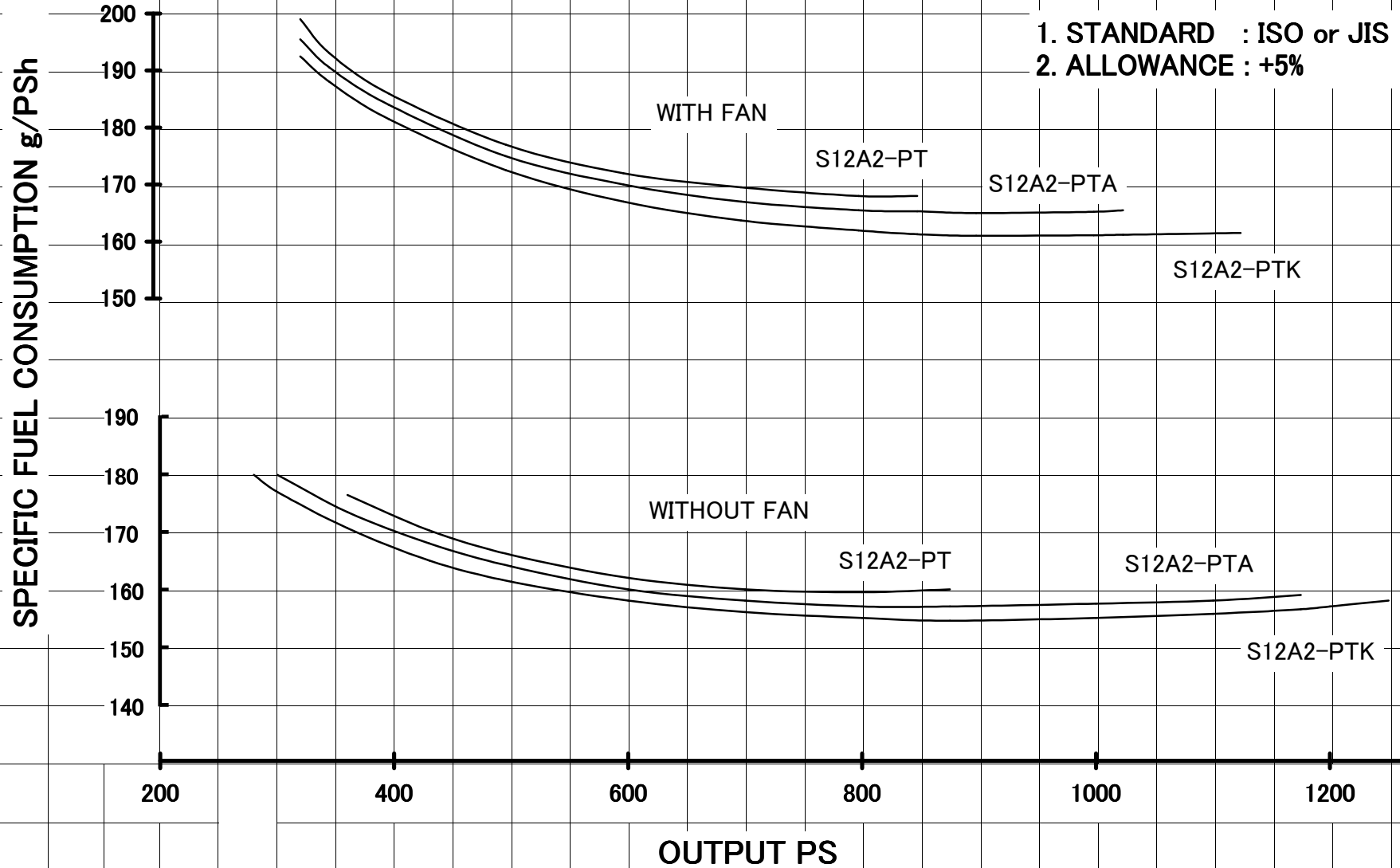
S12A2-PT

S12A2-PTA

S12A2-PTK

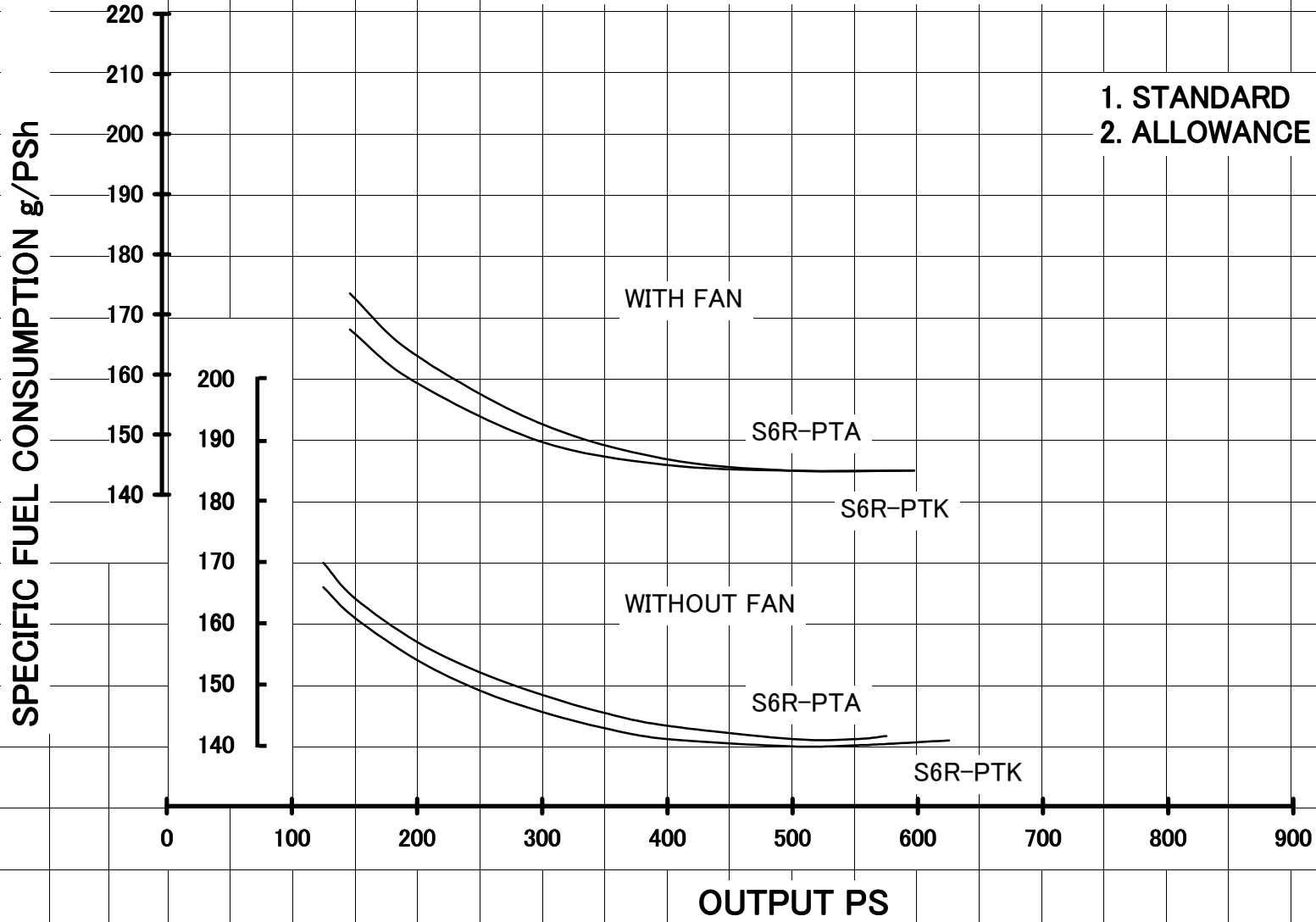


SPECIFIC FUEL CONSUMPTION MODEL : S12A2 1800rpm



SPECIFIC FUEL CONSUMPTION MODEL : S6R 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

