

**ZPPP AD 2.1 机场地名代码和名称 Aerodrome location indicator and name**

ZPPP-昆明/长水 KUNMING/Changshui

**ZPPP AD 2.2 机场地理位置和管理资料 Aerodrome geographical and administrative data**

1	机场基准点坐标及其在机场的位置 ARP coordinates and site at AD	N25°06.3' E102°56.5' On CL of RWY04/22, 2000m inside THR04
2	方向、距离 Direction and distance from city	073°GEO, 23.9km from the city center(Dongfeng square)
3	标高/参考气温 Elevation / Reference temperature	2103.5m/25.3℃(MAY)
4	机场标高位置/大地水准面波幅 AD ELEV PSN / geoid undulation	Touch-down zone end of RWY03 (490m inside DTHR03)/-
5	磁差/年变率 MAG VAR/ Annual change	1°W/-
6	机场管理部门、地址、电话、传真、AFS、电子邮箱、网址 AD administration, address, telephone,telefax, AFS, E - mail, website	Kunming Changshui International Airport CO.LTD Kunming Changshui International Airport, GuanDu district, Kunming city, Yunnan province, China Post code:650211 TEL:86-871-67091111 FAX:86-871-67092222 Website:www.ynairport.com
7	允许飞行种类 Types of traffic permitted(IFR / VFR)	IFR/VFR
8	机场性质/飞行区指标 Military or civil airport &Reference code	CIVIL/4F
9	备注 Remarks	Nil

**ZPPP AD 2.3 工作时间 Operational hours**

1	机场当局(机场开放时间) AD Administration (AD operational hours)	H24
2	海关和移民 Customs and immigration	HS or O/R
3	卫生健康部门 Health and sanitation	HS or O/R

4	航行情报服务讲解室 AIS Briefing Office	H24
5	空中交通服务报告室 ATS Reporting Office (ARO)	H24
6	气象讲解室 MET Briefing Office	H24
7	空中交通服务 ATS	H24
8	加油 Fuelling	H24
9	地勤服务 Handling	H24
10	保安 Security	H24
11	除冰 De-icing	HO
12	备注 Remarks	Nil

### ZPPP AD 2.4 地勤服务和设施 Handling services and facilities

1	货物装卸设施 Cargo-handling facilities	Lift platform vehicle, conveyor vehicle, fork, container carrier, baggage trailer, cargo carrier, cargo tow-tractor
2	燃油/滑油牌号 Fuel/oil types	Nr.3 jet fuel/lubricating oil.254. H2197.2389
3	加油设施/能力 Fuelling facilities/capacity	Fueling vehicle, hydrant dispenser, multi-function vehicle, cleaning tanker. Fueling capacity: 278 L/s Apron pipeline gas well: bolt, high exhaust, low drainage.
4	除冰设施 De-icing facilities	De-icing fluid (FCY-1A/FCY-2, NW-056A, KHF-1A) De-icers, de-icing apron, snow fluid truck
5	过站航空器机库 Hangar space for visiting aircraft	Nil
6	过站航空器的维修设施	Line maintenance available for various types of aircraft on request, spare parts and other maintenance service are available with pre-arrangement.

	Repair facilities for visiting aircraft	
7	备注 Remarks	Tractor, ground air supply unit, power unit

**ZPPP AD 2.5 旅客设施 Passenger facilities**

1	宾馆 Hotels	At AD and near AD
2	餐馆 Restaurants	At AD
3	交通工具 Transportation	Passenger's coaches, buses, taxis, subways
4	医疗设施 Medical facilities	First aid at AD, hospital near AD
5	银行和邮局 Bank and Post Office	At AD
6	旅行社 Tourist Office	At AD
7	备注 Remarks	Nil

**ZPPP AD 2.6 援救与消防服务 Rescue and fire fighting services**

1	机场消防等级 AD category for fire fighting	CAT 9
2	援救设备 Rescue equipment	Fire fighting facilities: primary foam tender, heavy-duty water tank, rapid intervention vehicle, heavy foam tender, dry-chemical tender, fire fighting command car, illumination truck, medicament supply truck, rescue tender, logistics truck; Rescue equipments: rescue cushion, rescue rod (hydraulic), manual hydraulic expander, electric hydraulic expander, cutter, chain saw, smoke ventilator, combustible gas detector.
3	搬移受损航空器的能力 Capability for removal of disabled aircraft	MTWA up to 120t Mobile surface, trailer, uplift air cushion, fork truck, rack
4	备注 Remarks	Nil

**ZPPP AD 2.7 可用季节- 扫雪 Seasonal availability-clearing**

1	可用季节及扫雪设备类型 Types of clearing equipment	All seasons Multi-functional snow ploughs, snow pusher, snow scraper, water cart, sweeper
2	扫雪顺序 Clearance priorities	RWY03/21→TWY E, F and the TWYs connected with them→TWY R, Q→RWY04/22→TWY C, D and the TWYs connected with them. Apron cleared at the same time.
3	备注 Remarks	Nil

### ZPPP AD 2.8 停机坪、滑行道及校正位置数据 Aprons, taxiways and check locations data

1	停机坪道面和强度 Apron surface and strength	Surface:	CONC
		Strength:	PCN 106/R/B/W/T(105-107, 129, 134, 135, 140, 163, 164, 312, 313, 322, 323, 329, 330, 702, 708, 708L, 708R, 709, 720, 721, L5) PCN 98/R/B/W/T(518-527, 519L, 519R, 521L, 521R, 522L, 522R, 523L, 523R, 524L, 524R, 525L, 525R, 526L, 526R, 527L, 527R, 801-815, L816) PCN 85/R/B/W/T(101, 103, 104, 108-110, 112-116, 126, 128, 130-133, 136-139, 141, 142, 153-162, 165-167, 311, 314, 318, 321, 705, 706, 722-724, L4) PCN 75/R/B/W/T(102, 111, 117-125, 127, 143-152, 168, 315-317, 324-328, 701, 703, 704, 707, 710-719, 722A, 722B) PCN 67/R/B/W/T(501-508, 511-517, 531-536, 539-544) PCN 65/R/B/W/T(545-554, S202-S219) PCN 60/R/B/W/T(591-593)
2	滑行道宽度、道面和强度 Taxiway width, surface and strength	Width:	50m: C2(BTN C & D), C9(BTN C & D), D3(BTN C & D), D4(BTN C & D), D6-D9(BTN C & D), J(BTN C & D), Q(BTN C & D), R(BTN C & D), S(BTN C & D), U(BTN C & D); 49.5m: L(BTN C & D), P(BTN C & D); 49m: N(BTN C & D); 48m: C2( W of D), D3(W of D), E1(BTN E & F), E3-E6(BTN E & F), F9(BTN E & F), H1-H4(BTN R & Q), J(W of D), Q(BTN E & F), R(BTN E & F), S(BTN E & F), W(BTN E & F); 47.5m: L(BTN E & F), N(BTN E & F); 47m: C1(BTN C & D), F2(BTN E & F), P(BTN E & F); 46.5m: K(BTN E & F); 44m: C2(E of C), C9(E of C), J(E of C), N(BTN D & H1); 43.5m: P(BTN D & H1);

			<p>39m: F2( W of F), F9(W of F), K(BTN H4 &amp; E), L(BTN H4 &amp; E), Q(BTN D &amp; H1), Q(BTN H4 &amp; E);</p> <p>37.5m: C10(BTN C &amp; D);</p> <p>36m: R(BTN D &amp; H1);</p> <p>35.5m: F1(BTN E &amp; F), F10(BTN E &amp; F);</p> <p>35m: E4(E of E), R(BTN H4 &amp; E), S(BTN D &amp; H1), U(BTN D &amp; H1);</p> <p>34.5m: C1(E of C), C10(E of C);</p> <p>33.5m: S(BTN E &amp; H4);</p> <p>31.5m: H1(S of R);</p> <p>31m: E1(BTN H4 &amp; E), F1(W of F), F10(W of F), F2(E of E), N(BTN H4 &amp; E), P(BTN H4 &amp; E);</p> <p>30m: D4( W of D), H1(BTN Q &amp; P);</p> <p>29.5m: E3(E of E);</p> <p>28.5m: S(BTN H2 &amp; H3);</p> <p>28m: D6(BTN D &amp; H1), P(BTN H1 &amp; H2);</p> <p>27.5m: H4(S of R);</p> <p>25m: C, C3, C4, C7, C8, D, H2(BTN Q &amp; P), L(BTN D &amp; H1), P(BTN H2 &amp; H3), S(BTN H1 &amp; H2), S(BTN H3 &amp; H4);</p> <p>24.5m: H4(BTN Q &amp; P);</p> <p>23m: C5, C6, E, F, F3-F8, H1(N of P), H2(BTN R &amp; S), H3(BTN Q &amp; P), H3(BTN R &amp; S), H4(N of P), M, N(BTN H1 &amp; H4), P(BTN H3 &amp; H4), Q(BTN H1 &amp; H4), R(BTN H1 &amp; H4)</p>
		Surface:	CONC
		Strength:	<p>PCN 113/R/B/W/T(D(BTN Q &amp; D4), E(N of Q), H1(N of Q), H4(N of Q), P)</p> <p>PCN 111/R/B/W/T(E(S of Q), F, F1, F2(W of E), F3-F10, H1(S of Q), H2, H3, H4(S of Q), Q, R, S)</p> <p>PCN 110/R/B/W/T(C, C1-C10, D(N of D4, S of Q))</p> <p>PCN 106/R/B/W/T(D3, D4, D6-D9, E3-E6, J, U, W)</p> <p>PCN 98/R/B/W/T(E1, F2(E of E), K, L, N(BTN H1 &amp; C), N(BTN H4 &amp; F))</p> <p>PCN 86/R/B/W/T(M, N(BTN H1 &amp; H4))</p>
3	高度表校正点的位置及其标高 ACL location and elevation	Nil	
4	VOR/INS 校正点	Nil	

