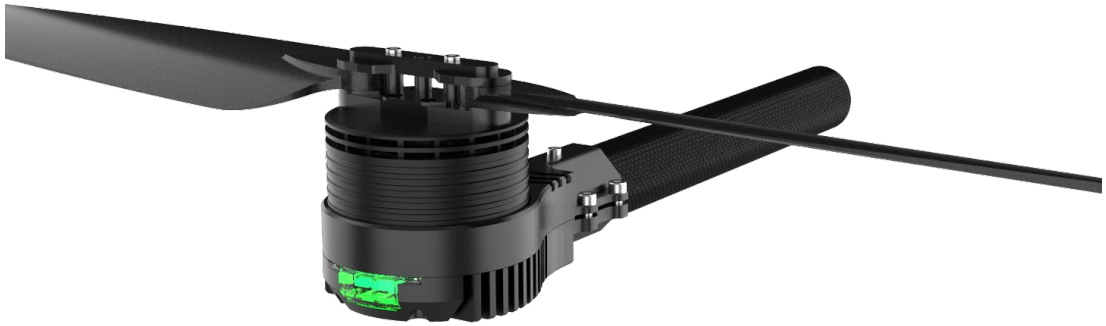
REFLEX® DRIVE

MADE IN INDIA

INTEGRATED PROPULSION UNIT

R6 IPU



FOC

Field oriented control

JSS 55555

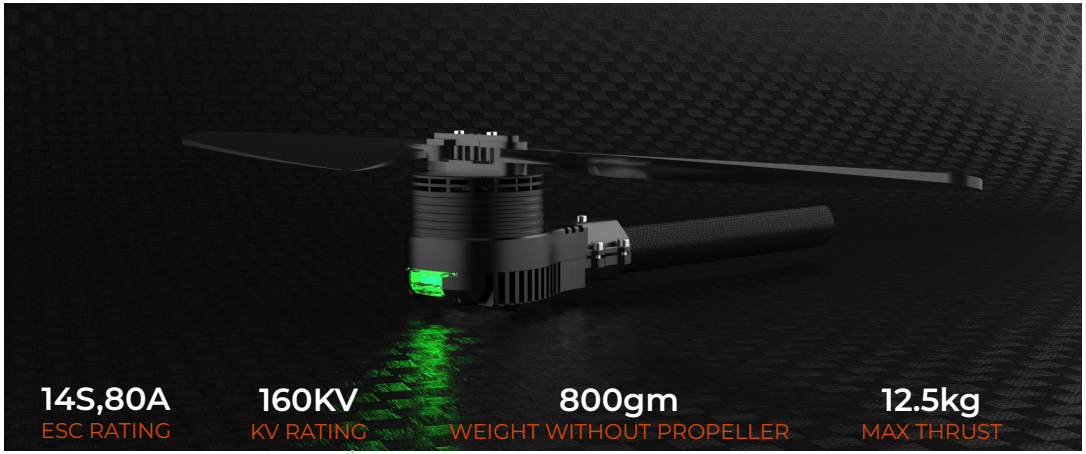
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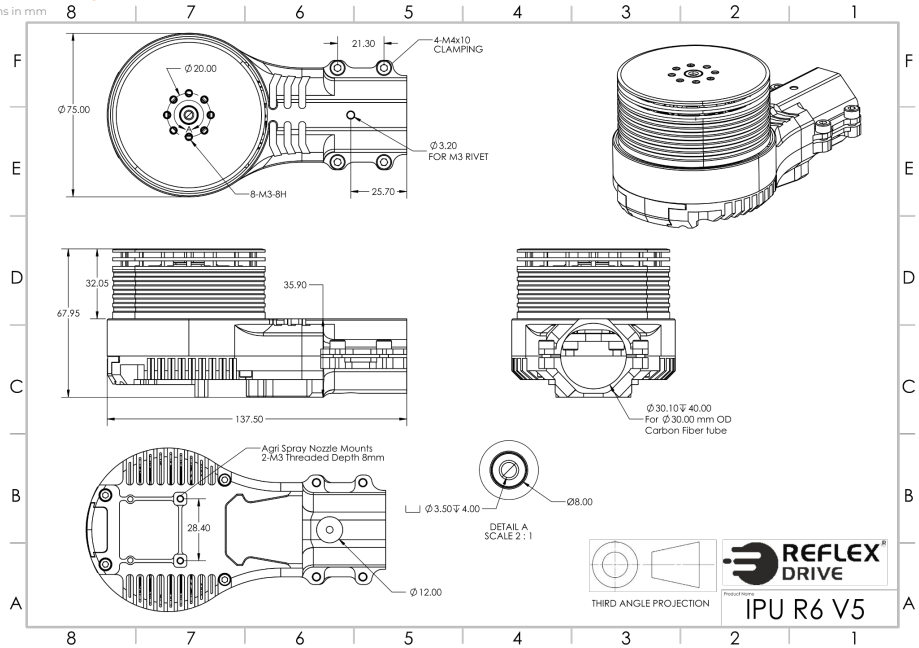
R6 IPU

INTEGRATED PROPULSION UNIT

- R6 IPU is a high-performance Integrated Propulsion Unit (IPU) specifically designed for drone applications.
- This all-in-one solution features a fully enclosed Electronic Speed Controller (ESC), ensuring optimal protection and reliability in demanding environments.
- The R6 IPU combines advanced propulsion technology with robust design, making it ideal for precision surveillance, payload, agriculture, crop monitoring, and spraying tasks.