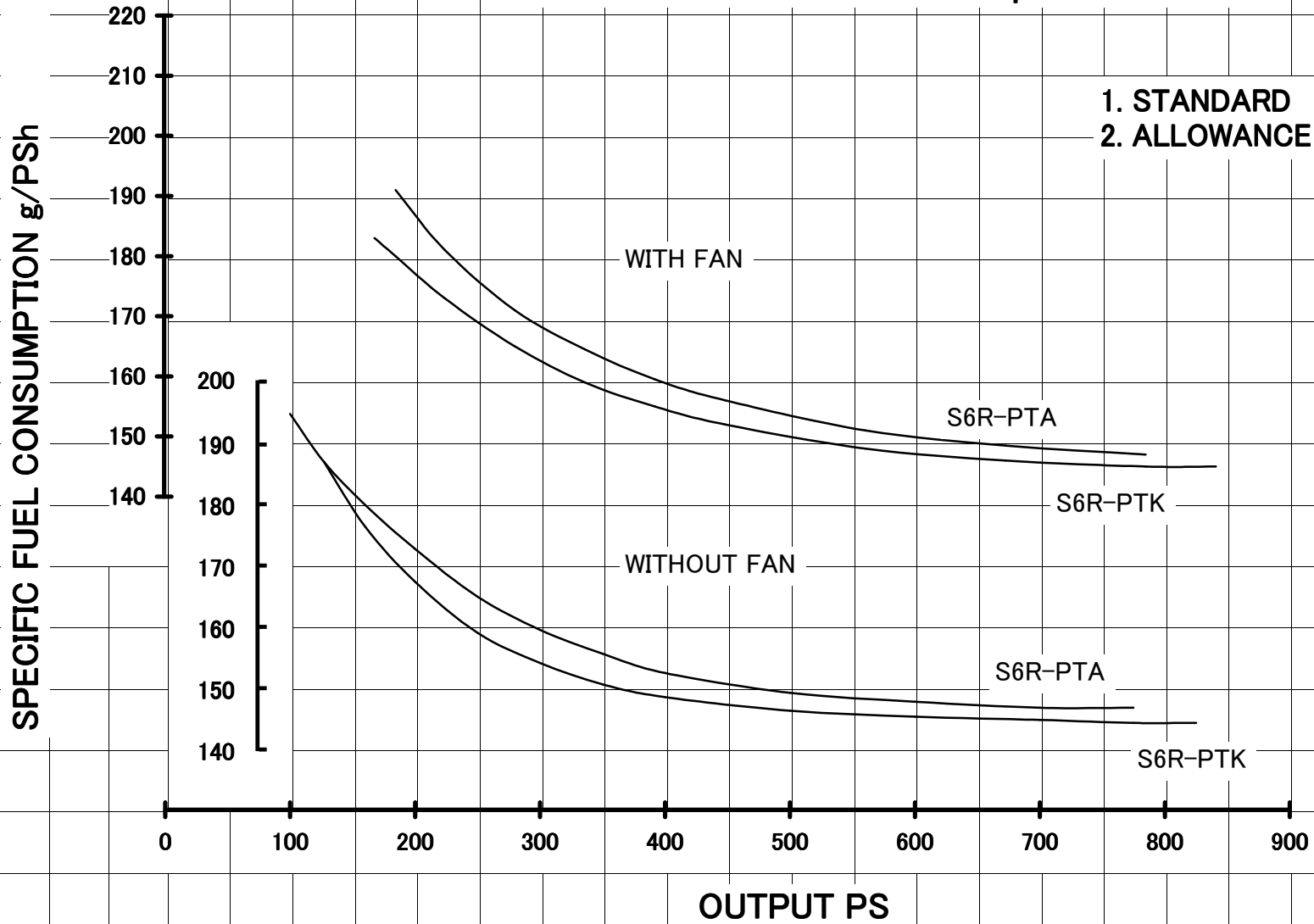


SPECIFIC FUEL CONSUMPTION

MODEL : S6R 1500rpm

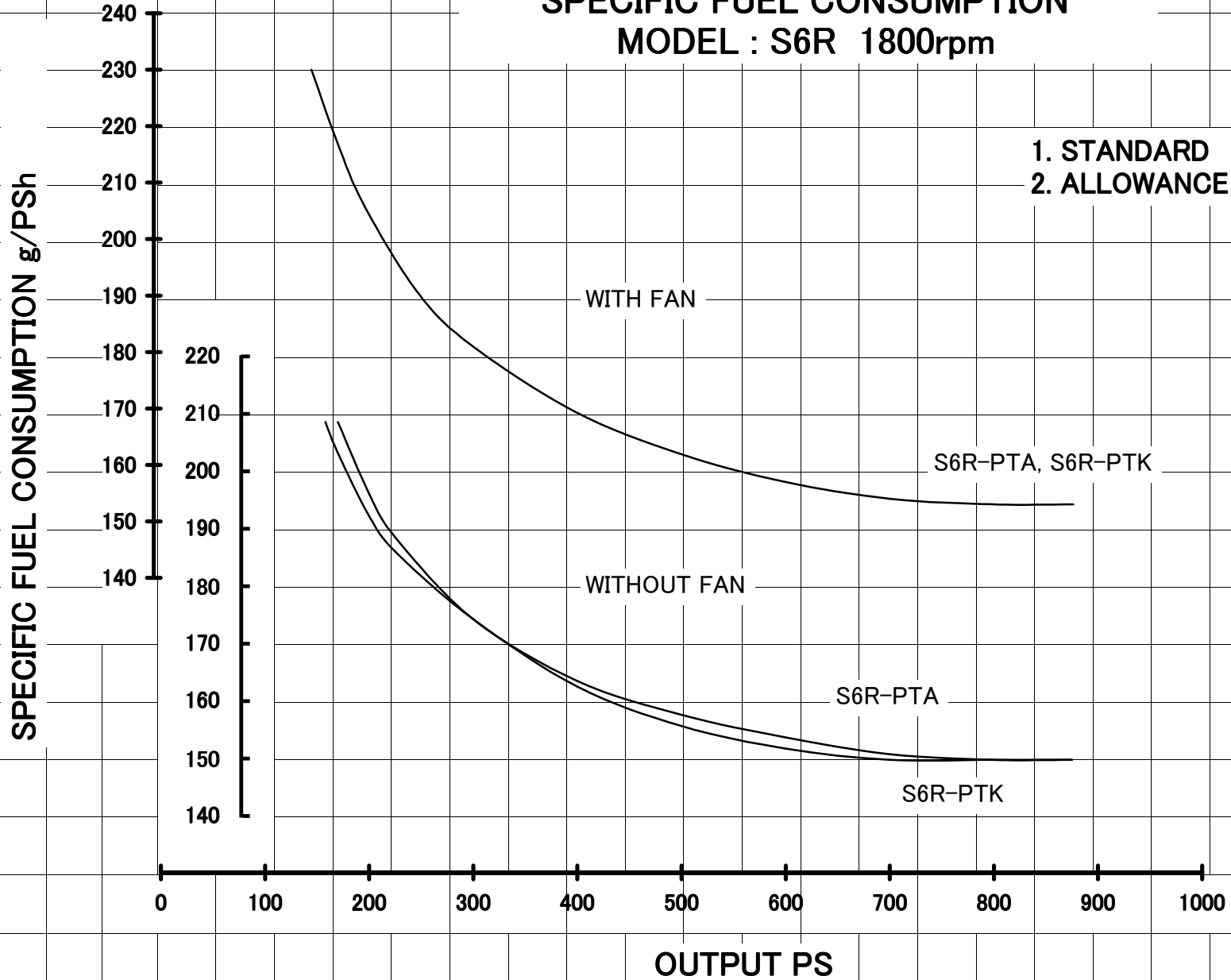
1. STANDARD : ISO or JIS

2. ALLOWANCE : +5%



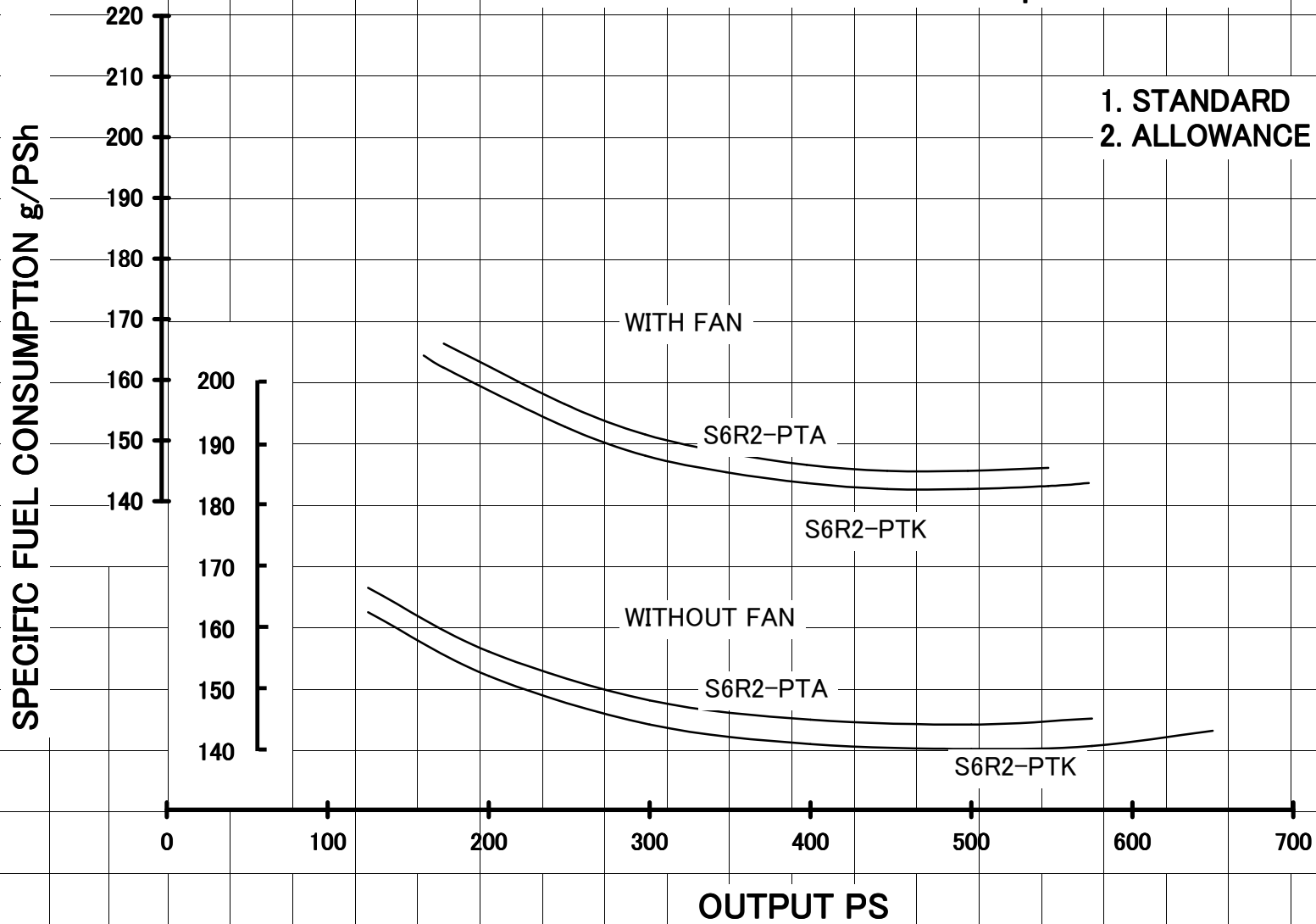
SPECIFIC FUEL CONSUMPTION MODEL : S6R 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S6R2 1000rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