	VOR/INS checkpoints	
5	备注 Remarks	Widths of TWY shoulder:  17.5m: C, C1-C10, D, D3, D4, D6(E of D), D7-D9, H1(N of S), H2(N of Q), J, L(E of H1), M(BTN H1&D), N(BTN H1& C), P(E of H3), Q(E of H1), R(E of H1), S(E of H2, W of H3), U(E of D)  10.5m: D6(W of D), E, E1, E3-E6, F, F1-F10, H1(S of S), H2(S of Q), H3, H4, K, L(W of H4), M(BTN H4&E), N(BTN H4& F), P(W of H3), Q(W of H1), R(W of H1), S(BTN H2 & H3),U(W of D), W

### ZPPP AD 2.9 地面活动引导和管制系统与标识 Surface movement guidance and control system and markings

1	航空器机位号码标记牌、滑行道引导线、航空器目视停靠引导系统的使用 Use of aircraft stand ID signs, TWY guide lines and visual docking / parking guidance system of aircraft stands	Taxiing guide lines at all intersections of TWY and RWY. Aircraft stand identification sign board at stands(except stands Nr. 703-709, 517, 518 ,591, 802-807, L816). Parking sign boards are available for aircraft. Visual docking guidance system is available for aircraft stands Nr.101-168, marshaller guidance at other aircraft stands.	
2	跑道和滑行道标志及灯光 RWY and TWY marking and LGT	RWY markings	RWY designation, THR, TDZ, center line, edge line, aiming point
		RWY lights	THR, center line, edge line, RWY end, wing bar,TDZL(for RWY03 & RWY22)
		TWY markings	RWY holding positions, intermediate holding positions, center line, edge line, shoulders, information signs, instruction signs
		TWY lights	Center line, edge line, RWY guard lights, reflect sticks, rapid exit taxiway indicator, TWY intermediate holding position lights
3	停止排灯 Stop bars	Stop bars at C1 for RWY22, stop bars at F9 & F10 for RWY03	
4	备注 Remarks	Service vehicle lane edge line for crossing TWY, service vehicle lane line, service vehicle orientation arrow, give-way line.	

### ZPPP AD 2.10 机场障碍物 Aerodrome obstacles

Obstacles within a circle with a radius of 15km centered on ARP

序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
1	MT	005	4774	2130.6	RWY03 Take-off flight path	
2	MT	008	4642	2122.8	RWY03 Take-off flight path	
3	MT	063	14838	2257		
4	MT	069	14130	2418	RWY04 RNAV departure	
5	MT	070	13308	2427		
6	*Power TWR	073	12425	2364.4		
7	*Power TWR	073	12595	2400.7		
8	*Power TWR	073	12771	2443.6		
9	*Power TWR	073	13103	2431.9		
10	*Power TWR	074	11711	2347.5		
11	*Power TWR	074	12086	2333.5		
12	*Power TWR	074	12308	2378.2		
13	*Power TWR	074	13336	2514.6		
14	Contour line	074	13384	2480	RWY04 conventional departure	
15	MT	075	7171	2231		
16	*Power TWR	075	11102	2343.4		
17	*Power TWR	075	11394	2336.1		
18	*Power TWR	076	10649	2361.3		
19	MT	076	13108	2569		
20	*Power TWR	077	10417	2360.6		
21	MT	078	6516	2226		
22	*Power TWR	078	9904	2368.8		
23	*Power TWR	079	8665	2314.5		

Obstacles within a circle with a radius of 15km centered on ARP						
序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
24	*Power TWR	079	8864	2340.3		
25	*Power TWR	079	9055	2329.8		
26	*Power TWR	079	9759	2338.4		
27	MT	080	12993	2520		
28	MT	081	8883	2300		
29	*Power TWR	082	8860	2363.8		
30	Iron TWR	083	4681	2207		
31	Iron TWR	083	5120	2201		
32	*Power TWR	085	8537	2323.6		
33	MT	085	13740	2480		
34	Iron TWR	087	4229	2221		
35	*Power TWR	089	8678	2328.1		
36	*Power TWR	089	9147	2439.8		
37	MT	089	10086	2440.0		
38	*Power TWR	090	10004	2518.5		
39	*Power TWR	091	7737	2348.1		
40	TWR	094	2364	2176.0		
41	MT	094	6452	2440.8		
42	Iron TWR	095	4022	2240		
43	MT	097	4003	2251.9		
44	*Power TWR	097	9085	2402.2		
45	MT	097	9665	2520		
46	Iron TWR	100	3567	2241		
47	*Power TWR	103	9082	2544.1		
48	MT	104	7314	2400		



Obstacles within a circle with a radius of 15km centered on ARP						
序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
49	MT	105	9425	2520		
50	*Power TWR	107	9083	2562.1		
51	Iron TWR	109	3506	2250		
52	MT	113	6311	2520.0		
53	*Power TWR	114	9160	2522.9		
54	Iron TWR	116	3188	2255		
55	MT	116	6104	2581.3		
56	MT	121	7373	2540		
57	MT	125	6029	2560		
58	Iron TWR	127	3092	2268		
59	MT	127	6034	2580		
60	*Power TWR	128	8642	2548.8		
61	MT	130	6998	2648		
62	*Power TWR	136	9464	2558.5		
63	MT	136	10217	2680		
64	MT	138	6863	2540		
65	MT	138	10501	2730.1		
66	*Power TWR	140	9983	2625.1		
67	MT	141	5842	2460		
68	MT	145	5967	2500		
69	MT	145	11000	2640		
70	MT	148	6324	2480		
71	*Power TWR	149	10585	2572.2		
72	Iron TWR	150	3490	2235		
73	MT	151	3674	2174.6		

Obstacles within a circle with a radius of 15km centered on ARP						
序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
74	MT	151	6617	2460		
75	Iron TWR	155	3508	2235.6		
76	Iron TWR	157	4557	2225		
77	Iron TWR	158	3664	2243		
78	Iron TWR	158	3816	2254		
79	*Power TWR	159	11323	2400.1		
80	MT	161	13405	2440		
81	MT	162	5389	2420		
82	Iron TWR	163	3666	2214		
83	Iron TWR	164	5148	2451.8		
84	MT	165	7863	2460		
85	MT	165	13704	2520		
86	Iron TWR	166	4061	2203		
87	*Power TWR	167	12901	2278.9		
88	*Power TWR	169	13894	2554.9		
89	Iron TWR	172	4389	2197		
90	MT	173	5971	2334		
91	MT	175	14084	2460		
92	Iron TWR	178	4655	2175		
93	MT	178	9461	2360		
94	MT	179	6115	2240		
95	MT	180	12256	2400		
96	Iron TWR	183	4970	2134		
97	MT	186	12743	2380		
98	MT	192	13583	2340		

Obstacles within a circle with a radius of 15km centered on ARP						
序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
99	MT	205	10678	2265		
100	MT	207	8164	2147		
101	MT	208	9332	2194.4		
102	MT	242	13451	2215.5		
103	MT	263	10139	2300		
104	*Chimney	266	3944	2153.6		
105	MT	268	9778	2280		
106	MT	275	11859	2300		
107	MT	285	14895	2300		
108	MT	291	11879	2300		
109	*Control TWR	293	1065	2208.2		
110	Iron TWR	295	3597	2161.5		
111	MT	300	5008	2280		
112	*Radar	309	5345	2376.5		
113	MT	310	4527	2260		
114	MT	315	4876	2280		
115	MT	318	4649	2240		
116	MT	322	7827	2320		
117	MT	324	6884	2280		
118	MT	326	4547	2200		
119	MT	327	6803	2276		
120	MT	327	9007	2374		
121	MT	338	8990	2300		
122	MT	342	13334	2522.2		
123	MT	343	8749	2280		

Obstacles within a circle with a radius of 15km centered on ARP						
序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
124	MT	345	5528	2186		
125	MT	346	13241	2476		
126	MT	352	13878	2420		
Others:						
No significant obstacles in the take-off flight path areas of RWY 04/21/22.						

Obstacles between two circles with the radius of 15km and 50km centered on ARP						
序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
1	MT	001	114248	3960	MVA sector	
2	MT	003	46863	2801		
3	MT	006	49254	2881		
4	MT	010	58342	2997	MVA sector	
5	MT	011	28994	2328		
6	MT	011	36912	2820		
7	MT	016	40393	2740		
8	MT	017	82982	3295	MVA sector	
9	Contour line	017	83187	3180	MVA sector	
10	MT	044	35617	2627		
11	MT	063	16881	2344		
12	MT	069	15106	2340		
13	MT	084	16478	2400		
14	MT	086	15452	2320		

Obstacles between two circles with the radius of 15km and 50km centered on ARP						
序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
15	MT	090	16493	2480		
16	MT	094	15143	2300		
17	MT	095	87726	2687	MVA sector	
18	MT	099	16735	2420		
19	MT	106	16302	2400		
20	MT	114	16401	2300		
21	MT	117	19686	2400		
22	MT	119	19619	2400		
23	MT	120	17333	2340		
24	MT	181	38015	2741		
25	MT	188	38001	2801	MVA sector	
26	MT	194	46857	2620	MVA sector	
27	MT	196	44856	2440		
28	MT	234	40263	2421	MVA sector	
29	MT	239	75861	2618	MVA sector	
30	MT	241	35949	2501		
31	MT	262	37239	2480		
32	MT	263	42374	2501		
33	MT	275	46851	2581		
34	MT	279	47957	2600		
35	MT	290	33475	2481		
36	MT	294	34248	2581		
37	MT	295	23989	2501		
38	MT	301	22700	2521		
39	MT	302	18823	2320		

