

N116HR Weight & Balance Data

Max Gross Weight (takeoff):	3100.00 lbs
Max Gross Weight (landing):	2950.00 lbs
Basic Empty Weight:	1933.79 lbs
Empty Weight Moment:	74.89 in
Useful Load:	1166.21 lbs
Center of Gravity [33"(40) -46" aft]	38.73 in
Fuel (Total / Usable)	92 / 88 U.S. gal

Aircraft Weight and Balance Calculation	Weight lbs	Moment lb-in/1000
1. Basic Empty Weight (includes unusable fuel and full oil)	1933.79	74.89
2. Usable Fuel (at 6 lbs / gal) Standard tanks (88 gal max) Reduced fuel	528	24.6
3. Pilot and Front Passenger (station 32 to 50)		
4. Second Row Passengers (station 65 to 82)		
5. Baggage Area "A" (station 82 to 109) 120 lbs maximum*		
6. Baggage Area "B" (station 109 to 124) 80 lbs maximum*		
7. Baggage Area "C" (station 124 to 134) 80 lbs maximum*		
8. Ramp Weight and Moment (3110 lbs maximum)		
9. Fuel allowance for engine start, taxi and runup		
10. Takeoff Weight & Moment (3100 lbs maximum)		
11. Locate point on the Center of Gravity Moment Envelope		

The maximum allowable combined weight capacity for baggage areas A, B, and C is 200 lbs
The maximum allowable combined weight capacity for baggage areas B and C is 80 lbs

Time, Fuel and Distance to Climb

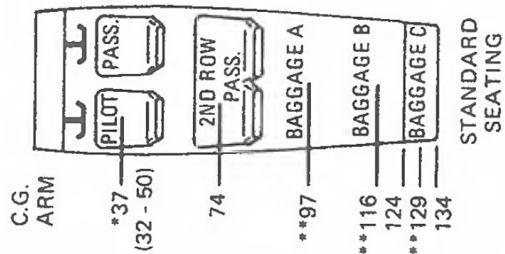
3100 lbs, Flaps Up, 2400 RPM, Full Throttle, Mixture Rich, Cowl Flaps Open, Standard Temperature, Zero Wind
Increase time, fuel & distance by 10% for each 10° above Standard Temp

PRESS ALT (FT)	Temp °C	Climb Speed (KIAS)	Rate of Climb (FPM)	From Sea Level			
				Time (Min)	Fuel Used (Gal)	Distance (NM)	
2000	11	90	540	4	1.0	6	
4000	7	90	540	7	2.1	11	
6000	3	90	410	11	3.2	17	
8000	-1	90	395	16	4.5	25	
10,000	-5	90	285	22	5.1	36	
2000	11	V _y	80	760	2	0.8	3
4000	7		78	660	5	1.7	7
6000	3		77	555	9	2.7	12
8000	-1		76	455	13	3.9	18
10,000	-5		75	380	18	5.3	25

Maximum Rate of Climb (V_y)

3100 lbs, Flaps Up, 2400 RPM, Full Throttle, Mixture Rich, Cowl Flaps Open, Zero Wind

PRESS ALT (FT)	Climb Speed (KIAS)	Rate of Climb (FPM)			
		-20°C	0°C	20°C	40°C
S.L.	81	1010	925	845	765
2000	80	885	805	730	650
4000	78	760	685	610	540
6000	77	640	570	495	425
8000	76	520	450	380	310
10,000	75	405	335	255	---
12,000	73	285	220	155	---
14,000	72	170	105	---	---



* Pilot or passenger center of gravity on adjustable seats positioned for average occupant. (Numbers in parentheses indicate forward and aft limits of occupant center of gravity range)

** Arms measured to the center of the areas shown.

The usable fuel C.G. arm is located at station 46.5

The Aft baggage wall (-station 134) can be used as a convenient interior reference point for determining the location of baggage area fuselage stations

Cessna 182R Skylane Performance

Current as of August 2019

For Reference Only
The POH is the Source Document.