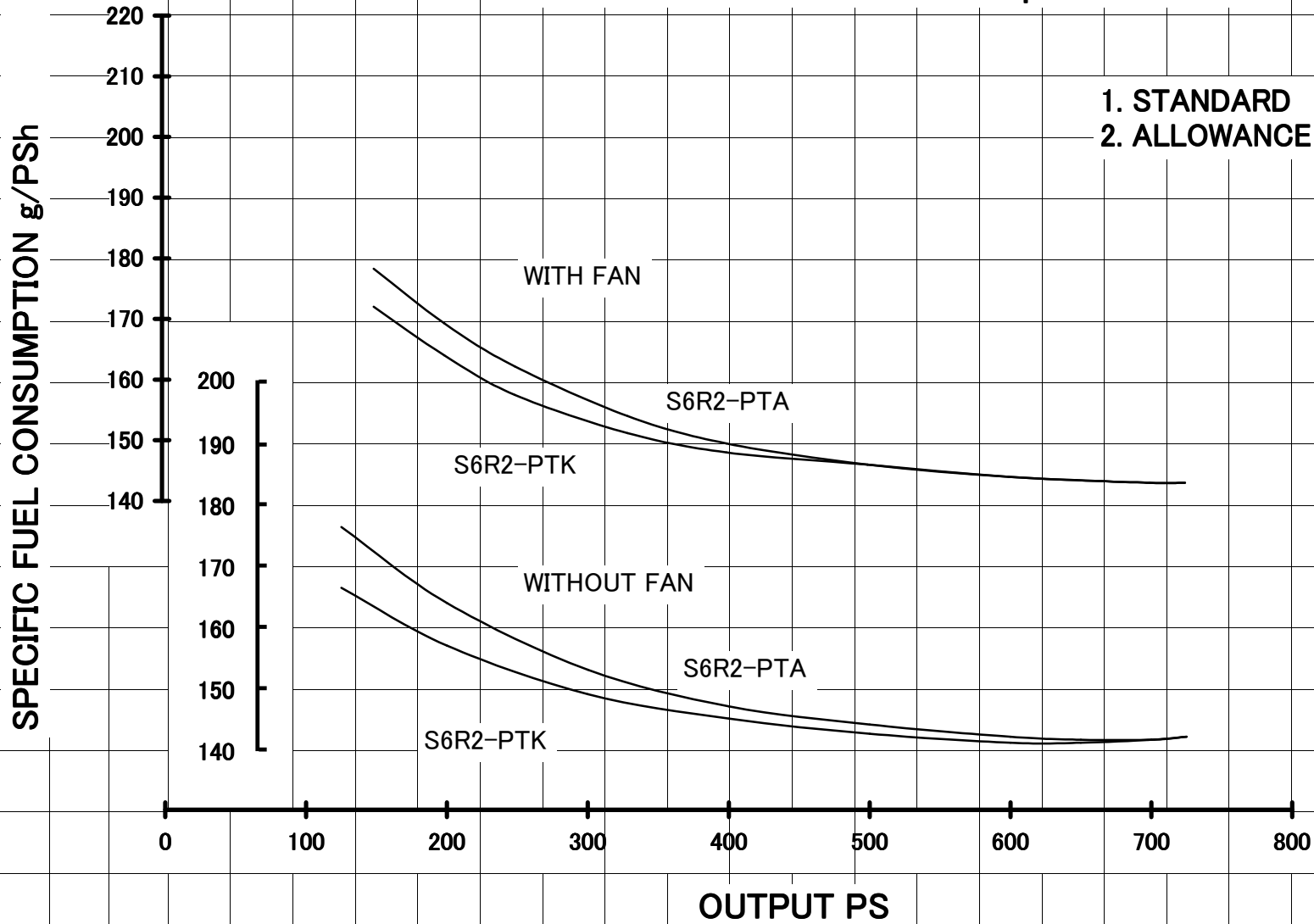


SPECIFIC FUEL CONSUMPTION

MODEL : S6R2 1200rpm

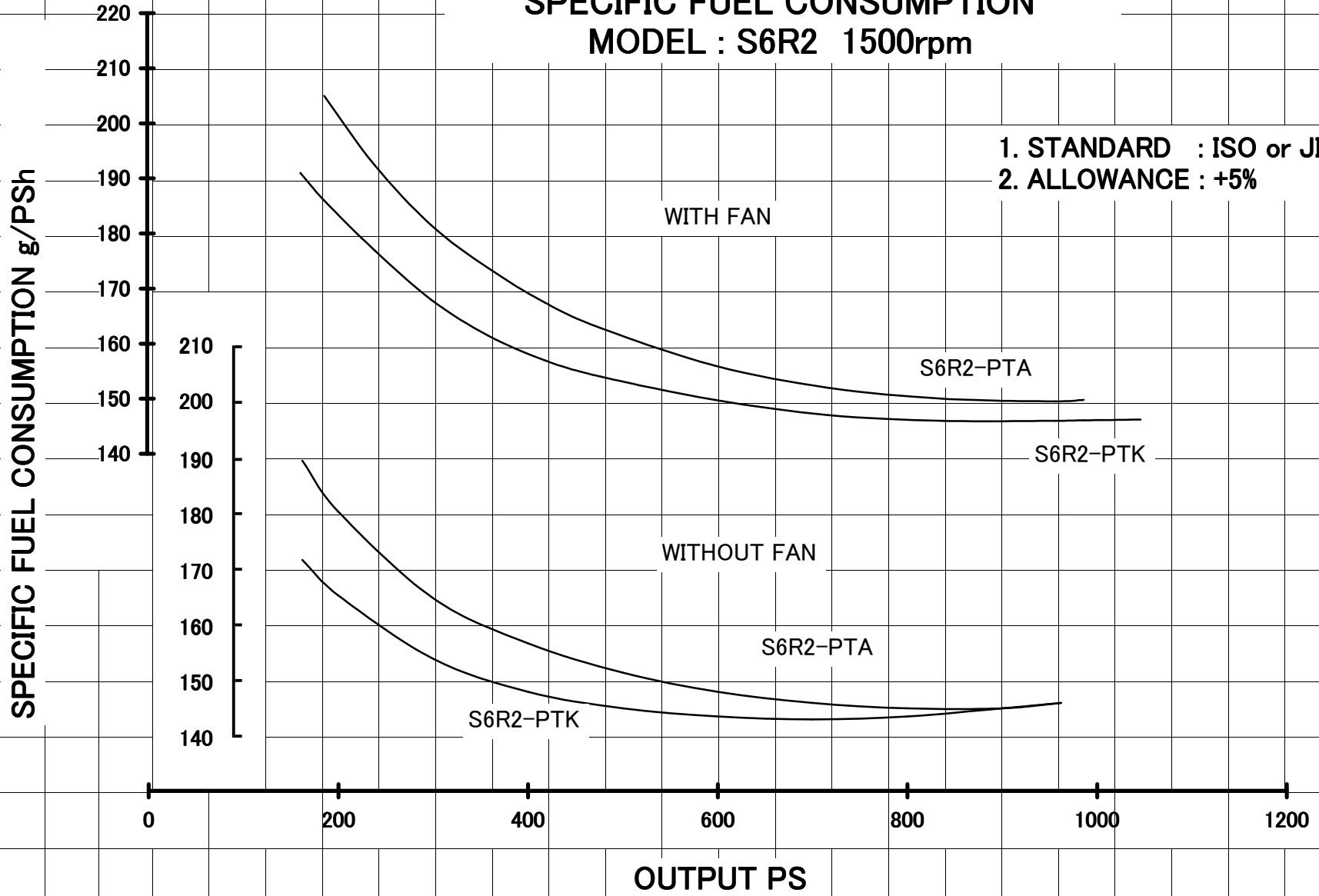
1. STANDARD : ISO or JIS

2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S6R2 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

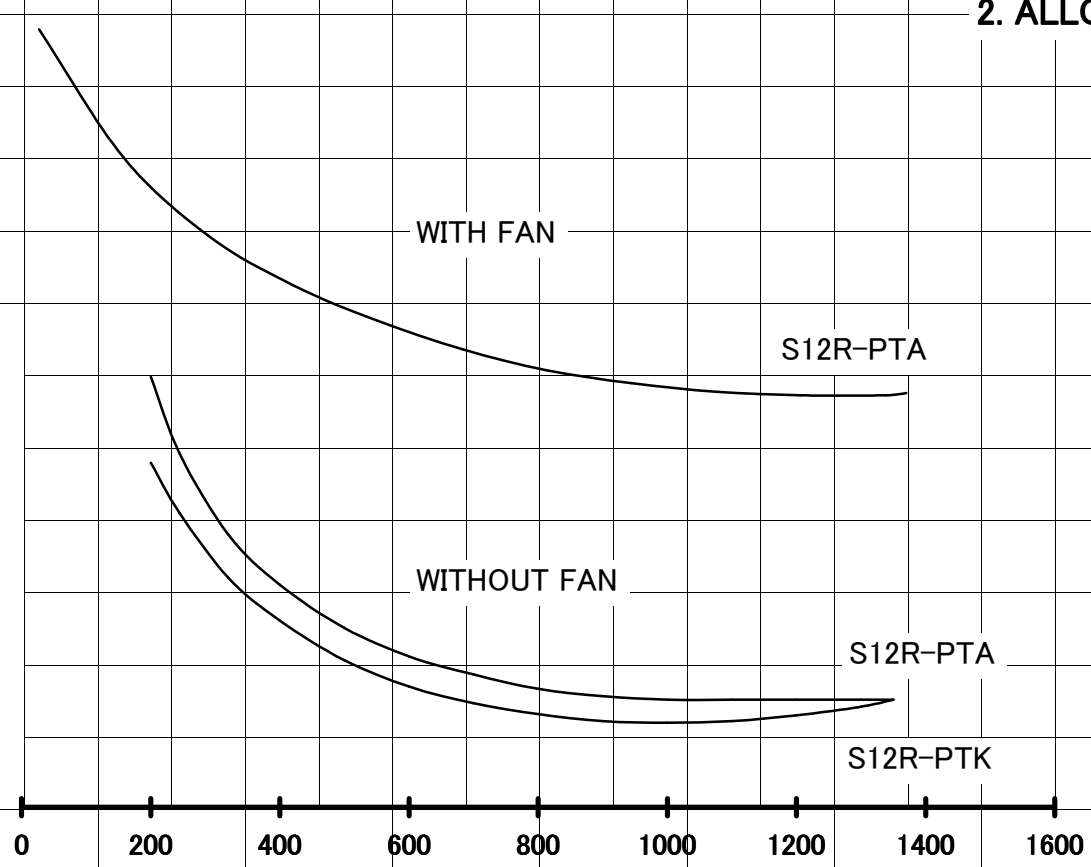


SPECIFIC FUEL CONSUMPTION MODEL : S12R 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