Obstacles between two circles with the radius of 15km and 50km centered on ARP						
序号 Serial Nr.	障碍物类型(*代表 有灯光) Obstacle type(*Lighted)	磁方位 BRG (MAG)(degree)	距离 DIST(m)	海拔高度 Elevation(m)	影响的飞行程序及起飞 航径区 Flight procedure / take - off flight path area affected	备注 Remarks
40	MT	304	23020	2581		
41	MT	304	44641	2641		
42	MT	308	44107	2660		
43	MT	311	19192	2340		
44	MT	311	28598	2440		
45	MT	313	18440	2380		
46	MT	318	19600	2340		
47	MT	326	39184	2580		
48	MT	329	40113	2640		
49	MT	342	15222	2360		
50	MT	345	38387	2501		
51	MT	352	27939	2678		
52	MT	353	30980	2780		
53	MT	356	28815	2821		
54	MT	358	116187	4345	MVA sector	
55	MT	359	28918	2826	RWY03 conventional departure MVA sector	
56	MT	360	30627	2670		
57	MT	360	32749	2773		
Others:						
Nil						

**ZPPP AD 2.11 提供的气象信息、机场观测与报告****Meteorological information provided & aerodrome observations and reports**

1	相关气象台的名称 Associated MET Office	Yunnan MET center Office of CAAC
---	-----------------------------------	----------------------------------

2	气象服务时间；服务时间以外的责任气象台 Hours of service, MET Office outside hours	H24
3	负责编发 TAF 的气象台；有效时段；发布间隔 Office responsible for TAF preparation, Periods of validity; Interval of issuance	Yunnan MET center Office of CAAC; 9h for FC, 24h for FT; -
4	趋势预报发布间隔 Issuance interval of trend forecast	1h
5	所提供的讲解/咨询服务 Briefing/consultation provided	P, T
6	飞行文件及其使用语言 Flight documentation, Languages used	Chart, International MET Codes, Abbreviated Plain Language Text Ch, En
7	讲解/咨询服务时可利用的图表和其它信息 Charts and other information available for briefing or consultation	Synoptic charts, significant weather charts, upper W/T Charts, satellite and radar material, AWOS real-time data
8	提供信息的辅助设备 Supplementary equipment available for providing information	Fax, MET Service Terminal
9	提供气象情报的空中交通服务单位 ATS units provided with information	ACC, APP, TWR
10	观测类型与频率/自动观测设备 Type & frequency of observation/Automatic observation equipment	Hourly plus special observation/Yes
11	气象报告类型及所包含的补充资料 Type of MET Report & supplementary information included	METAR, SPECI, TEND
12	观测系统及位置 Observation System & Site(s)	RVR EQPT A: 115m W of RWY03/21 CL, 890m inward THR03; B: 115m W of RWY03/21 CL, 2000m inward THR21; C: 115m W of RWY03/21 CL, 330m inward THR21; D: 115m E of RWY04/22 CL, 350m inward THR04; E: 115m E of RWY04/22 CL, 2250m inward THR04; F: 115m E of RWY04/22 CL, 830m inward THR22.

		<p>SFC wind sensors</p> <p>RWY03: 120m W of RWY03/21 CL, 880m inward THR03;</p> <p>RWY04: 120m E of RWY04/22 CL, 340m inward THR04;</p> <p>RWY03/21 Center1: 120m W of RWY03/21 CL, 1730m inward THR03;</p> <p>RWY03/21 Center2: 120m W of RWY03/21 CL, 2000m inward THR21;</p> <p>RWY04/22 Center: 120m E of RWY04/22 CL, 2250m inward THR04;</p> <p>RWY21: 120m W of RWY03/21 CL, 350m inward THR21;</p> <p>RWY22: 120m E of RWY04/22 CL, 850m inward THR22.</p> <p>Ceilometer</p> <p>A: 120m W of RWY03/21 CL, 330m inward THR21;</p> <p>B: 120m W of RWY03/21 CL, 860m inward THR03;</p> <p>C: 60m W of RWY04/22 CL, 310m outside THR22;</p> <p>D: 120m E of RWY04/22 CL, 320m inward of THR04.</p>
13	<p>气象观测系统的工作时间</p> <p>Hours of operation for meteorological observation system</p>	H24
14	<p>气候资料</p> <p>Climatological information</p>	Climatological tables AVBL
15	<p>其他信息</p> <p>Additional information</p>	MET office TEL: 86-871-67110667

### ZPPP AD 2.12 跑道物理特征 Runway physical characteristics

跑道号码 Designations RWY NR	真方位和磁方位 TRUE & MAG BRG	跑道长宽 Dimensions of RWY(m)	跑道强度(PCN), 跑道道面/ 停止 道面 RWY strength (PCN), RWY surface / SWY surface	着陆入口坐标及 高程异常 THR coordinates and geoid undulation	跑道入口标高,精密进近 跑道接地带最高标高 THR elevation and highest elevation of TDZ of precision APP RWY
1	2	3	4	5	6
03	038.4 °GEO 039 °MAG	4000×45	110/R/B/W/T (0-295m) CONC 114/F/B/W/T (295-3705m) ASPH		THR2100.5m DTHR2102.6m TDZ2103.5m



			110/R/B/W/T (3705-4000m) CONC/-		
21	218.4 °GEO 219 °MAG	4000×45	110/R/B/W/T (0-295m) CONC 114/F/B/W/T (295-3705m) ASPH 110/R/B/W/T (3705-4000m) CONC/-		THR2098.3m TDZ2099.7m
04	038.4 °GEO 039 °MAG	4500×60	110/R/B/W/T (0-295m) CONC 114/F/B/W/T (295-3705m) ASPH 110/R/B/W/T (3705-4500m) CONC/-		THR2098.7m TDZ2101.7m
22	218.4 °GEO 219 °MAG	4500×60	110/R/B/W/T (0-795m) CONC 114/F/B/W/T (795-4205m) ASPH 110/R/B/W/T (4205-4500m) CONC/-		THR2096.2m DTHR2096.7m TDZ2098.3m
跑道-停止道坡度 Slope of RWY-SWY	停止道长宽 SWY dimensions(m)	净空道长宽 CWY dimensions(m)	升降带长宽 Strip dimensions(m)	无障碍物区 OFZ	跑道端安全区长宽 RWY end safety area dimensions(m)
7	8	9	10	11	12
See AOC	Nil	Nil	4120×300	Nil	240×150

See AOC	Nil	Nil	4120×300	Nil	240×150
See Remark	Nil	Nil	4620×300	Nil	240×150
See Remark	Nil	Nil	4620×300	Nil	240×150
Remark: 1.RWY shoulder: 7.5m on each side. 2.THR03 displaced 540m inwards. THR22 displaced 500m inwards. 3.Distance between RCLs of RWY03/21 and RWY04/22 is 1950m; THR03 is 230m north of THR04. 4.RWY04-22:-0.4% (695m);+0.16% (160m);-0.1% (700m);-0.174% (90m);-0.26% (355m);-0.15% (2115m);-0.24% (385m).					

### ZPPP AD 2.13 公布距离 Declared distances

跑道号码 RWY Designator	可用起飞滑跑距离 TORA(m)	可用起飞距离 TODA(m)	可用加速停止距离 ASDA(m)	可用着陆距离 LDA(m)	备注 Remarks
1	2	3	4	5	6
03	4000	4000	4000	3460	THR displaced 540m inwards
03	3780	3780	3780	3460	FM F9, THR displaced 540m inwards
21	4000	4000	4000	4000	Nil
21	3780	3780	3780	4000	FM F2
04	4500	4500	4500	4500	Nil
04	4280	4280	4280	4500	FM C9
22	4500	4500	4500	4000	THR displaced 500m inwards
22	4000	4000	4000	4000	FM J, THR displaced 500m inwards
22	3780	3780	3780	4000	FM C2, THR displaced 500m inwards
Remarks: Full-length RWY take-off shall apply for ATC clearance in advance.					

### ZPPP AD 2.14 进近和跑道灯光 Approach and runway lighting

跑道 代号 RWY Designator	进近灯 类型、 长度、 强度 APCH LGT type LEN INTST	入口灯 颜色、 翼排灯 THR LGT colour WBAR	目视进近坡 度指示系统( 跑道入口最 低眼高), 精 密进近航道 指示器 VASIS (MEHT) PAPI	接地地带 灯长度 TDZ LGT LEN	跑道中心线灯 长度、间隔、 颜色、强度 RWY Center line LGT LEN, spacing, colour, INTST	跑道边灯长 度、间隔、颜 色、强度 RWY edge LGT LEN, spacing, colour, INTST	跑道末端 灯颜色 RWY end LGT colour	停止道灯 长度、颜 色 SWY LGT LEN, colour
1	2	3	4	5	6	7	8	9
03	PALS CAT II* 900m VRB LIH	GREEN Yes	PAPI LEFT 426m inward displaced THR03 3 °	900m	3460m** spacing 15m	4000m***** spacing 60m	RED	Nil
21	PALS CAT I* 900m VRB LIH	GREEN Yes	PAPI LEFT 429m inward THR21 3 °	Nil	4000m*** spacing 15m	4000m***** spacing 60m	RED	Nil
04	PALS CAT I* 900m VRB LIH	GREEN Yes	PAPI LEFT 413m inward THR04 3 °	Nil	4500m**** spacing 15m	4500m***** spacing 60m	RED	Nil
22	PALS CAT II* 900m VRB LIH	GREEN Yes	PAPI LEFT 437m inward displaced THR22 3 °	900m	4500m**** spacing 15m	4500m***** spacing 60m	RED	Nil
Remarks: APCH LGT of RWY03 start from Displaced THR03. *SFL								

