

AIRCRAFT OPERATION TABLE (Battle of Moscow)

	(Unit)	I-16 Type 24	MiG-3	IL-2 model 41	Pe-2 Series 35	P-40 E-1	Bf 109 E-7	Bf 109 F-2	Bf 110 E-2	Ju 88 A-4	MC.202 Series VIII
TEMPERATURES (max)											
Water or cylinder	deg C	205°	120°	120°	100°	125°	100°	110°	100°	110°	100° (output)
Oil (INTAKE)	deg C	-	85°	85°	-	90°	80°	85°	80°	-	85°
Oil (OUTPUT)	deg C	125°	120°	120°	110°	-	105°	-	105°	130°	110°
ENGINE SETTINGS											
	model	M-63 (p)	AM-35a (s)	AM-38 (s)	M-105RA (s)	V-1710-39 (p)	DB-601A (p)	DB-601N (p)	DB-601A(p)	Jumo-211J (n)	RA. 1000 (p)
Normal Operation	RU: Hg										
	RPM	915mm	1040mm	1180mm	910mm	37.2"	1.15	1.15	1.15	1.15	1.23
Combat / Climb	GER: ATA	2200	2050	2050	2700	2600	2200	2300	2200	2250	2200
	RPM										
Emergency Power/ Boost	RU: Hg					42"/45.5" (T.O.)	1.23	1.25	1.23	1.25	1.35
	RPM	~	~	~	~	3000	2300	2400	2300	2400	2400
Supercharger Stage 1	GER: ATA					5 min	30 min	30 min	30 min	30 min	5 min
	RPM										
Supercharger Stage 2	RU: Hg	1065mm	1240mm	1280mm		56"	1.3 / 1.4	1.35 / 1.42	1.3 / 1.4	1.42	1.45
	RPM	2300	2050	2150	~	3000	2400	2600 / 2800	2400	2600	2500
Notes	GER: ATA	5min	10 min	10 min		Prohib. by flight man.	5min / 1min	3 min / 1 min	5 min / 1 min	1 min	1 min
	RPM										
Supercharger Stage 1	meters	inf. 3000m	-	-	inf. 2700m	-	-	-	-	-	-
Supercharger Stage 2	meters	sup. 3000m	-	-	sup. 2700m	-	-	-	-	-	-
Notes	-	-	Mixture lever fully forward for boost	-	-	Mixture set on Auto-rich except emergency situation	-	-	-	-	Boost effective Above 3000 (boost = RPM To 2400). 10 min limit.
AIRSPEEDS											
Takeoff – Rotation	km/h / mp/h*	145...175	180...200	150...190	160...200	100...118*	140...170	145...175	180...220	170...210	160...190
Landing – Final	km/h / mp/h*	190	200	155	230	137*	190	190	180	220	200
Landing – Touchdown	km/h / mp/h*	140	140	135	160	90*	135	140	150	155	145
Stall speed (in flight conf.)	km/h / mp/h*	143...164	159...175	136...156	175...200	95...110*	152...159	151...168	148...182	188...205	151...166
Glideslope	km/h / mp/h*	185...195	195...205	185...195	220...240	130...137*	180...190	185...195	200...220	210...220	190...200
Speed (sea level)	km/h / mp/h*	448	525	430	434	307*	477	528	456	424	500
Speed (2000m)	km/h / mp/h*	460	-	450	476	-	520	563	494	462	543
Speed (4000m)	km/h / mp/h*	490	-	-	-	-	-	-	-	-	-
Speed (5000m)	km/h / mp/h*	-	-	-	521	373*	564	606	529	-	604
Speed (6000m)	km/h / mp/h*	370	620	-	-	-	-	-	-	486	-
Max dive speed	km/h / mp/h*	620	750	570	790	534*	850	850	740	670	850
FRAME/DESIGN/RATES											
Stall AOA (in flight conf.)	deg	17.6°	17.3°	19.4°	13.9°	14°	20°	19.7°	20.7°	21°	19.6°
Max turn (sea level)	sec (at) km/h	19s at 230km/h	22.4s at 270km/h	23.1s at 250km/h	30.5s at 270km/h	24.3s at 168mp/h	20.5s at 270km/h	23.6s at 270km/h	27.4s at 270km/h	33s at 250km/h	22.6s at 270km/h
Max climb rate	m/s	16.7 m/s	15.9 m/s	9.4 m/s	9.3 m/s	12.5 m/s	14 m/s	16.4 m/s	10.3 m/s	7.0 m/s	17.3 m/s
Service ceiling	km	10.5 km	11.8 km	7.5 km	9.1 km	9.2 km	10.5 km	11.5 km	9.5 km	7.5 km	11.3 km
Max load factor	G	12 G	12.8 G	11.5 G	11 G	12.2 G	11 G	11 G	11 G	8 G	14.8 G
WEAPONS											
Guns	number x cal.	4x7.62 ShKAS	2x7.62 12.7 MG UB 2 x 12.7 UB	2x7.62 ShKAS	7.62 ShKAS 12.7 ShKAS <u>Defensive:</u> Tu: 7.62 ShKAS Be: 12.7 UB Si: 7.62 ShKAS	6x12.7 M2.50	2x7.92 MG17	2x7.92 MG17	4x7.92 MG17 <u>Defensive:</u> Ba: 7.92 MG 15	<u>Defensive:</u> No: 7.92 MG 81 Be: 7.92 MG 81 Ba: 7.92 MG 81	2x12.7 Breda 2x7.7 Breda
Cannons	number x cal.	2x20 ShVAK	2 x 20 SsVAK	2x20 SsVAK 2x23 Vya-23	-	-	2x20 MG FF	1x15 MG151/15 1x20 MG151/20	2x20 MG FF	-	2x20 MG151/20
Bomb load / rockets	number x ord.	2xFAB-50sv 2xFAB-100M	6xROS-82 2xFAB50sv 2xFAB100M	6xFAB-50sv 6xFAB-100M 2xFAB-250sv	10xFAB-100M 4xFAB250sv 2xFAB500M	4x ROS-82 FAB-250sv FAB-500M	4xSC50 / SC250	4xSC50 SC250	12xSC50 2xSC250 2xSC500 SC1000	44xSC50 6xSC250 4xSC500 2xSC1000 SC1800	2x50-T 2x100-T