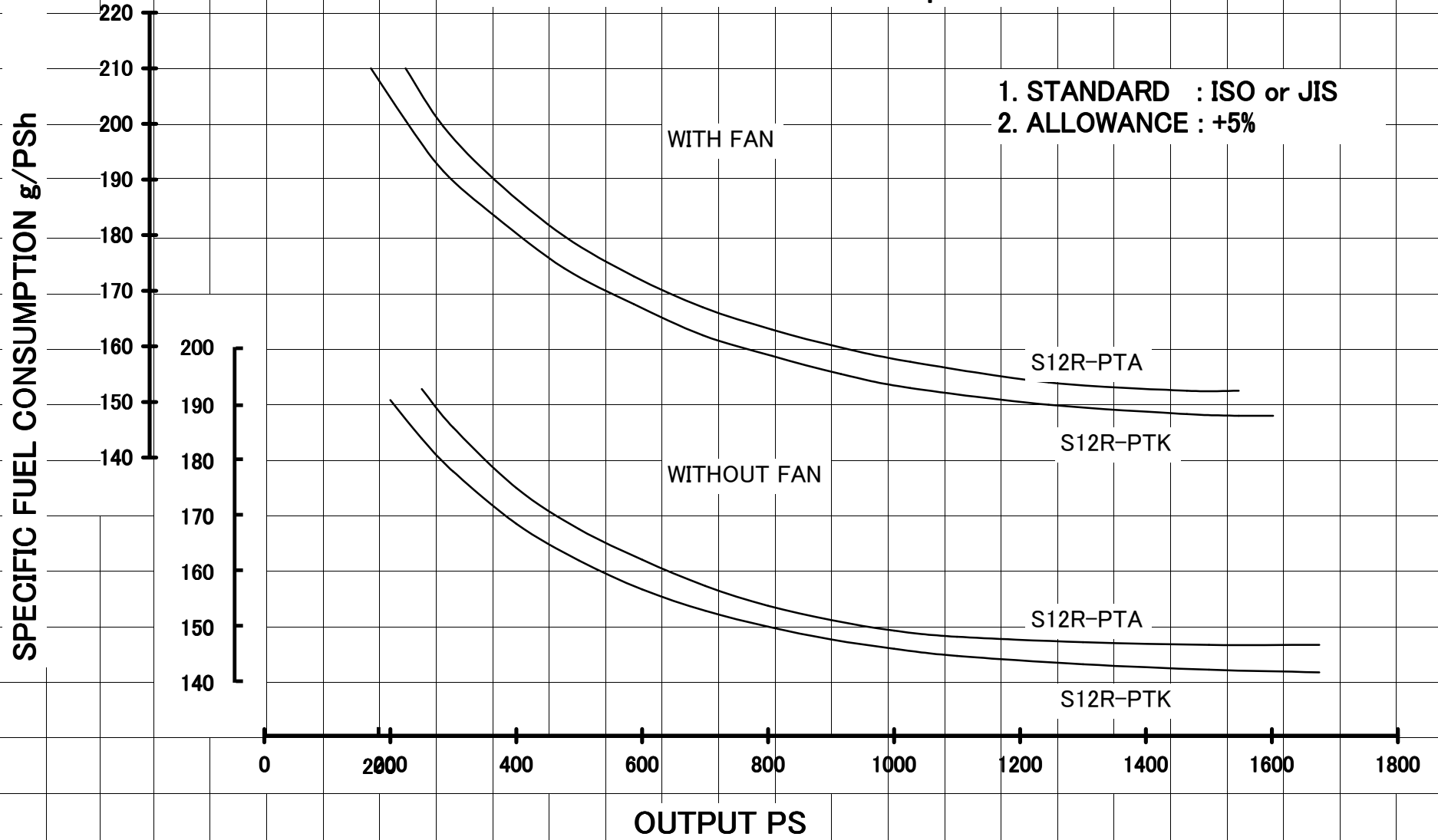
SPECIFIC FUEL CONSUMPTION g/PS_h

200
190
180
170
160
150
140
190
180
170
160
150
140

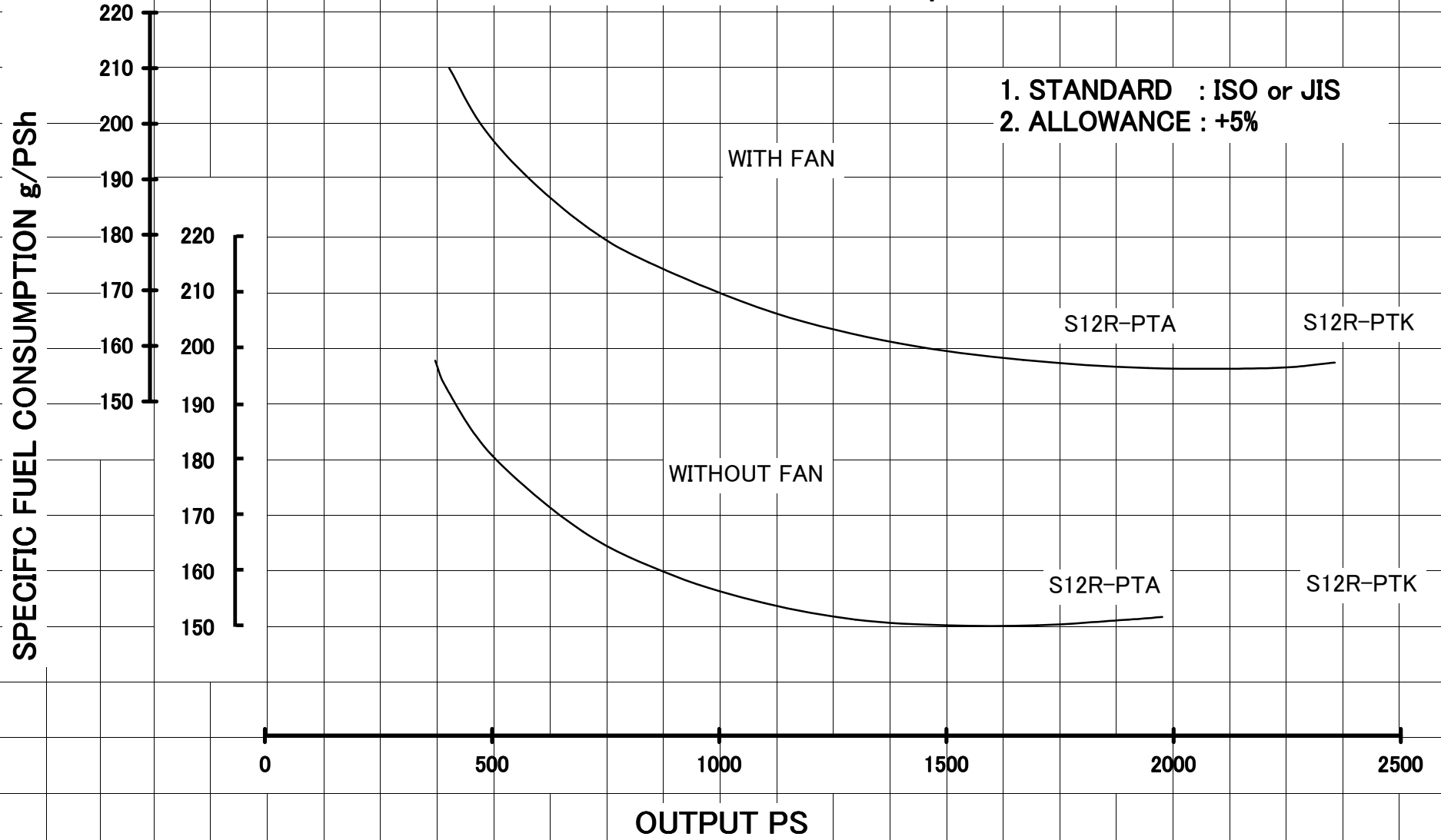


OUTPUT PS

SPECIFIC FUEL CONSUMPTION MODEL : S12R 1500rpm

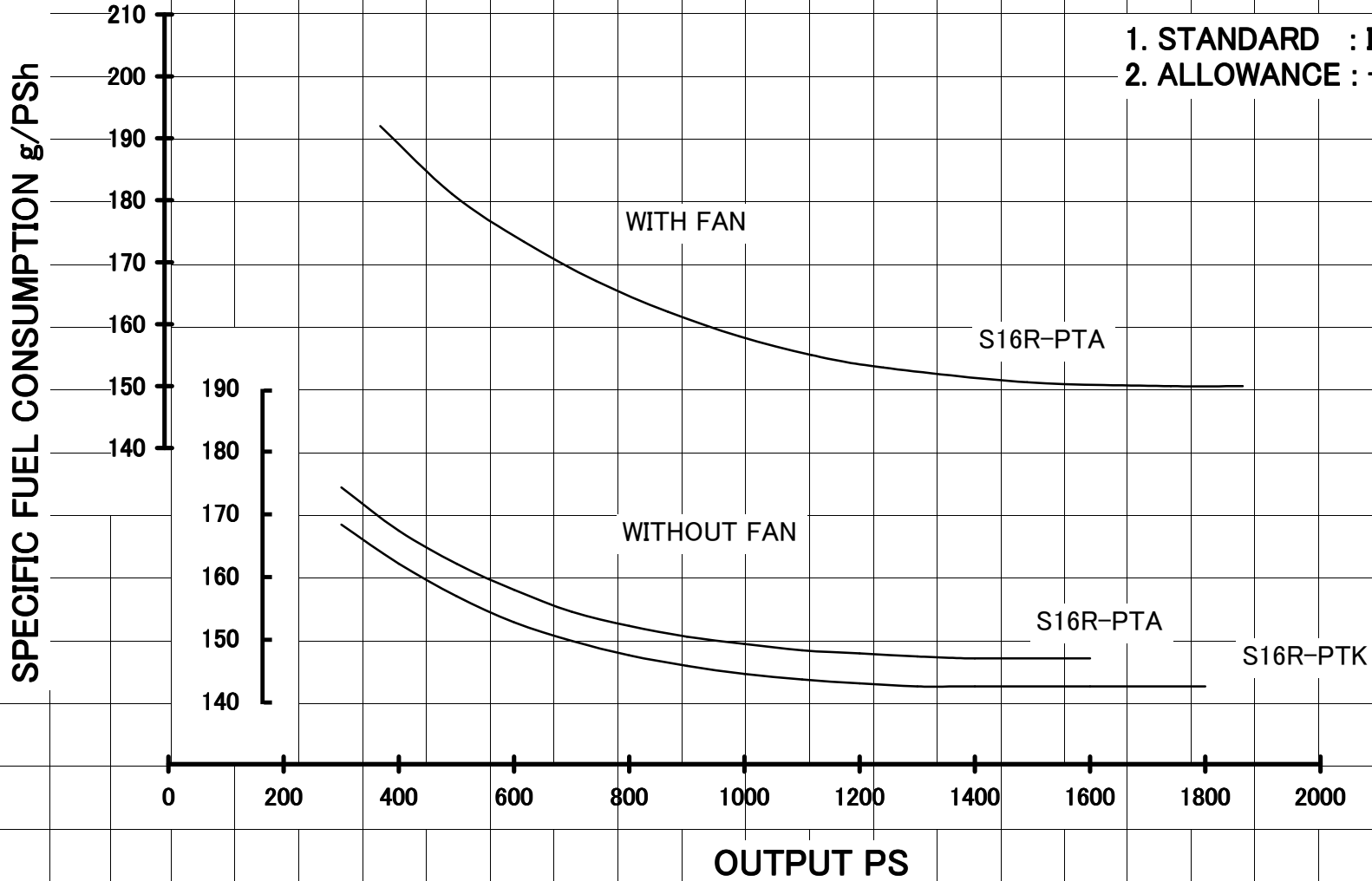


SPECIFIC FUEL CONSUMPTION MODEL : S12R 1800rpm