REDPAW

AVIATION

LIMITED

Required Documents

- Airworthiness Certificate (displayed)
- FAA Registration (current) & State Registration (Ohio)
- FCC Radio Station License (international flights)
- Pilot's Operating Handbook & Placarded Op Limits
- Weight and Balance
- DHS User Fee Window Decal (international flights)

Required Inspections:

- (IFR) VOR operationally checked w/in prior 30 days
- (IFR) Tested & inspected within prior 24 months:
 - Static pressure system
 - Altimeter instrument
 - Automatic pressure altitude reporting system
- Tested & inspected within prior 12 calendar months:
 - ELT operation (batteries replaced at 50% life)
 - Aircraft annual inspection
- 100-hour inspection required if flight is for hire

VFR Minimum Equipment List

- Airspeed Indicator
 - Altimeter
 - Magnetic direction indicator
 - Tachometer for each engine
 - Oil pressure gauge for each engine w/pressure system
 - Temperature gauge for each liquid-cooled engine
 - Oil temperature gauge for each air-cooled engine
 - Manifold pressure gauge for each altitude engine
 - Fuel gauge indicating the quantity of fuel in each tank
 - Landing gear position indicator (if retractable)
 - Red or White Anti-collision light
 - Seat belt for each occupant over 2 years of age
 - Shoulder harness for each front seat
 - Emergency locator transmitter
- At night:
- Approved position lights
 - Electric landing light (if operated for hire)
 - Adequate source of electrical energy
 - One spare set of fuses or 3 of each kind

IFR Minimum Equipment List

- All VFR minimum equipment plus:
- 2-way radios and navigation system
- Gyroscopic rate of turn indicator
- Slip-skid indicator
- Sensitive altimeter adjustable for barometric pressure
- Clock (with second hand)
- Generator or alternator
- Gyroscopic pitch & bank indicator (artificial horizon)
- Gyroscopic direction indicator

TAKEOFF REJECTION – max braking on dry, level pavement
(Add/subtract 10% for each 9kts head/tail wind +15% on grass)
Press T/O Roll 5 sec LDG Roll total dist req
Alt 0°C 30°C reaction 0°C 30°C 0°C 30°C
1000 785 975 + 500 + 580 645 = 1865 2120
5000 1125 1400 + 500 + 670 745 = 2295 2645

PRESS ALT 4000 FT (see POH for other alt)	CRUISE PERFORMANCE									
	3100 lbs, Cowl Flaps Closed, Mixture leaned									
	20°C BELOW STD TEMP -9°C / 16°F			STANDARD TEMP 11°C / 52°F			20°C ABOVE STD TEMP 31°C / 88°F			
RPM	MP	% BHP	KTAS	GPH	% BHP	KTAS	GPH	% BHP	KTAS	GPH
2400	22	--	--	--	76	137	13.0	73	138	12.5
	21	74	133	12.6	71	134	12.1	69	134	11.7
	20	69	129	11.8	66	130	11.3	64	130	11.0
	19	64	125	10.9	62	126	10.6	60	126	10.2
2300	23	--	--	--	76	138	13.1	74	139	12.6
	22	75	133	12.8	72	134	12.3	70	135	11.9
	21	70	130	12.0	68	131	11.5	65	131	11.2
	20	66	126	11.2	63	127	10.8	61	127	10.4
2200	23	75	133	12.8	72	134	12.3	70	135	11.9
	22	70	130	12.0	68	131	11.6	66	131	11.2
	21	66	127	11.3	64	127	10.9	61	127	10.5
	20	62	123	10.5	59	123	10.2	57	123	9.8
2100	23	70	130	11.9	67	131	11.5	65	131	11.1
	22	66	126	11.2	63	127	10.8	61	127	10.4
	21	62	123	10.5	59	123	10.1	57	123	9.8
	20	57	119	9.8	55	119	9.5	53	118	9.3
	19	53	114	9.2	51	114	8.9	50	113	8.7
	18	49	109	8.6	47	108	8.3	46	106	8.1
17	45	103	8.0	43	101	7.8	42	100	7.6	

TAKEOFF DISTANCE

- Short field technique used (Flaps 20°, 2400 RPM, Brakes held until power set, Cowl Flaps Open) on Paved, Level, Dry Runway with zero wind.
- Prior to takeoff from fields above 5000 feet elevation, the mixture should be leaned to give maximum power in a full throttle, static runup.
- Decrease distances 10% for each 9 kts headwind; increase distances by 10% for each 2 kts of tailwind.
- Where distance value has been deleted, climb performance after lift-off is <150 fpm at takeoff speed.
- For operation on a dry, grass runway, increase distances by 15% of the "ground roll" figure.

