

# SM-29E

# SUPER FULCRUM

A Transformational Upgrade For MiG-29, MiG-29S/SE/SM/SMT and MiG-29M Tactical Aircraft  
Engineered, Installed and Supported by Stavatti Aerospace



## AIRCRAFT UPGRADE & IMPROVEMENTS INCLUDING...

- GEAE F414 EPE Afterburning Turbofans
- Raytheon AN/APG-79 AESA Radar
- Stavatti Design Conformal Fuel Tanks (CFTs)
- Gen III Helmet Mounted Display System (HMDS) or JHMCS
- Sparrowhawk HUD or BAE LiteHUD
- L3 580mm x 203mm Large Area Avionics Display (LAAD)
- New Design External Pylons with LAU-129 MRLs
- Increased Internal Fuel Capacity to 7,214 Ltrs
- Increased External Warload to 6,800 kg
- Comprehensive Integrated ECM System
- Improved Wheels, Tires, Brakes and Anti-Skid
- Optional Retractable In-Flight Refueling Probe

# STAVATTI™

STAVATTI AEROSPACE LTD • 9400 Porter Road, Niagara Falls, NY 14304 USA • TEL: (651) 238-5369 • email: SM29E@stavatti.com • <http://www.stavatti.com>



DESCRIPTION			
<p>The SM-29E Super Fulcrum is an enhanced performance MiG-29 Fulcrum aircraft that has been transformationally upgraded by Stavatti Aerospace to the "Super Fulcrum" configuration, allowing the aircraft remain a potent and competitive air defense asset through 2040. The proposed upgrades include installation of new GEAE F414 EPE afterburning turbofan engines and re-engineered engine nacelles. The F414 EPE engines will provide greater thrust, lower specific fuel consumption and improve maintainability over the original RD-33 powerplants. The modifications include sensor, avionics and cockpit upgrades including installation of a Raytheon APG-79 AESA radar, Stavatti proprietary Conformal Fuel Tanks (CFTs), a L3Harris Large Area Avionics Display (LAAD), a comprehensive internal ECM/EW suite, an upgraded HUD and advanced Hands on Throttle and Stick (HOTAS). Proposed modifications include NATO standard communications, navigation and electronic warfare systems as well as new wheels, tires, brakes and antiskid. For enhanced mission capability, newly designed pylons and ejectors are proposed to provide for delivery of both current Ukraine Air Force weapons and missiles and NATO ordnance including the AIM-9, AIM-120, JDAM and JSOW weapons. Major airframe components are to be inspected and rebuilt as needed. Structures that can benefit from advanced materials are to be replaced to provide for a new total airframe life of 6,000 flight hours. To increase aircraft range the Conformal Fuel Tanks (CFTs) increase aircraft total internal fuel capacity to 7,214 Ltrs. A retractable in-flight aerial refueling probe is also available as a cost plus option.</p>			
SPECIFICATIONS			
<b>Aircraft:</b> SM-29E Super Fulcrum		<b>Original Manufacturer:</b> MiG	
<b>Upgrade Of:</b> MiG-29, MiG-29S/SE/SM/M/SMT/G		<b>Upgrade Provider:</b> Stavatti Aerospace Ltd	
Accommodation		Armament	
Crew Seating	SM-29E Single Seat; SM-29F Two Seat K-36DM Ejection Seat	Internal	Gsh-301 30mm cannon with 150 rds
		External	7 External Stores Hardpoints
Powerplant		Avionics & Electronic Warfare	
Number	2	Radar	AN/APG-79 AESA
Type	Afterburning Turbofan	IRST	IRST21
Manufacturer	GEAE	Databus	MIL-STD-1553-B
Model	F414 EPE	HMDS	Gen III HMDS or JHMCS
Afterburning Thrust @ SL	11,938 kgf st	HUD	Sparrowhawk or LiteHUD
Military Thrust @ SL	16,800 kgf st	HDD	508mm x 203mm LAAD
Total Aircraft Thrust @ SL	23,876 kgf st	Comm	AN/ARC-210(V) Gen V
		IFF	AN/APX-126,125(V) or 113(V)
		Data Link	TACR-16DL
		MMDP	FV-4000
		GPS/INS	FALCN
		RF ECM	AN/ALQ-211A(V)4 (Optional)
		RWR	AN/ALQ-211A(V)4 (Optional)
		MAWS	AN/AAR-58 (Optional)
		SPJ	AN/ALQ-214 (Optional)
		Chaff/Flare	BVP-30-26M & AN/ALE-47
Dimensions		Performance	
Max Wingspan	11.36 m	Stall Speed, TTW-SL	222 km/hr
Max Length	16.28 m	Stall Speed, TLW-SL	189 km/hr
Max Height	4.73 m	Stall Speed, MTOW-SL	256 km/hr
Wing Area	38 sq m	Takeoff Speed, TTW-SL	244 km/hr
		Takeoff Speed, MTOW-SL	282 km/hr
		Approach Speed, TLW-SL	228 km/hr
		Approach Speed, MTOW-SL	287 km/hr
		Max Level Speed-SL	1.22 Mach
		Max Level Speed-FL360	2.55 Mach
		Max ROC, TCW-SL	423.6 m/sec
		Service Ceiling	18,898 m
		Tactical Radius, Internal Fuel	898 km
		Max Range, Internal Fuel	2,393 km
		Ferry Range (no inflight refueling)	3,882 km
		Take-off Run, TTW	228 m
		Landing Run, TLW	601 m
Weights			
Empty Operating	11,330 kg		
Max Internal Fuel	5,792 kg		
Max Internal + External Fuel	8,708 kg		
Max Warload	6,800 kg		
Typical Takeoff Weight (TTW)	17,717 kg		
Typical Combat Weight (TCW)	14,979 kg		
Typical Landing Weight (TLW)	12,923 kg		
Max Takeoff Weight (MTOW)	23,604 kg		
Loadings			
Wing Loading-TCW	394 kg/sq m		
Thrust/Weight-TCW	1.35 to 1		
Wing Loading-MTOW	621 kg/sq m		
Thrust/Weight-MTOW	1.01 to 1		
Limit Load Factor-TCW	+10.0 g		
Limit Load Factor-MTOW	+7.50 g		