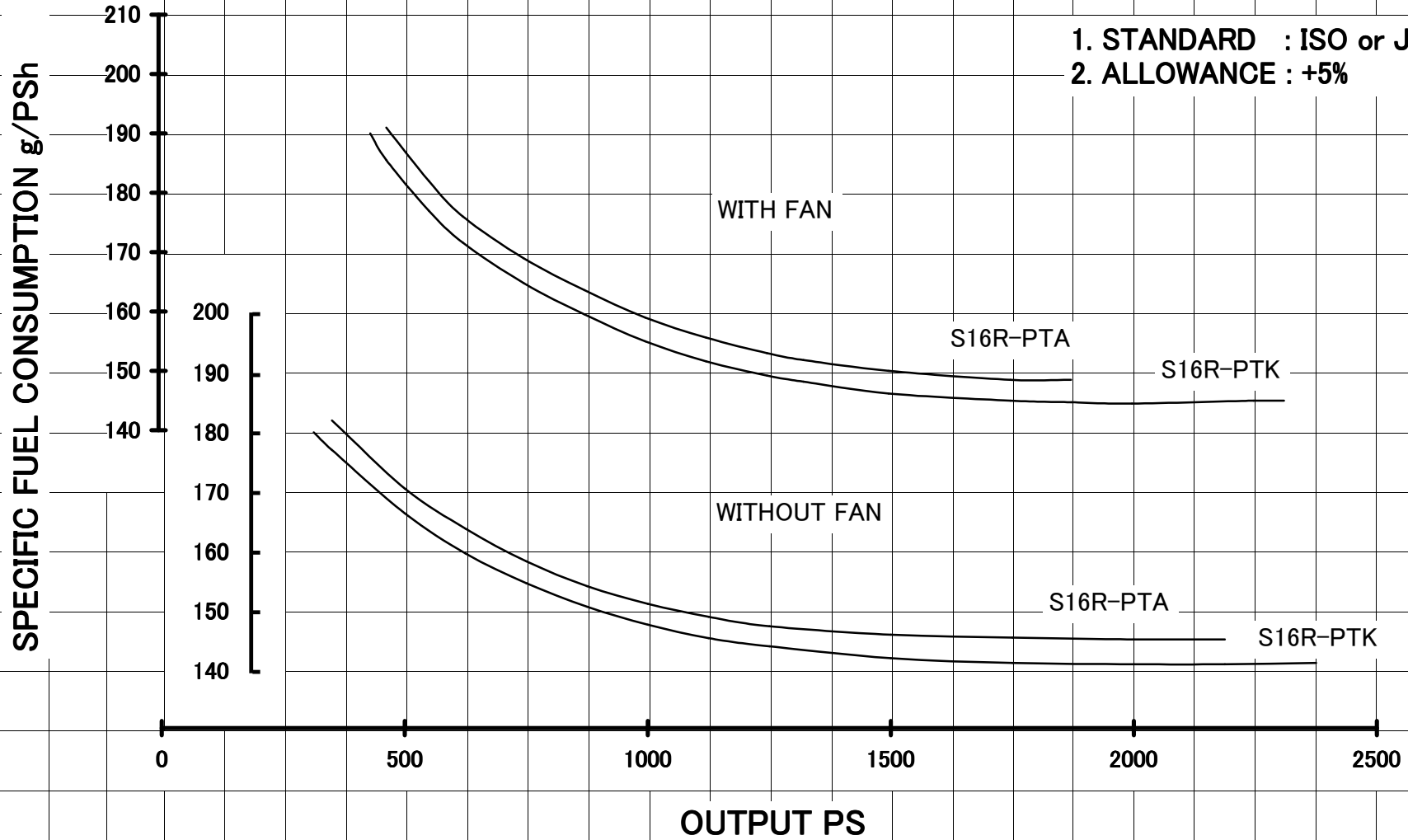
SPECIFIC FUEL CONSUMPTION MODEL : S16R 1200rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



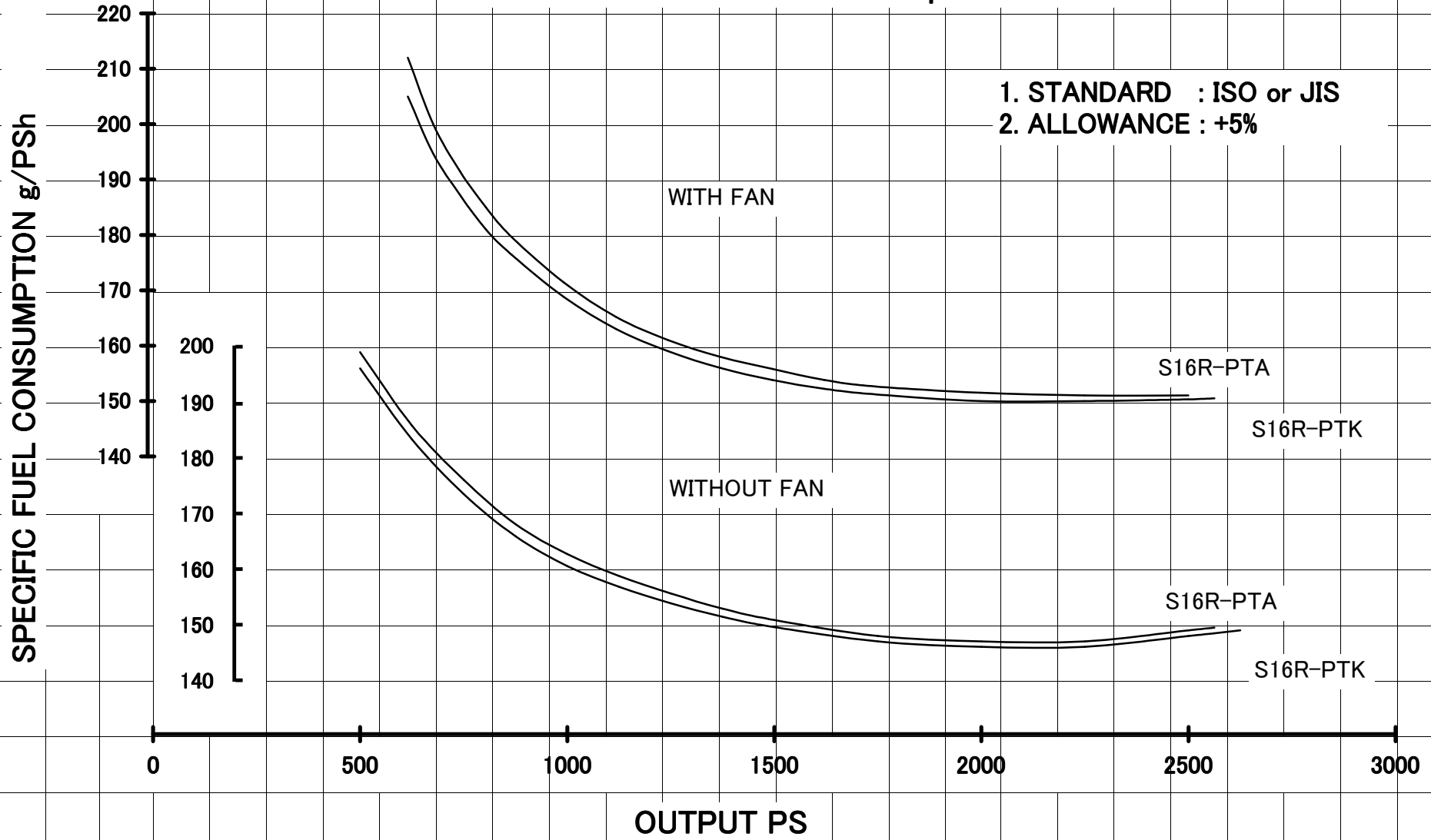
SPECIFIC FUEL CONSUMPTION MODEL : S16R 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