PRODUCT DRAWING

Note: All dimensions in mm



BASIC PARAMETER

Product name	R6 IPU
Country of Origin	India
Compliant	IPC Class 2
Certification	JSS 55555
	. Mechanical Shock Test
	. Random Vibration Test
	. Resonance Search Test
	. Sinusoidal Vibration Test
Throttle signal frequency	50-450Hz
Weight (without propeller)	800gm
Total weight (incl.propeller)	868gm
Arm tube dia (OD)	30mm
Maximum Thrust	12.5kg
Recommended take-off weight	3.5-5.5kg/rotor (48V sea level)
Max. Power	2650W
operating Temperature	-20~50°C

ESC	FOC 80A V5
Voltage Range	6S-14S (24V-58V) LiPo
Max. Input Current	80A (180 sec) with airflow
PWM Range	1050-1950us (fixed, not programmable)
BEC	No
PWM Input Signal	3.3V-5V
Communication Protocol	PWM, CAN
Telemetry (over CAN)	Voltage, Current, Temperature, Motor RPM, Fault status

ESC	FOC 80A V5
Power Leads (AWG & Length)	12AWG, 200°C & 1 mtr.
ESC Signal Control lead	22 AWG, 2-wire JR (W-B)
ESC Telemetry lead	22 AWG, 2-wire JR (R-B
Protection/Warning	Overcurrent Protection
	Over temperature Indication
	Low Voltage Protection
	Throttle Loss Protection
	Stall Protection

MOTOR	RD6218
Motor KV Rating	160KV
Stator Poles / Magnet Poles	24/28
Motor Dimension	Ø70mm x 38.85mm
Recommended Propeller	RD 2480

Safe Operating Notes

1. Ensure adequate air flow for ESC and motor cooling during continuous high-load operation.
2. Actual Performance may vary depending on altitude, ambient temperature , air density, propeller type, air flow conditions, and installation configuration.
3. Do not exceed rated voltage, current, and throttle limits. Exceeding limits may cause overheating or permanent damage.
4. It is recommended to maintain a 20-30% safety margin below maximum tested values for reliable long term operation.
5. Ensure all electrical connections (battery, motor, and signal wires) are properly secured and insulated. Loose or poor connections may cause voltage fluctuations, overheating, or malfunction of the ESC.

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TEST DATA

Product	ESC	Throttle %	Servo	Power (W)	Current (A)	RPM	Thrust (g)	Efficiency (g/W)	Heat sink Temperature	Motor coil Temperature
R6 IPU	FOC 80A_V5		1050	0.0	0.0	0	0	0.00	33.5°C	33.6°C
		0.0%	1100	0.0	0.0	501	64	0.00	33.7°C	33.4°C
		6.3%	1150	0.0	0.0	501	68	0.00	33.7°C	33.4°C
		12.5%	1200	5.3	0.1	621	113	21.32	33.7°C	33.3°C
		18.8%	1250	10.8	0.2	971	326	30.19	33.7°C	33.1°C
		25.0%	1300	35.8	0.7	1333	686	19.16	33.7°C	33.1°C
Motor	**Propeller**	31.3%	1350	70.0	1.3	1672	1137	16.24	33.6°C	33.0°C
RD 6218	RD 2480	37.5%	1400	120.0	2.3	2021	1692	14.10	33.5°C	33.0°C
		43.8%	1450	194.0	3.7	2371	2396	12.35	33.5°C	33.0°C
		50.0%	1500	301.0	5.8	2709	3155	10.48	33.4°C	33.2°C
		56.3%	1550	429.0	8.3	3058	3964	9.24	33.4°C	33.6°C
		62.5%	1600	578.0	11.2	3415	4967	8.59	33.3°C	34.1°C
Power Source	**KV**	68.8%	1650	784.0	15.3	3763	6051	7.72	33.3°C	34.5°C
48V-DC Supply	160KV	75.0%	1700	1016.0	19.9	4116	7227	7.11	33.4°C	35.6°C
		81.3%	1750	1321.0	26.2	4459	8473	6.41	33.5°C	37.8°C
		87.5%	1800	1657.0	33.0	4817	9775	5.90	33.7°C	38.9°C
		93.8%	1850	2081.0	41.9	5169	11089	5.33	33.9°C	41.4°C
		100.0%	1900	2651.0	54.0	5556	12592	4.75	34.1°C	44.3°C
			1950	2610.0	53.2	5546	12574	4.82	34.7°C	53.0°C
		AFTER TURN OFF POWER SUPPLY							**39°C**	**85.5°C**

The above test has been performed at an altitude of 123 m above from sea level. The ambient temperature was 35°C

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