跑道 代号 RWY Designator	进近灯 类型、 长度、 强度 APCH LGT type LEN INTST	入口灯 颜色、 翼排灯 THR LGT colour WBAR LEN INTST	目视进近坡 度指示系统( 跑道入口最 低眼高), 精 密进近航道 指示器 VASIS (MEHT) PAPI	接地地带 灯长度 TDZ LGT LEN	跑道中心线灯 长度、间隔、 颜色、强度 RWY Center line LGT LEN, spacing, colour, INTST	跑道边灯长 度、间隔、颜 色、强度 RWY edge LGT LEN, spacing, colour, INTST	跑道末端 灯颜色 RWY end LGT colour	停止道灯 长度、颜 色 SWY LGT LEN, colour
<p>**up to 2560m WHITE VRB LIH, 2560-3160m RED/WHITE VRB LIH, 3160-3460m RED VRB LIH</p> <p>***up to 3100m WHITE VRB LIH, 3100-3700m RED/WHITE VRB LIH, 3700-4000m RED VRB LIH</p> <p>****up to 3600m WHITE VRB LIH, 3600-4200m RED/WHITE VRB LIH, 4200-4500m RED VRB LIH</p> <p>*****up to 3400m WHITE VRB LIH, 3400-4000m YELLOW VRB LIH</p> <p>*****up to 3900m WHITE VRB LIH, 3900-4500m YELLOW VRB LIH</p>								

### ZPPP AD 2.15 其他灯光, 备份电源 Other lighting, secondary power supply

1	机场灯标/识别灯标位置、特性和工作时间 ABN/IBN location, characteristics and hours of operation	Nil
2	着陆方向标/风向标位置和灯光 LDI/WDI location and LGT	WDI: RWY03:115m W of RCL, 186m S of DTHR; RWY04:98m W of RCL, 410m N of THR; RWY21:115m E of RCL, 355m S of THR; RWY22:98m E of RCL, 410m S of DTHR.
3	滑行道边灯和中线灯 TWY edge and center line lighting	Blue TWY edge line lights/retro-reflective sticks. Green TWY center line lights.
4	备份电源/转换时间 Secondary power supply/switch-over time	CAT I operation: Secondary power supply available (diesel generator), 15sec; CAT II operation: UPS and secondary power supply available (diesel generator), 1sec.
5	备注 Remarks	Nil

### ZPPP AD 2.16 直升机着陆区域 Helicopter landing area

1	TLOF 坐标或 FATO 入口坐标及大地水准面 波幅	Nil
---	--------------------------------	-----

	Coordinates TLOF or THR of FATO Geoid undulation	
2	TLOF 和/或 FATO 标高 (m/ft) TLOF and/or FATO elevation (m/ft)	Nil
3	TLOF 和 FATO 区域范围、道面、强度和标志 TLOF and FATO area dimensions,surface, strength, marking	Nil
4	FATO 的真方位和磁方位 True and MAG BRG of FATO	Nil
5	公布距离 Declared distance available	Nil
6	进近灯光和 FATO 灯光 APP and FATO lighting	Nil
7	备注 Remarks	Nil

**ZPPP AD 2.17 空中交通服务空域 ATS airspace**

名称 Designation	水平范围 Lateral limits	垂直范围 Vertical limits	备注 Remarks
Kunming tower control area	A circuit, 4 arcs with radius 13km centered at centers of all RWY THRs and 4 lines tangential to the adjacent 2 arcs.	SFC-3000m	
Fuel Dumping Area	N2407E10113 - N2333E10007 - N2300E10007 - N2338E10118 - N2407E10113	Above 4000m	
Altimeter setting region and TL/TA	Same as Kunming APP area	TL 6000m TA 5400m 5700m(QNH $\geq$ 1031hPa) 5100m(QNH $\leq$ 979hPa)	

**ZPPP AD 2.18 空中交通服务通信设施 ATS communication facilities**

服务名称 Service Designation	呼号 Call sign	频率 Frequency (MHz)	工作时间 Hours of operation	备注 Remarks
1	2	3	4	5
ATIS		ARR:128.45	H24	D-ATIS available
ATIS		DEP:126.275	H24	D-ATIS available
APP	Kunming Approach	APP01:119.0(125.55)	by ATC	Contact ZPPPAP03 when ZPPPAP01 U/S.
APP	Kunming Approach	APP02:123.8(125.55)	by ATC	Contact ZPPPAP03 when ZPPPAP02 U/S.
APP	Kunming Approach	APP03:120.35(127.9)	H24	
APP	Kunming Approach	APP03:124.25(127.9)	H24	
APP	Kunming Approach	APP04:121.15(126.55)	by ATC	Contact ZPPPAP03 when ZPPPAP04 U/S.
APP	Kunming Approach	APP05:124.25(127.9)	by ATC	Contact ZPPPAP03 when ZPPPAP05 U/S.
APP	Kunming Approach	APP05:120.35(127.9)	by ATC	Contact ZPPPAP03 when ZPPPAP05 U/S.
APP	Kunming Approach	APP06:Nil(Nil)	by ATC	
APP	Kunming Approach	APP07:119.225(Nil)	by ATC	
APP	Kunming Approach	APP08:Nil(Nil)	by ATC	
TWR	Kunming Tower	(E):118.1(118.85)	H24	For RWY04/22
TWR	Kunming Tower	(W):130.6(118.85)	H24	For RWY03/21
GND	Kunming Ground	(E):121.65(121.85)	H24	For RWY04/22
GND	Kunming Ground	(W):121.95(121.85)	HO	For RWY03/21
GND	Kunming Delivery	121.7(121.85)	HO	DCL available
APN	Changshui Apron	(E):121.6	by ATC	for EAST apron
APN	Changshui Apron	(W):121.75	by ATC	for WEST apron
EMG		121.5	H24	

### ZPPP AD 2.19 无线电导航和着陆设施 Radio navigation and landing aids

设施名称和类型 Name and type of aid	识别 ID	频率 Frequency	发射天线位置、坐标 Antenna site coordinates	DME 发射天线标 高 Elevation of DME transmitting antenna	备注 Remarks
1	2	3	4	5	6
Luxi VOR/DME	LXI	112.3MHz CH70X	N24°32.5' E103°44.6' 117 °MAG/112667m FM ARP	1753m	BTN 70.2-83NM on R105 °for holding pattern U/S
Xishan VOR/DME	SGM	110.6MHz CH43X	N25°04.9' E102°31.2' 260 °MAG/42800m FM ARP	2312m	
Panlong VOR/DME	XFA	110.8MHz CH45X	N25°24.1' E102°56.0' 359 °MAG/33200m FM ARP	2788m	
Malong VOR/DME	DJT	114.6MHz CH93X	N25°31.9' E103°36.3' 047 °MAG/81800m FM ARP	2314m	
Jinning VOR/DME	XSJ	108.2MHz CH19X	N24°41.0' E102°48.0' 198 °MAG/48800m FM ARP	2383m	
LOC 03 ILS CAT II	IZL	111.3MHz	039 °MAG/285m FM RWY03 end		
GP 03		332.3MHz	130m W of RWY03 RCL, 316m FM DTHR03		Angle 3 ° RDH 16m
DME 03	IZL	CH50X (111.3MHz)		2102m	Co-located with GP03
LOC 04 ILS CAT I	IFY	109.3MHz	039 °MAG/300m FM RWY04 end		
GP 04		332.0MHz	130m E of RWY04		Angle 3 °

设施名称和类型 Name and type of aid	识别 ID	频率 Frequency	发射天线位置、坐标 Antenna site coordinates	DME 发射天线标 高 Elevation of DME transmitting antenna	备注 Remarks
			RCL, 310m FM THR04		RDH 16m
DME 04	IFY	CH30X (109.3MHz)		2109m	Co-located with GP04
LOC 21 ILS CAT I	IBH	110.1MHz	219 °MAG/285m FM RWY 21 end		
GP 21		334.4MHz	130m W of RWY21 RCL, 320m FM THR21		Angle 3 ° RDH 16m
DME 21	IBH	CH38X (110.1MHz)		2109m	Co-located with GP21
LOC 22 ILS CAT II	IKM	108.5MHz	219 °MAG/285m FM RWY 22 end		Beyond 25 °rightside of front course U/S; Beyond 31 °leftside of front course U/S
GP 22		329.9MHz	130m E of RWY22 RCL, 320m FM DTHR22		Angle 3 ° RDH 16m
DME 22	IKM	CH22X (108.5MHz)		2106m	Co-located with GP22

**ZPPP AD 2.20 本场飞行规定**

**ZPPP AD 2.20 Local traffic regulations**

**1. 机场使用规定**

**1. Airport operations regulations**

1.1 除经空中交通管制部门许可外，禁止未安装二次雷达应答机的航空器起降。

1.1 Take-off/landing of aircraft without SSR transponder is forbidden unless ATC clearance has been obtained.

1.2 所有技术试飞需事先申请，并在得到空中交通管制部门批准后方可进行。

1.2 Each and every technical test flight or exhibition flight shall be filed in advance and conducted only after



clearance has been obtained from ATC.

1.3 昆明长水机场提供数字化放行系统(DCL)服务。 1.3 DCL services implemented at KUNMING/Changshui airport.

1.3.1 预计撤轮档时间 (EOBT) 前 30min 至 10min, 1.3.1 Flight crew shall use DCL preferentially to apply  
航空器驾驶员应当优先使用数字化放行系统 (DCL) for ATC clearance 10 minutes to 30 minutes before  
向空中交通管制部门 (ATC) 申请放行许可。 EOBT.

1.3.2 首次联系 ATC 时, 完成 DCL 服务的机组如果 1.3.2 Flight crew shall repeat clearance at the first  
未在机载设备完成确认, 初始联系时需要向 ATC 复 contact with ATC controller if they didn't confirming  
诵放行。 airborne equipment after DCL services completed.