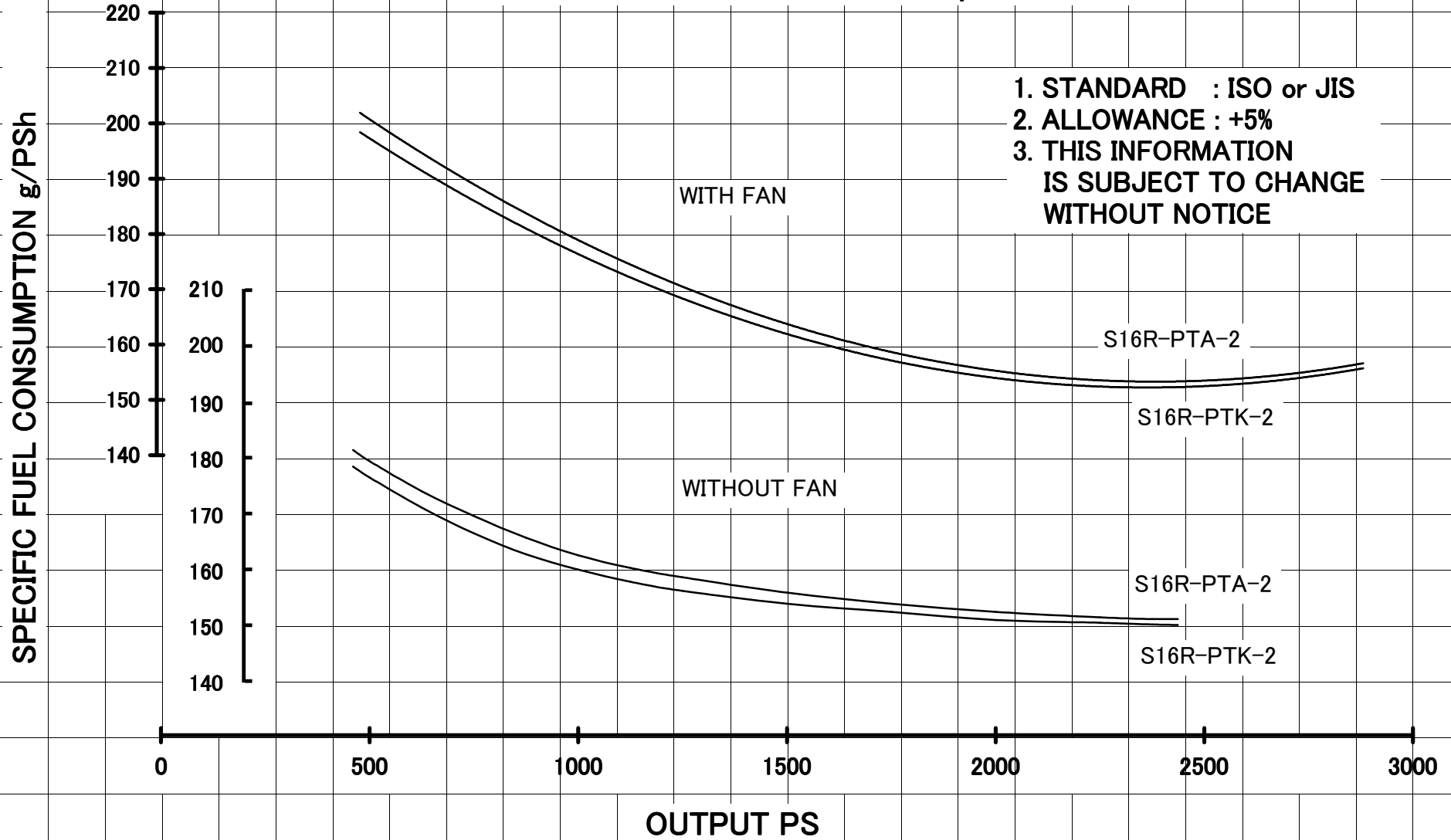
SPECIFIC FUEL CONSUMPTION MODEL : S16R 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S16R-2 1500rpm

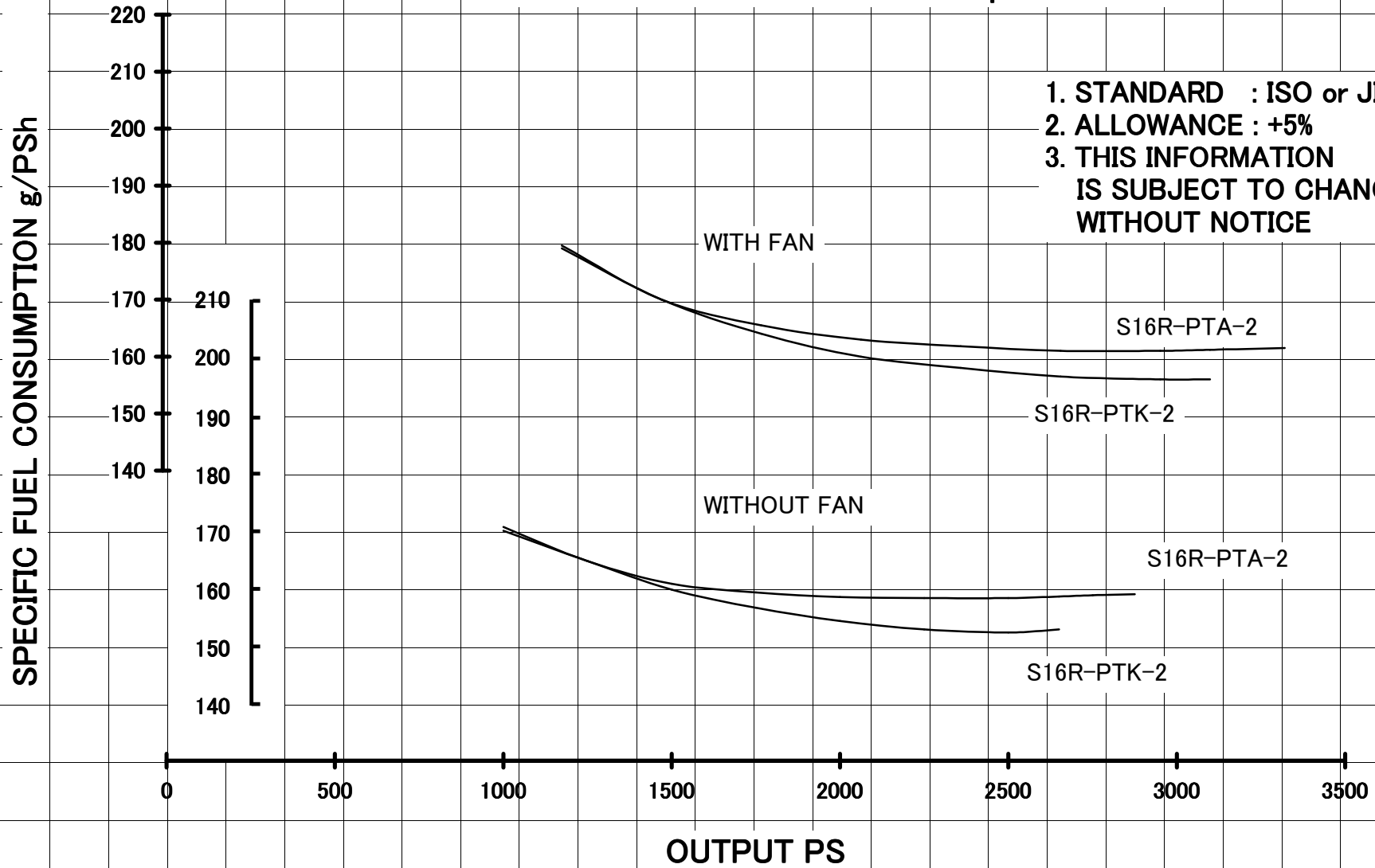
- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%
- 3. THIS INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE



SPECIFIC FUEL CONSUMPTION

MODEL : S16R-2 1800rpm

1. STANDARD : ISO or JIS
2. ALLOWANCE : +5%
3. THIS INFORMATION IS SUBJECT TO CHANGE WITHOUT NOTICE



**SPECIFIC FUEL CONSUMPTION
MODEL : S6R2-PTAA 1500rpm**

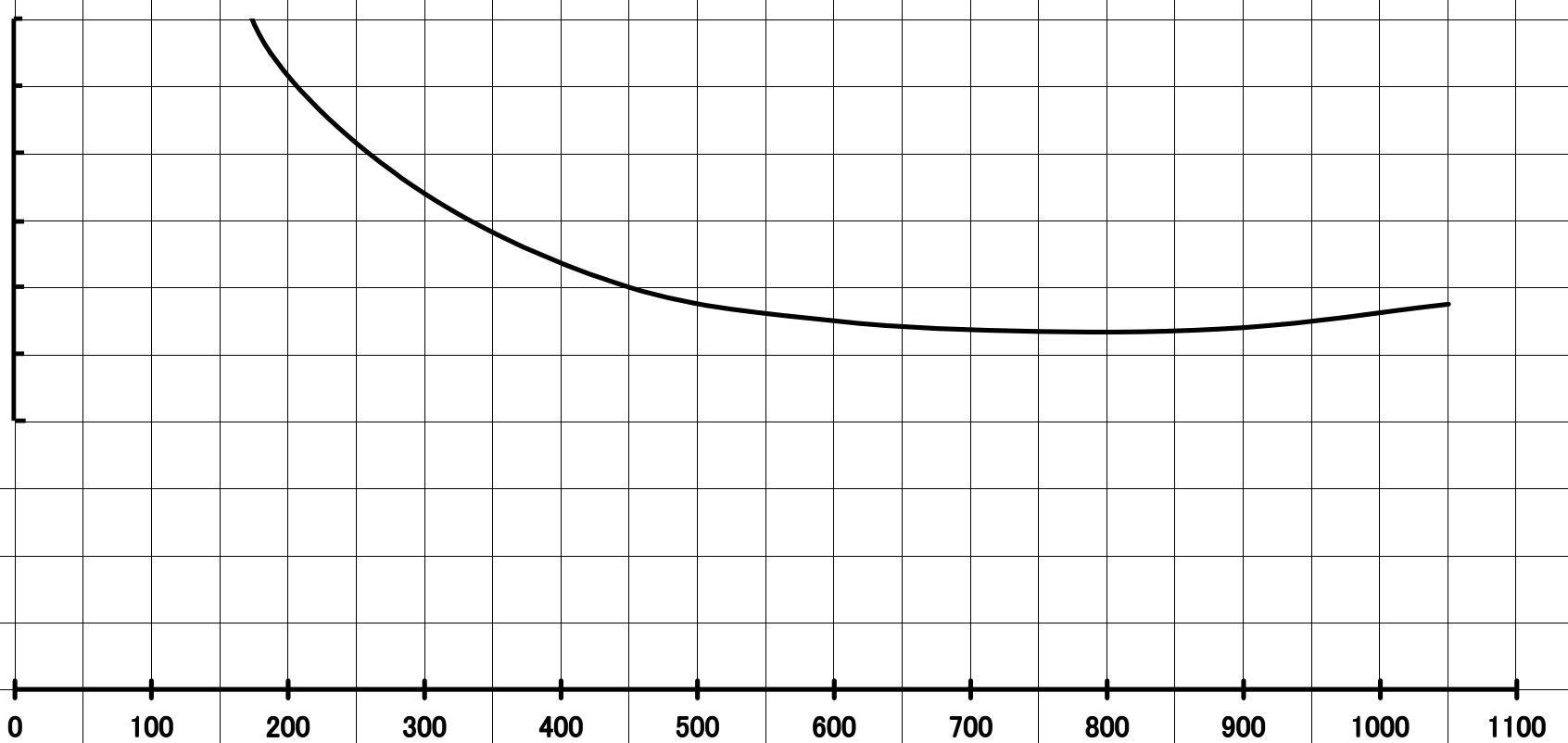
- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