Weight (lbs)	TAKEOFF SPEED (KIAS)		PRESS ALT (FT)	0°C 32°F		10°C 50°F		20°C 68°F		30°C 86°F		40°C 104°F	
	LIFT OFF	AT 50 FT		GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS
				3100	50	59	S.L.	720	1365	775	1465	835	1570
			1000	785	1490	845	1600	910	1720	975	1845	1045	1980
			2000	860	1635	925	1760	995	1890	1065	2035	1140	2185
			3000	940	1800	1010	1940	1085	2090	1165	2255	1250	2430
			4000	1025	1990	1105	2150	1190	2320	1275	2510	1370	2715
			5000	1125	2210	1215	2395	1305	2595	1400	2815	1505	3060
			6000	1235	2470	1330	2685	1435	2925	1540	3190	1655	3490
			7000	1360	2780	1465	3040	1580	3330	1700	3665	---	---
			8000	1500	3170	1615	3485	1740	3855	---	---	---	---
2800	48	56	S.L.	575	1080	615	1155	660	1235	710	1320	760	1410
			1000	625	1175	670	1260	720	1350	770	1440	825	1540
			2000	680	1285	730	1375	785	1475	840	1580	900	1690
			3000	740	1405	800	1505	855	1615	920	1735	985	1860
			4000	810	1540	870	1655	935	1780	1005	1910	1075	2050
			5000	885	1695	955	1825	1025	1965	1100	2115	1180	2280
			6000	970	1875	1045	2025	1125	2185	1210	2355	1295	2545
			7000	1070	2085	1150	2225	1235	2440	1330	2640	1425	2865
8000	1175	2330	1265	2525	1360	2745	1465	2990	1570	3265			
2500	45	53	S.L.	445	845	475	900	510	960	545	1020	585	1085
			1000	485	915	520	975	555	1040	595	1110	635	1185
			2000	525	995	565	1060	605	1135	650	1210	695	1290
			3000	570	1080	615	1155	660	1235	705	1320	755	1410
			4000	625	1180	670	1265	720	1350	770	1445	825	1545
			5000	680	1290	735	1385	790	1480	845	1590	905	1700
			6000	745	1415	805	1520	860	1630	925	1750	990	1875
			7000	820	1560	880	1675	945	1800	1015	1935	1085	2080
8000	900	1725	965	1855	1040	2000	1115	2155	1195	2320			

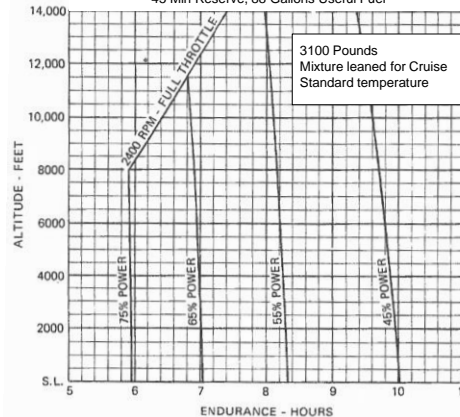
LANDING DISTANCE

- Short field technique used (Flaps full, Power off, Max braking) on Paved, Level, Dry Runway with zero wind.
- Decrease distances 10% for each 9 knots headwind. For operation with tailwinds up to 10 knots, increase distances by 10% for each 2 knots.
- For operation on a dry, grass runway, increase distances by 40% of the "ground roll" figure.
- If landing with flaps up is necessary, increase approach speed by 10 KIAS and allow for 40% longer distances.

Weight (lbs)	SPEED AT 50 FT (KIAS)	PRESS ALT (FT)	0°C 32°F		10°C 50°F		20°C 68°F		30°C 86°F		40°C 104°F	
			GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS	GRND ROLL (FT)	TOTAL FT TO CLEAR 50 FT OBS
			2950	61	S.L.	560	1300	580	1335	600	1365	620
		1000	580	1335	600	1365	620	1400	645	1440	665	1475
		2000	600	1370	625	1405	645	1440	670	1480	690	1515
		3000	625	1410	645	1445	670	1485	695	1525	715	1560
		4000	650	1450	670	1485	695	1525	720	1565	740	1600
		5000	670	1485	695	1525	720	1565	745	1610	770	1650
		6000	700	1530	725	1575	750	1615	775	1660	800	1700
		7000	725	1575	750	1615	780	1665	805	1710	830	1750
		8000	755	1625	780	1665	810	1715	835	1760	865	1805

ENDURANCE PROFILE

45 Min Reserve, 88 Gallons Useful Fuel



RANGE PROFILE

45 Min Reserve, 88 Gallons Useful Fuel