1.3.3 当 DCL 无法完成放行许可的申请或发布时, 1.3.3 Flight crew shall contact ATC controller for  
将转为语音方式申请或发布放行许可。 verbal ATC clearance immediately if the DCL service is  
not available.

1.4 进/出港航空器在本场地面滑行时, 应保持开启 1.4 Take-off/landing aircraft shall keep ADS-B  
ADS-B 相关机载设备。 equipment on while taxiing.

## 2. 跑道和滑行道的使用

## 2. Use of runways and taxiways

2.1 禁止航空器在滑行道上做 180°转弯, 未经 ATC 2.1 180° turnaround on TWY is strictly forbidden for  
许可, 禁止航空器在跑道上自行做 180°转弯; all aircraft, 180° turnaround on RWY is strictly  
forbidden for all aircraft without ATC permission;

2.2 落地的航空器应使用快滑脱离跑道后尽早联系 2.2 Arrival aircraft vacating runway via rapid exit  
地面管制索取滑行指令, 否则使用 21 号、22 号跑道 taxiway shall contact the GND control as soon as  
落地的航空器应在 F 滑行道或 C 滑行道上机头向南 possible, hold on TWY F or TWY C nose to south  
等待管制指令, 使用 03 号、04 号跑道落地的航空器 before obtaining taxiing instructions from GND control  
应在 F 滑行道或 C 滑行道上机头向北等待管制指令; when RWY21 and RWY22 in use, or hold on TWY F

or TWY C nose to north before obtaining taxiing instructions from GND control when RWY03 and RWY04 in use;

2.3 为规范跑道占用时间,提高跑道容量,做出以下规定(湿跑道或污染跑道除外):

2.3 Except for wet RWY or contaminated RWY, requirement as follows to increase RWY operation capacity:

2.3.1 起飞航空器从收到进入跑道指令到对正跑道应不超过 60s。航空器在运行中不能满足以上要求的,应在到达等待位置前通知塔台;

2.3.1 Departure aircraft shall finish RWY alignment within 60s after receiving ATC instructions of entering RWY. If aircraft can not execute such operation requirement, flight crew shall inform ATC before reaching the holding positions;

2.3.2 落地航空器从接地到完全脱离跑道应不超过 50s。如航空器无法在上述时间内完成,须通知进近管制员(最晚不迟于三转弯或建立航道之前);

2.3.2 Landing aircraft shall fully vacate RWY within 50s after touch down. If aircraft can not fulfill the process within the required time, flight crew shall inform APP( No later than base turn or the localizer is established);

2.3.3 出港航空器需要使用全跑道起飞时,需在申请放行许可时提出申请。

2.3.3 Full-runway take-off shall be applied at the same time as applying for delivery clearance.

2.4 转换跑道运行方向要求:当跑道顺风分量达到 3.5m/s,且有继续增大趋势时,管制员将启动跑道转换工作。在转换使用跑道方向过程中,使用跑道的顺风分量大于 3.5m/s 但不大于 5m/s 时,管制员通知机组地面风向、风速后,如果因航空器性能限制等原因无法接受时,机组应立即告知管制员,并听从其进一步指令。当跑道顺风分量大于 5m/s,应停止

2.4 Requirements on runway conversion procedure: If downwind speed is more than 3.5m/s and has a tendency to increase, the RWY in use shall be converted. In the process of converting direction of RWY in use, if  $3.5\text{m/s} < \text{downwind} \leq 5\text{m/s}$ , ATC shall inform flight crew about wind direction and wind speed. If runway conversion can't be executed due to

顺风起降。

aircraft's performance limits, flight crew shall report to ATC immediately and follow the next instruction. When downwind speed is more than 5m/s, stop taking off or landing.

## 2.5 双跑道同时仪表运行规定

## 2.5 Simultaneous operations on two runways

2.5.1 四种运行模式：独立平行离场、相关平行仪表进近、隔离平行运行、独立平行仪表进近。模式的选择及使用跑道听从管制员指令，运行时间为 24h。

2.5.1 Four operation modes can be implemented: independent parallel departures, dependent parallel ILS approaches, segregated parallel approaches/departures, and independent parallel ILS approaches. Follow ATC instructions for the specific operation mode and the runway in use, operation time is 24h.

2.5.2 间隔标准：按《平行跑道同时仪表运行管理规定》执行。

2.5.2 The standard separation is according to the Regulations of Simultaneous Operations on Parallel Runways.

2.5.3 当出现风切变、颠簸、下降气流或强侧风等可能加大航空器偏离仪表着陆系统航向道的程度时，航空器驾驶员应立即向管制员报告，根据收到的机组报告和气象信息，空中交通管制部门可根据平行跑道实施方案中的有关程序，及时终止相关平行仪表进近模式或完全终止平行跑道同时仪表运行。

2.5.3 Under certain adverse weather conditions (e.g. windshear, turbulence, down drafts or crosswind) which might increase ILS localizer course deviations to the extent that safety may be impaired and/or an unacceptable number of deviation alerts would be generated, pilot must report the situation to controller immediately. According to the reports and weather information, ATC unit shall decide the necessity to terminate the dependent parallel approaches or independent parallel ILS operations completely.

2.5.4 为了防止误认跑道，请机组在复诵管制指令时

2.5.4 The flight crew should repeat RWY number when

务必包含跑道号。

they repeat control instructions to prevent runway misidentification.

2.6 在滑行等待位置前设置有等待线标志, 未经 ATC 许可, 禁止航空器通过。

2.6 Without ATC clearance, the aircraft is prohibited to go across the holding position markings before the designated holding position.

#### 2.7 滑行道使用限制/TWYs limits:

滑行道/TWYs	航空器翼展限制/ Wing span limits for aircraft
C, C1-C4, C7-C10, D, D3, D4(E of D), N(BTN C&D), D6(E of D), D7-D9, H1(BTN S & Q), J, L(E of H1), P(E of H3), Q(E of H1), R(E of H1), S, U(E of D)	<80m
F2(E of E), H4(N of E1)	<36m
Others	<65m

#### 2.8 对机组的要求

#### 2.8 Requirements for pilots:

a. 机组应听清并复诵地面管制员和机坪管制员的滑行指令, 尤其是界限性指令, 发现疑问及时证实。

a. Repeat GND and APN Control's taxiing instructions, especially the limitations, and verify any questions immediately.

b. 从停机位推出时, 向地面管制员证实使用跑道、推出方向。

b. While pushed back from parking stand, verify the pushing direction and the approved RWY designation from GND Control.

c. 在脱离跑道首次与地面管制联系时, 尤其在低能见度情况下, 必须向地面管制报告脱离的跑道和所使用的滑行道。

c. After vacating RWY, especially under conditions of low visibility, report the RWY designation and TWY designation on initial contact with GND.

d. 如在管制扇区移交时联系不畅，应在交接点停止滑行，并向原先联系的扇区报告。

d. Stop at the designated holding position if communication failures occurred, and report to the last ATC Control.

e. 机组初始联系塔台管制时须报告收到的离港方式。

e. Report about the received departure procedure to TWR Control on the first contact.

f. 当机坪管制员发布“可以推出开车”的指令后，要求航空器在 5min 之内执行指令，否则，航空器需要重新申请。

f. Departing aircraft shall contact APN Control for push-back and start-up clearance and conduct within 5 minutes, otherwise, reapply the clearance.

g. 快速脱离道使用要求（全跑道落地除外）/Rapid exit TWYs Rules(except full RWY landing)

Landing RWY in use	Rapid exit TWYs to use	Rapid exit TWYs prohibited to use
RWY04	C3/C4/C5	C6/C7/C8
RWY22	C6/C7/C8	C3/C4/C5
RWY03	F3/F4/F5	F6/F7/F8
RWY21	F6/F7/F8	F3/F4/F5

## 2.9 机场冲突多发地带运行要求

HS1: 由 Q 滑行道上 F 滑行道的航空器应严格执行 ATC 指令在相应道口前等待，发现冲突应及时避让，并报告 ATC。

HS2: 途经此区域的航空器应严格执行 ATC 指令在相应道口前等待，发现冲突应及时避让，并报告 ATC。

## 2.9 Hot spot procedure

HS1: Aircraft taxiing from TWY Q to TWY F shall implement ATC instruction strictly at the holding position to avoid conflict and report it.

HS2: Aircraft shall implement ATC instruction strictly at the holding position to avoid conflict and report it.

- HS3: 自西向东沿 S 滑离港的航空器, 应避免误入跑道。  
HS3: Departure aircraft taxiing on TWY S from west to east shall avoid to enter RWY.
- HS4: 自西向东沿 U 滑离港的航空器, 应避免误入跑道。  
HS4: Departure aircraft taxiing on TWY U from west to east shall avoid to enter RWY.
- HS5: 此区域为管制盲区, 航空器需严格执行 ATC 指令。  
HS5: Control blind zone, aircraft shall implement ATC instruction strictly.
- HS6: 此区域为管制盲区, 航空器需严格执行 ATC 指令。  
HS6: Control blind zone, aircraft shall implement ATC instruction strictly.
- HS7: 由 H2 滑行道向 Q 或 R 滑行道滑行的航空器应注意 Q、R 滑行道的单向运行限制, 严格执行 ATC 指令在相应道口前等待。  
HS7: Aircraft taxiing from TWY H2 to TWY Q or TWY R shall pay attention to one-way restrictions of TWY Q & R, implement ATC instruction strictly at the holding position.
- HS8: 由 H3 滑行道向 Q 或 R 滑行道滑行的航空器应注意 Q、R 滑行道的单向运行限制, 严格执行 ATC 指令在相应道口前等待。  
HS8: Aircraft taxiing from TWY H3 to TWY Q or TWY R shall pay attention to one-way restrictions of TWY Q & R, implement ATC instruction strictly at the holding position.
- HS9: 501-516 停机位为自滑出机位, 在此区域运行的航空器应严格执行 ATC 指令, 按照 ATC 安排的顺序滑行, 对滑行有疑问时原地等待并向 ATC 证实。  
HS9: When use stands Nr.501-516, aircraft shall taxi out on own power, implement ATC instruction strictly and taxi in sequence according to ATC instructions. Pilots should hold position and contact ATC to verify when in doubt.
- HS10: 531-554 停机位为自滑出机位, 在此区域运行的航空器应严格执行 ATC 指令, 按照 ATC 安排的顺序滑行, 对滑行有疑问时原地等待并向 ATC 证实。  
HS10: When use stands Nr.531-554, aircraft shall taxi out on own power, implement ATC instruction strictly and taxi in sequence according to ATC instructions.