200
190
180
170
160
150
140

0 100 200 300 400 500 600 700 800 900 1000 1100

OUTPUT PS



**SPECIFIC FUEL CONSUMPTION
MODEL : S12H-PTA 1500rpm**

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

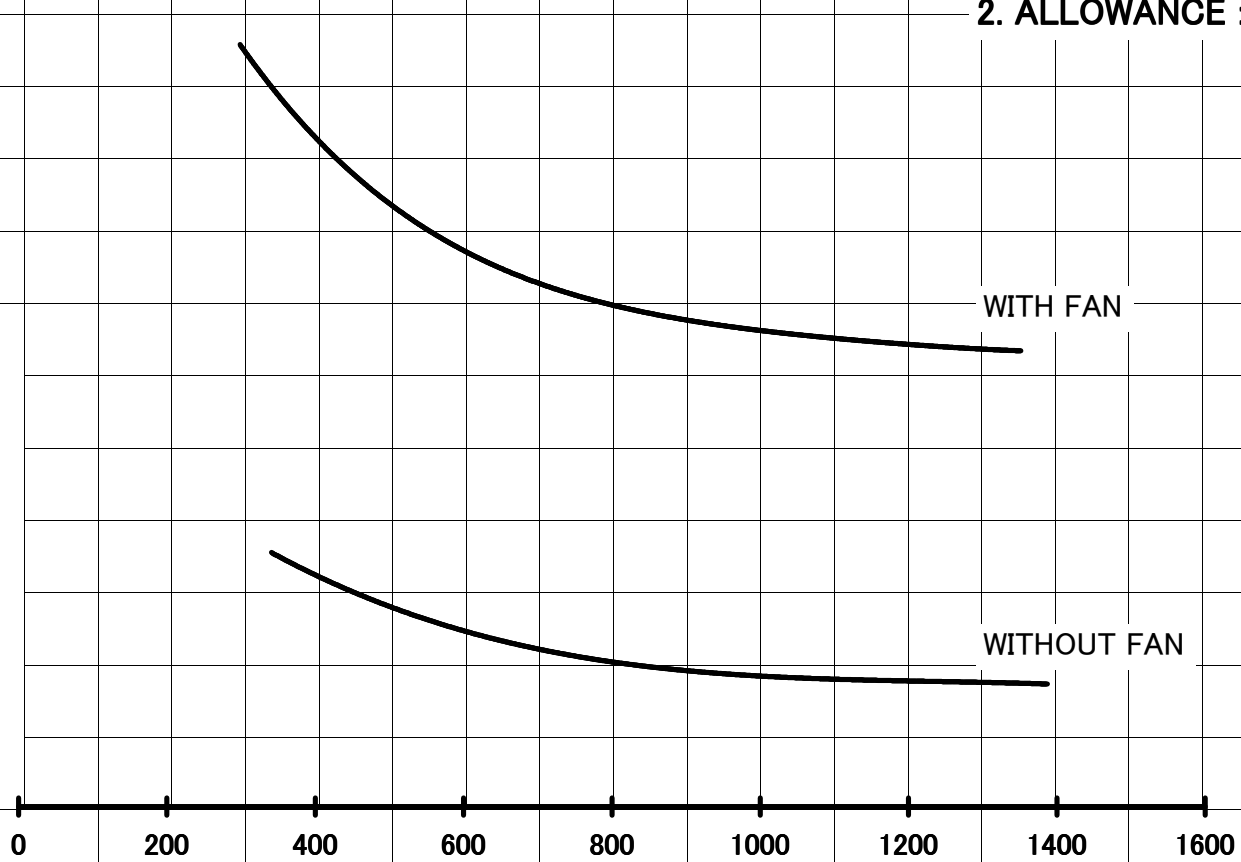
200
190
180
170
160
150
140
190
180
170
160
150
140

0 200 400 600 800 1000 1200 1400 1600

OUTPUT PS

WITH FAN

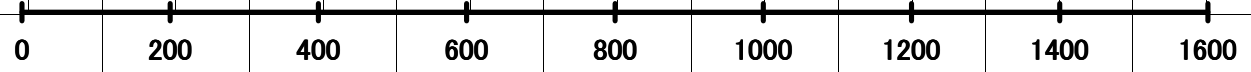
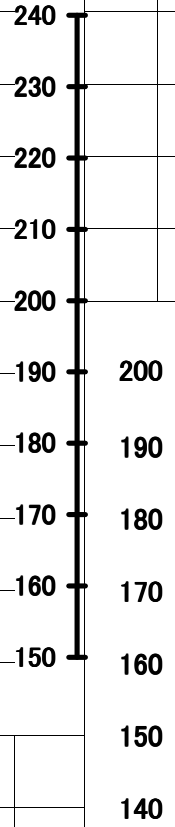
WITHOUT FAN



SPECIFIC FUEL CONSUMPTION
MODEL : S12H-PTA 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