Pilots should hold position and contact ATC to verify when in doubt.

HS11: S202-S207 停机位为自滑入、顶推出机位, 在此区域运行的航空器应严格执行 ATC 指令, 按照 ATC 安排的顺序滑行, 对滑行有疑问时原地等待并向 ATC 证实。

HS11: When use stands Nr.S202-S207, aircraft shall be pushed back and taxi in on own power, implement ATC instruction strictly and taxi in sequence according to ATC instructions. Pilots should hold position and contact ATC to verify when in doubt.

HS12: 此区域的航空器, 应严格执行 ATC 指令在相应道口前等待。航空器驾驶员发现冲突应主动避让, 并向 ATC 证实。

HS12: Aircraft shall implement ATC instruction strictly at the holding position to avoid conflict and report it.

HS13: 此区域的航空器, 应严格执行 ATC 指令在相应道口前等待。航空器驾驶员发现冲突应主动避让, 并向 ATC 证实。

HS13: Aircraft shall implement ATC instruction strictly at the holding position to avoid conflict and report it.

2.10 可以通过地面指挥中心申请引导车和拖车服务。

2.10 Follow-me vehicle service and towing service are available via ground control center.

### 3. 机坪和机位的使用

### 3. Use of aprons and parking stands

3.1 机场机坪管制由昆明机场地面管制指挥室负责, 长水机坪管制 (APN) 范围: 机坪及机场机动区内除跑道、C、D、E、F、Q、R 滑行道、D 与 04/22 跑道之间的所有联络道、E 与 03/21 跑道之间的所有联络道、Q 与 R 之间的所有联络道以外的区域 (如机场图所示)。具体管制移交点及移交方式听从管制员指令执行。

3.1 Apron Control service is provided in aprons and parts of airport maneuvering area(shown in Aerodrome Charts), the flight crew shall follow APN/GND's instructions.

3.2 离港航空器应向塔台管制室申请放行许可, 取得

3.2 Departure flight shall obtain delivery clearance

放行许可后，须继续在该管制频率守听。当机组完全准备好申请推出开车时，应告知塔台放行管制席已完全准备就绪，并按照塔台放行管制席发布的指令转频到长水机坪管制，由长水机坪管制负责发布所有航空器的推出、开车许可。在长水机坪范围内，由长水机坪管制发布滑行指令，在空管塔台管制范围内，由空管塔台管制发布滑行指令。

from TWR Control, and keep listening on the frequency. When ready to push-back, pilots shall contact Delivery to change frequency to APN Control, then follow the instructions about push-back and start-up.

### 3.3 停机位使用的限制/Limits for the aircraft parking on the following stands:

停机位/Stands	航空器翼展限制/ Wing span limits for aircraft (m)	滑入滑出方式 /Enter or Exit
Nr.105, 129, 140, L4, L5	<80	Taxi-in and push-out
Nr.518	<80	Push-in and taxi-out
Nr.106, 107, 134, 135, 163, 164, 312, 313, 322, 323, 519-527, 709, 720, 721	<65	Taxi-in and push-out
Nr.708	<65	Push-in and push-out
Nr.L816	<65	Taxi-in and taxi-out
Nr.705, 722, 723	<61	Taxi-in and push-out
Nr.103, 108-110, 112, 113, 115, 116, 126, 128, 130-133, 136-139, 141, 142, 153, 155, 156, 158-162, 166, 167, 311, 314, 321	<52	Taxi-in and push-out
Nr.101, 104, 114, 154, 157, 165, 318, 330	<48	Taxi-in and push-out
Nr.102, 111, 117-125, 127, 143-152, 168, 315-317,	<36	Taxi-in and push-out



324-329, 519L/R, 521L/R, 522L/R, 523L/R, 524L/R, 525L/R, 526L/R, 527L/R, 592-593, 701-704, 706, 707, 710-719, 722A, 722B, 724, S202-S219		
Nr.501-508, 511-516, 531-536, 539-554, 801-807	<36	Taxi-in and taxi-out
Nr.517, 591	<36	Push-in and taxi-out
Nr.708L/R	<36	Push-in and push-out
Nr.808-815	<30.5	Taxi-in and push-out

## 3.4 不能同时使用的机位/Stand forbidden to use simultaneously

The stands in use	The stands forbidden to use	The stands in use	The stands forbidden to use
519	519L/R	521	521L/R
522	522L/R	523	523L/R
524	524L/R	525	525L/R
526	526L/R	722	722A/722B
519L/R	519	521L/R	521
522L/R	522	523L/R	523
524L/R	524	525L/R	525
526L/R	526	722A/722B	722
527L/R	527	527	527L/R
708	708L/R	708L/R	708
L816	801-815	801/802/803/804/805/ 806/807/808/809/810/	L816

		811/812/813/814/815	
L4	311/312	L5	312/313
311	L4	312	L4/L5
313	L5		

### 3.5 桥载设备参数/Equipment parameters of the boarding bridge

Stands	Power of 400Hz Ground Power Unit (kW)	Quantity of 400Hz Ground Power Unit	Power of Air conditioning system(kW)	Quantity of Air conditioning system
102、111、117-125、 127、143-152、168	90	23	106	23
101、103-110、 112-116、126、 128-142、153-167	90	54	127.5	45

## 4. 进、离场管制规定

## 4. Air traffic control regulations

无

Nil

## 5. 机场的 II/III 类运行

## 5. CAT II/III operations at AD

### 5.1 低能见度运行 (II 类)

### 5.1 Low Visibility Operation Procedures (II)

5.1.1 达到以下条件时, 本场将启动低能见度运行程序:

5.1.1 Low Visibility Operation Procedures will be implemented with following conditions:

5.1.1.1 在机场天气条件变坏的情况下, 机场主导能见度 $\leq 1000\text{m}$ , 或云底高、垂直能见度任一值 $\leq 90\text{m}$ ,

5.1.1.1 Under the condition of bad weather, airport prevailing visibility  $\leq 1000\text{m}$ , height of cloud base or

且有下降趋势时;	vertical visibility $\leq 90\text{m}$ , and have a tendency to be worse;
5.1.1.2 在机场天气条件由差转好的情况下, 预计跑道视程 $\geq 150\text{m}$ , 或云底高、垂直能见度任一值 $\geq 30\text{m}$ 时;	5.1.1.2 Under the condition of weather from bad to good, estimated RVR $\geq 150\text{m}$ , height of cloud base or vertical visibility $\geq 30\text{m}$ ;
5.1.1.3 当机组目视观察并报告能见度较差, 认为有必要启动低能见度运行程序时。	5.1.1.3 Low Visibility Operation Procedures will be implemented while flight crew report visibility is worse based on visual observation.
5.1.2 当天气条件满足相应的低能见度运行标准时, 航空器起降标准和使用跑道情况见机场图和仪表进近图。	5.1.2 When it is available to implement Low Visibility Operation Procedures, see more details about Take-off/Landing MINIMA in aerodrome charts and instrument approach charts.
5.2 航空器引导	5.2 Follow-me vehicle service
5.2.1 低能见度程序运行中, 对提出引导需求的航空器实施引导, 引导服务仅限于机坪内。	5.2.1 When Low Visibility Procedure in force, follow-me vehicle can provide service for aircrafts on request within apron.
5.2.2 引导车在引导航空器时, 车辆行驶速度不得超过 20km/h, 距被引导的航空器不得小于 60m。	5.2.2 The speed of follow-me vehicle shall less than 20km/h in service, the distance from guided aircraft is no less than 60m.
5.2.3 航空器在推出停机位时, 航空器的营运人或代理人应派专人负责观察过往航空器并按规定避让。	5.2.3 The operator or agent of the aircraft shall assign a person to observe passing aircrafts and conduct avoidance in accordance with regulations when the aircraft is being pushed back.

5.2.4 当引导路线上局部能见度低于 100m 或者在视线不清、难以保证安全的情况下，不得进行引导工作，并将情况通报机坪管制室。

5.2.4 Along guiding route, if partial visibility is less than 100m or it is under unclear sight or unsafe condition, stop guidance service, pilots shall report APN Control.

#### 5.2.5 注意事项

#### 5.2.5 Notice

a) 引导车灯开启表示开始引导，引导车灯关闭表示终止引导；

a) The follow-me vehicle lights on means start guiding, the follow-me vehicle lights off means end guiding;

b) 引导工作分离点为机坪与滑行道的连接处。

b) Separation point of guidance service is connection between apron and taxiway.

5.2.6 II 类运行时，离场航空器应在指定滑行道的等待位置进行等待（A380 离场时，未经塔台管制员许可不得进入 C 滑行道），避免进入仪表着陆系统敏感区；进场航空器应在确认已完全离开仪表着陆系统敏感区后，再向塔台管制员报告“航空器已脱离跑道”。

5.2.6 When ILS CAT II is implemented, departing aircraft shall hold at appointed TWY holding position(departing aircraft A380 can not enter TWY C without ATC permission), and avoid to enter ILS sensitive area; arrival aircraft shall report to ATC "aircraft has vacated RWY" after confirming the aircraft has left ILS sensitive area completely.

#### 5.3 使用 HUD 实施特殊批准 II 类运行特殊要求

#### 5.3 Special requirements for HUD special CAT II

5.3.1 当昆明机场启动低能见度运行期间，若使用 22 号跑道起飞，由于 C 滑行道以东的 J 滑行道与 C 滑行道以东的 C2 滑行道区域位于 22 号跑道敏感区内，因此航空器不能通过 J 滑行道、C2 滑行道进入 22 号跑道减跑道起飞。仅能在 C1 滑行道等待标志位置等待，进入 22 号跑道全跑道起飞。

5.3.1 When LVP implemented at the airport, ACFT taking off from RWY22 shall not enter RWY22 via TWY J or TWY C2 to implement partial runway take-off, due to TWY J and TWY C2 east of TWY C in sensitive area of RWY22. ACFT shall hold at holding position on TWY C1 before entering RWY22 for full runway take-off.

- 5.3.2 在实施特殊批准II类运行期间,使用 04 号跑道着陆时,前序航空器在快速出口滑行道 C3、C4 和 C5 滑行道上完全脱离后,后序航空器才能从中间进近定位点使用 HUD 实施特殊II类精密进近。
- 5.3.2 During conducting HUD special II, ACFT using RWY04 for landing start conducting HUD special II approaching at intermediate fix as long as the ACFT ahead has vacated runway via TWY C3,C4 or C5.
- 5.3.3 在实施特殊批准II类运行期间,使用 04 号跑道起飞时,C 滑行道上只能安排垂尾高度小于等于 14m 的航空器等待,并且从 C10 滑行道中心线或从 C9 滑行道中心线开始等待,沿 C 滑行道等待数量须小于 5 架。
- 5.3.3 During conducting HUD special II, ACFT take off from RWY04 via TWY C shall hold at TWY C10 or TWY C9. TWY C is available for ACFT with vertical tail 14m or less and shall be no more than 5 aircrafts for holding.
- 5.3.4 在实施特殊批准II类运行期间,使用 04 号跑道起飞时,航空器(所有机型)可以在 D 滑行道上等待:如果从 C10 滑行道中心线以北的 D 滑行道上开始等待,则沿 D 滑行道上等待数量须小于 5 架。
- 5.3.4 During conducting HUD special II, ACFT using RWY04 to take off could hold at TWY D. No more than 5 aircrafts would be required to hold at TWY D if ACFT start holding at TWY D north of TWY C10.
- 5.3.5 实施特殊批准II类运行期间,C10 滑行道至 P 滑行道之间的 C 滑行道禁止停放垂直尾翼高度大于 14m 的航空器,P 滑行道至 N 滑行道之间的 C 滑行道禁止停放停放垂直尾翼高度大于 20m 的航空器。
- 5.3.5 During conducting HUD special II, TWY C between TWY C10 and TWY P shall not available for ACFT with vertical tail more than 14m. TWY C between TWY P and TWY N shall not available for ACFT with vertical tail more than 20m.
- 5.3.6 在实施特殊批准II类运行期间,使用 21 号跑道着陆时,前序航空器在快速出口滑行道 F6、F7 和 F8 滑行道上完全脱离后,后序航空器才能从中间进近定位点使用 HUD 实施特殊II类精密进近。
- 5.3.6 During conducting HUD special II, ACFT using RWY21 for landing start conducting HUD special II approaching at intermediate fix as long as the ACFT ahead has vacated runway via TWY F6,F7 or F8.
- 5.3.7 在实施特殊批准II类运行期间,使用 21 号跑道起飞时,F 滑行道上只能安排垂尾高度小于等于 14m 的航空器等待,从 F1 滑行道中心线以南的 F 滑行道
- 5.3.7 During conducting HUD special II, ACFT using RWY21 for take-off start holding at TWY F south of TWY F1. TWY F shall available for ACFT with

开始等待，等待数量须小于 7 架。

vertical tail 14m or less and shall be no more than 7 aircrafts for holding.

5.3.8 航空器（除 A380 机型以外所有机型）可以在 E 滑行道上等待：从 F1 滑行道中心线或 F2 滑行道中心线以南的 E 滑行道上开始等待，沿整条 E 滑行道上等待数量均须小于 7 架。

5.3.8 All ACFT except A380 could hold at TWY E. No more than 7 aircrafts would be required to hold along TWY E if ACFT start holding at TWY E south of TWY F1 or F2.

5.3.9 在实施特殊批准II类运行期间，F1 滑行道至 P 滑行道之间的 F 滑行道上禁止停放和运行垂直尾翼高度大于 14m 的航空器。

5.3.9 During conducting HUD special II, TWY F between TWY F1 and TWY P shall not available for ACFT with vertical tail more than 14m.

## 6. 除冰规则

## 6. Rules for deicing

6.1 两种除冰模式：定点除冰和机位除冰。

6.1 Two ways for de-icing: de-icing at fixed point and de-icing at local stands.

6.2 关车定点除冰过程

6.2 Process of deicing at deicing positions with engine off

a. 推出滑行：需除冰的航空器在推出前向机坪管制申请，若除冰位置在机坪管制范围内，由昆明机场地面管制指挥室指挥航空器滑行至除冰位置；若除冰位置在空管塔台地面管制范围内，由昆明机场地面管制指挥室指挥航空器滑行至移交点，交由空管地面管制指挥航空器滑行至除冰位置。

a. Push-back and taxiing: Contact APN Control before push-back. If the deicing position is within the scope of APN Control, APN Control provide taxiing service to the deicing position. If the deicing position is within the scope of GND Control, APN Control provide taxiing service at first, then turn over to GND Control at the holding position.

b. 滑入除冰位：当引导车位于航空器正前方开始行

b. Taxiing to deicing position: Aircraft shall follow the

驶时，航空器应跟随引导车进入除冰位或按机坪或塔台管制指令滑入除冰位。

follow-me vehicle to the deicing position, or taxi to the position designated by APN or TWR Control instructions.

c. 除冰开始：根据入位引导员手势停稳航空器，关闭发动机，直至接到机务轮档档好的通知后，松开刹车，开始除冰。

c. Before deicing: Stop aircraft following marshalman's instructions, shut down engines, then loosen brake upon maintenance person's notification.

d. 除冰结束：除冰完毕，机组在记录本上签字，向机坪或塔台管制申请开车滑出。

d. After deicing: Contact APN or TWR Control to apply start-up clearance.

## 7. 平行跑道同时仪表运行

## 7. Simultaneous operations on parallel runways

无

Nil

## 8. 警告

## 8. Warning

无

Nil

## 9. 直升机飞行限制，直升机停靠区

## 9. Helicopter operation restrictions and helicopter parking / docking area

无

Nil

## ZPPP AD 2.21 噪音限制规定及减噪程序

## ZPPP AD 2.21 Noise restrictions and Noise abatement procedures

无

Nil

## ZPPP AD 2.22 飞行程序

## ZPPP AD 2.22 Flight procedures

### 1. 总则

### 1. General

无 Nil

2. 起落航线 2. Traffic circuits

无 Nil

3. 仪表飞行程序 3. IFR flight procedures

严格按照航图中公布的进、离场程序飞行。 Strict adherence is required to the relevant arrival/departure procedures published in the aeronautical charts.

4. 雷达程序和/或 ADS-B 程序 4. Radar procedures and/or ADS-B procedures

4.1 昆明进近、塔台管制区域内实施雷达管制。航空器最小水平间隔为 6km，最小垂直间隔为 300m。 4.1 Radar control within Kunming APP and TWR has been implemented. The minimum horizontal radar separation is 6km; the minimum vertical radar separation is 300m.

4.2 雷达引导 4.2 Radar vectoring

根据航空器性能或管制规定，发布雷达引导、上升或下降高度及速度调整的指令，使航空器之间保持规定的雷达间隔或尾流间隔; Instructions about radar vectors, ascent/descent altitudes or speed adjustment will be issued for spacing and separating the aircraft so that stipulated radar intervals and wake intervals are maintained, taking into account aircraft characteristics or control regulations;

4.3 最低监视引导高度扇区 4.3 Surveillance Minimum Altitude Sectors

Sector 1	ALT limit: 2850m or above
N250538E1023946-N251024E1025735-N251338E1025907-N251949E1030423-N251218E1031446-N250833E1	



031059-N251319E1030424-N250906E1025848-N250713E1025617-N250515E1025415-N244421E1024727-N244006E1024412-N245113E1022504-N245715E1023017-N245113E1023840-N245515E1024210-N250538E1023946	
Sector 2	ALT limit: 3300m or above
N250515E1025415-N250713E1025617-N250906E1025848-N250201E1030836-N243718E1025938-N244421E1024727-N250515E1025415	
Sector 3	ALT limit: 3000m or above
N250906E1025848-N251319E1030424-N250833E1031059-N251218E1031446-N251949E1030423-N252311E1030716-N253258E1031341-DJT-N243953E1032726-N242906E1030258-N243808E1024733-N244006E1024412-N244421E1024727-N243718E1025938-N250201E1030836-N250906E1025848	
Sector 4	ALT limit: 3200m or above
N243953E1032726-DJT-N253258E1031341-N253737E1031645-N261049E1033859-N255829E1035357-N255104E1040049-N254816E1040354-N243224E1034430-N240630E1024530-N235913E1014722-N242515E1013810-N242811E1015114-N241250E1021910-N242952E1024044-N243808E1024733-N242906E1030258-N243953E1032726	
Sector 5	ALT limit: 3000m or above
N242515E1013810-N243724E1013351-N250140E1013147-N251937E1015029-N250532E1022655-N251904E1024246-N251338E1025907-N251024E1025735-N250538E1023946-N245515E1024210-N245113E1023840-N245715E1023017-N245113E1022504-N244006E1024412-N243808E1024733-N242952E1024044-N241250E1021910-N242811E1015114-N242515E1013810	
Sector 6	ALT limit: 3300m or above
N251937E1015029-N253052E1020143-N254640E1021812-N252927E1030059-N253033E1030535-N253944E1031160-N253737E1031645-N253258E1031341-N252311E1030716-N251949E1030423-N251338E1025907-N251904E1024246-N250532E1022655-N251937E1015029	
Sector 7	ALT limit: 3500m or above
N254640E1021812-N255818E1023002-N253944E1031160-N253033E1030535-N252927E1030059-N254640E1021812	
Sector 8	ALT limit: 3600m or above