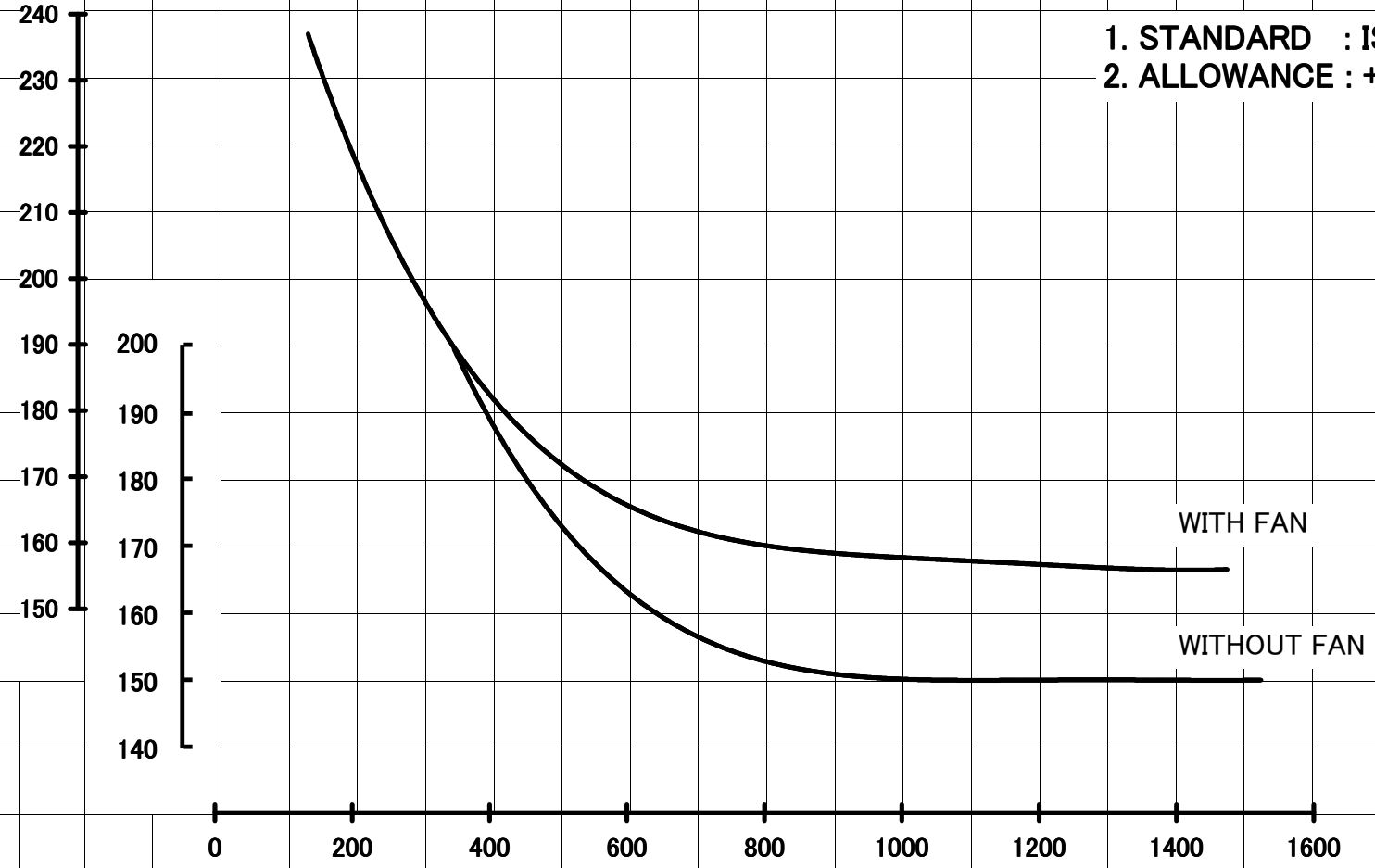
SPECIFIC FUEL CONSUMPTION g/PSH



WITH FAN

WITHOUT FAN

OUTPUT PS



SPECIFIC FUEL CONSUMPTION MODEL : S12R-PTAA2

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

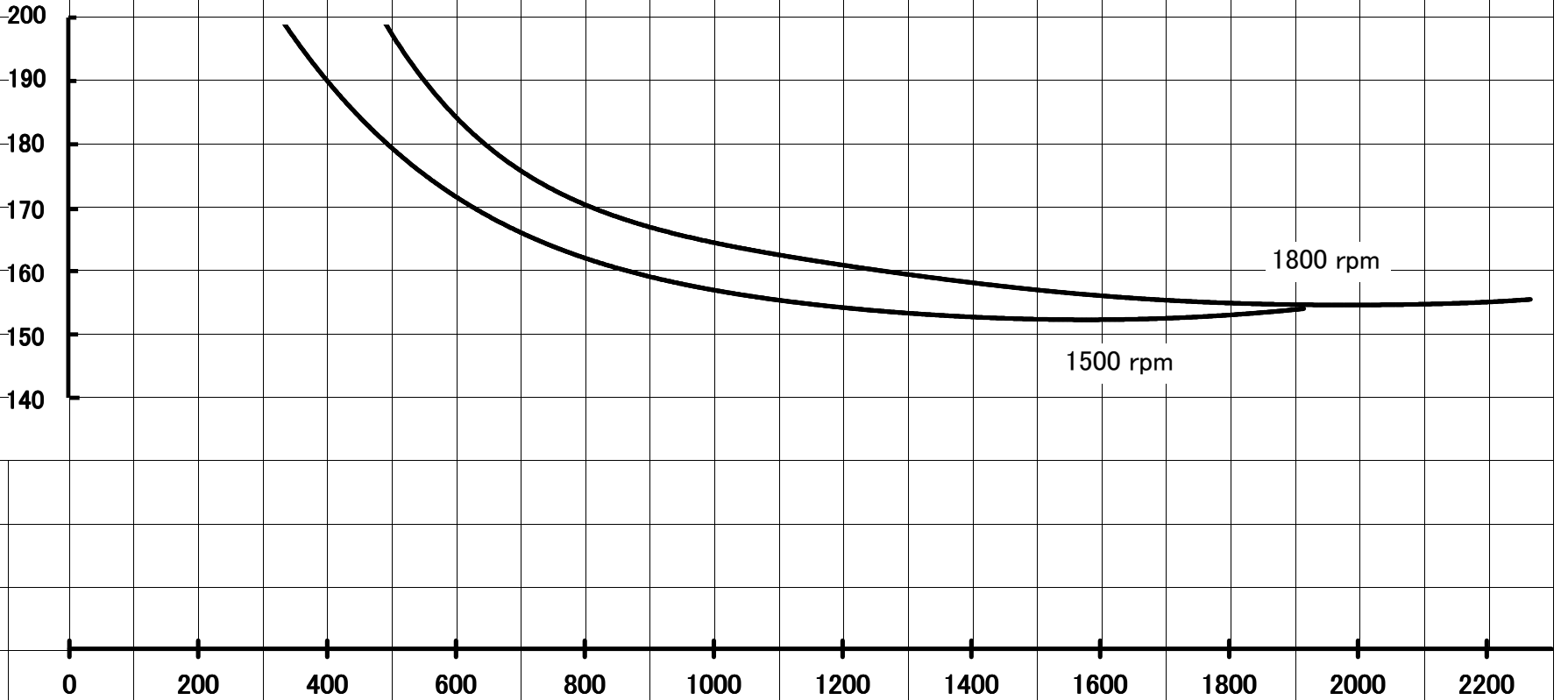
200
190
180
170
160
150
140

0 200 400 600 800 1000 1200 1400 1600 1800 2000 2200

OUTPUT PS

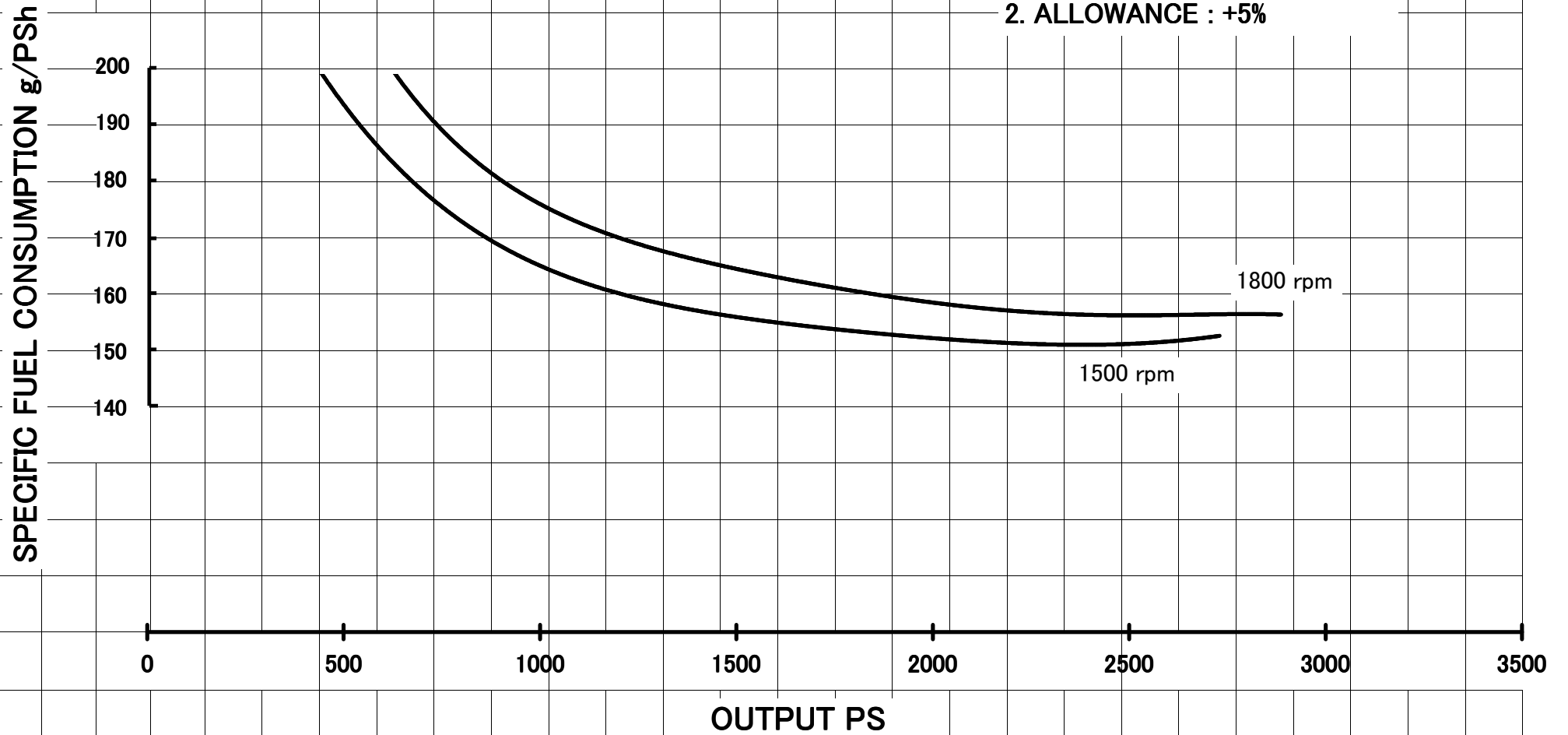
1500 rpm

1800 rpm



**SPECIFIC FUEL CONSUMPTION
MODEL : S16R-PTAA2**

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%



SPECIFIC FUEL CONSUMPTION MODEL : S12R-2 1500rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

SPECIFIC FUEL CONSUMPTION g/PS_h

220
210
200
190
180
170
160
150
140

200
190
180
170
160
150
140

0 200 500 1000 1500 2000 2100

OUTPUT PS

WITH FAN

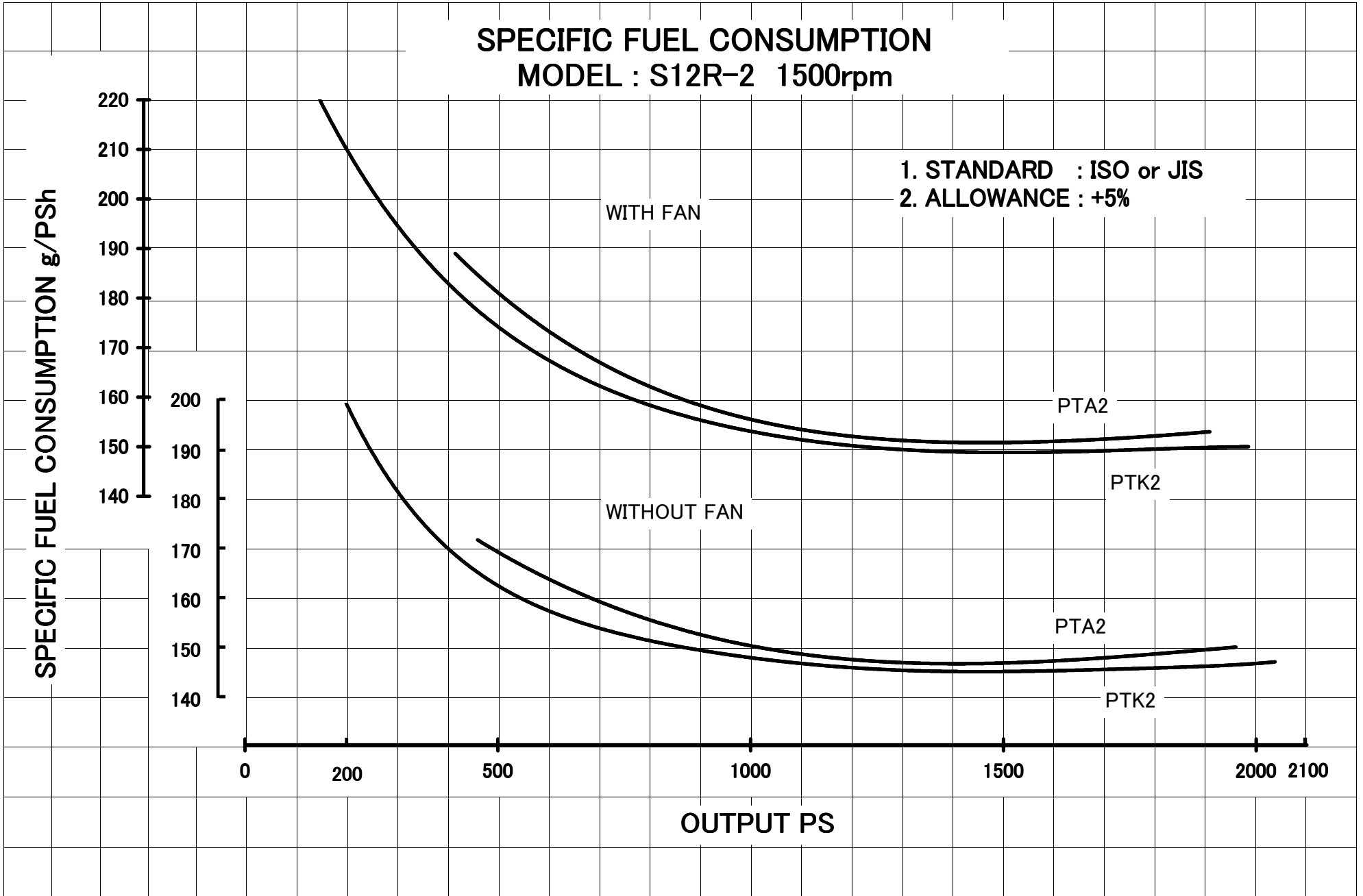
WITHOUT FAN

PTA2

PTK2

PTA2

PTK2



SPECIFIC FUEL CONSUMPTION MODEL : S12R-2 1800rpm

- 1. STANDARD : ISO or JIS
- 2. ALLOWANCE : +5%