N253944E1031160-N254657E1031702-N260025E1032042-N261532E1033344-N261049E1033859-N253737E1031645-N253944E1031160	
Sector 9	ALT limit: 3800m or above
N255818E1023002-N260129E1023317-N255728E1024914-N255512E1025805-N260025E1032042-N254657E1031702-N253944E1031160-N255818E1023002	
Sector 10	ALT limit: 4500m or above
N255728E1024914-N260333E1030119-N260760E1030345-N260025E1032042-N255512E1025805-N255728E1024914	
Sector 11	ALT limit: 4900m or above
N260129E1023317-N260925E1024125-N263003E1031739-N261532E1033344-N260025E1032042-N260760E1030345-N260333E1030119-N255728E1024914-N260129E1023317	

## 5. 无线电通信失效程序

## 5. Radio communication failure procedures

5.1 航空器在确定机载设备通信失效后, 将二次应答机编码设置为 7600。

5.1 Set the SSR transponder code 7600 if radio receiver not available.

5.2 区域、进近管制范围的机组按照管制员给定的最后一个指令高度, MEBNA、XISLI、DADOL、NODIB 方向的进、离场航空器直飞盘龙 (XFA) 导航台; 泸西(LXI)、ELASU、GULOT 方向的进、离场航空器直飞晋宁 (XSJ) 导航台。

5.2 In APP and ACC area, flight crew shall keep the last altitude assigned by ATC, arrival/departure aircraft from MEBNA, XISLI, DADOL, NODIB shall fly to XFA directly; arrival/departure aircraft from LXI, ELASU, GULOT shall fly to XSJ directly.

5.3 过盘龙 (XFA) 导航台后加入右盘旋等待程序, 出航航迹 040°, 出航时间 2min, 入航航迹 220°, 下降高度至修正海压高度 3600m 保持 (如需耗油应保持修正海压高度 4200m 盘旋), 机组根据通播或风向风速自行选择 03/21 号或 04/22 号跑道, 再次过台后

5.3 Turn right and join the circling holding procedure after XFA, outbound track 040°, outbound time 2 mins, inbound track 220°, descend to altitude 3600m and maintain(maintain altitude 4200m circling if consume oil), flight crew shall choose to land via RWY 03/21 or

飞向起始进近定位点（IAF），按相应跑道的标准仪表进近程序自主领航进近着陆。

04/22 according to the ATIS information about wind speed and wind direction, then fly to IAF, strictly follow the relative RWY IAP to land.

5.4 过晋宁（XSJ）导航台后加入公布等待程序，下降高度至修正海压高度 3600m 保持（如需耗油应保持修正海压高度 4200m 盘旋），机组根据通播或风向风速自行选择 03/21 号或 04/22 号跑道，再次过台后飞向起始进近定位点（IAF），按相应跑道的标准仪表进近程序自主领航进近着陆。

5.4 Join the holding procedure after XSJ, descend to altitude 3600m and maintain(maintain altitude 4200m circling if consume oil), flight crew shall choose to land via RWY 03/21 or 04/22 according to the ATIS information about wind speed and wind direction, then fly to IAF, strictly follow the relative RWY IAP to land.

5.5 已飞越起始进近定位点的航空器，按标准进近程序自主领航着陆。

5.5 Aircraft which has already flown over IAF shall continue landing according to the standard IAP.

## 6. 目视飞程序

## 6. Procedures for VFR flights

6.1 昆明管制区航路、进近和塔台管制范围（高度 6000m 及以下）内实施目视间隔和目视进近运行。

6.1 Visual separation is implemented within enroute of KUNMING control area(at and below 6000m). Visual separation and visual approach are put into use within KUNMING approach control area and tower control area(at and below 6000m).

6.2 实施中机组应注意：

6.2 The important instructions and advisory information for flight crew are as follows:

a) 进近管制员在首次联系时，将向机组通报预计目视进近和跑道，机组无异议即认为该机组接受目视进近。

a) The approach controller shall give estimated visual approach implementation and assigned RWY to the flight crew on the initial contact. No objection from flight crew is deemed acceptable.

b) 目视着陆跑道或目视前机后，应尽早报告管制员。

b) Flight crew shall report the preceding aircraft and/or

the landing RWY to the controller as soon as they are/that is in sight.

c) 实施目视间隔时不得超越相邻跑道前机。

c) Under visual separation, the aircraft shall not overtake the preceding one which is using the adjacent RWY.

## 7. 目视飞行航线

## 7. VFR route

无

Nil

## 8. 目视参考点

## 8. Visual reference point

无

Nil

## 9. 其它规定

## 9. Other regulations

无

Nil

## 10. 区域导航飞行程序相关数据

## 10. Data for RNAV flight procedures

### 1. Waypoint list

Waypoint ID	COORDINATES	Waypoint ID	COORDINATES
CI 03	N245354.0 E1024424.0	PP517	N254127.2 E1031617.5
CI 04	N245255.9 E1024501.9	PP518	N253228.0 E1032846.0
CI 21	N252014.0 E1030722.0	PP519	N253710.0 E1032214.0
CI 22	N251929.0 E1030812.0	PP520	N253631.0 E1032308.0
		PP521	N253256.1 E1031830.6
PP401	N250259.2 E1031359.8	PP522	N253217.0 E1031924.8
PP402	N252946.0 E1024700.0	PP523	N252842.1 E1031447.4
PP403	N254323.5 E1024951.8	PP524	N252802.8 E1031541.8

PP404	N244942.0 E1015930.0	PP525	N252428.0 E1031105.0
PP406	N251342.0 E1032222.0	PP526	N252349.0 E1031200.0
PP407	N245803.9 E1024307.6	PP531	N243936.9 E1022234.7
PP408	N245539.5 E1024723.8	PP533	N251514.6 E1024531.1
PP409	N251944.0 E1023333.0	PP535	N243915.8 E1021428.2
PP411	N251150.4 E1025824.0	PP536	N241843.0 E1021537.2
PP412	N251027.5 E1030211.8	PP537	N243857.5 E1020732.7
PP413	N251953.2 E1030213.7	PP539	N252759.0 E1025636.2
PP414	N251506.7 E1030906.2	PP541	N254456.9 E1031126.3
PP415	N252552.9 E1030505.2		
PP416	N252752.2 E1031529.3	ATOLO	N2447.4 E10302.0
PP417	N254215.2 E1032546.7	DADOL	N2630.1 E10317.7
		ELASU	N2359.2 E10147.4
PP501	N255503.0 E1032412.0	GULOT	N2437.4 E10133.9
PP502	N255242.0 E1034435.0	IDPUG	N2440.1 E10234.1
PP503	N244736.4 E1023857.8	IGRID	N2433.2 E10311.1
PP504	N244657.2 E1023952.2	MEBNA	N2610.8 E10339.0
PP505	N245149.6 E1023305.8	NODIB	N2547.8 E10403.8
PP507	N245748.2 E1023815.7	XISLI	N2558.5 E10354.0
PP511	N251145.8 E1025021.7	NIXAS	N2609.4 E10241.4
PP512	N250139.1 E1030424.7	DJT	N2531.9 E10336.3
PP513	N252429.8 E1030127.0	LXI	N2432.5 E10344.6
PP514	N251451.0 E1031448.7	SGM	N2504.9 E10231.2
PP515	N252844.2 E1030509.1	XFA	N2524.1 E10256.0
PP516	N254344.1 E1033726.9	XSJ	N2441.0 E10248.0

## 2. Database coding table

Path Terminator	Waypoint ID	Fly over	Magnetic Course (°)	Turn Direction	Altitude (m)	IAS (kt)	VPA/TCH	Navigation Specification
RWY03 Departure NOD-8W (BY ATC)								
CF	PP415		024			MAX 230		RNP1
TF	DJT							RNP1
TF	NODIB							RNP1
RWY03 Departure NOD-9W								
CF	PP411	Y	024			MAX 230		RNP1
DF	PP406			R				RNP1
TF	DJT							RNP1
TF	NODIB							RNP1
RWY03 Departure LXI-8W								
CF	PP413		024			MAX 230		RNP1
TF	XFA							RNP1
TF	PP402				↑3600			RNP1
TF	SGM							RNP1
TF	ATOLO							RNP1
TF	LXI							RNP1
RWY03 Departure LXI-9W								
CF	PP411	Y	024			MAX 230		RNP1
CF	PP401		143					RNP1
TF	ATOLO							RNP1
TF	LXI							RNP1
RWY03 Departure GUL-9W								
CF	PP413		024			MAX 230		RNP1
TF	XFA							RNP1

TF	PP402				↑3600			RNP1
TF	SGM							RNP1
TF	GULOT							RNP1
RWY03 Departure ELA-9W								
CF	PP413		024			MAX 230		RNP1
TF	XFA							RNP1
TF	PP402				↑3600			RNP1
TF	SGM							RNP1
TF	PP404							RNP1
TF	ELASU							RNP1
RWY03 Departure DAD-9W								
CF	PP413		024			MAX 230		RNP1
TF	XFA							RNP1
TF	PP402				↑3600			RNP1
TF	PP403							RNP1
TF	DADOL							RNP1
RWY04 Departure NOD-8X (BY ATC)								
CF	PP416		039			MAX 230		RNP1
TF	DJT							RNP1
TF	NODIB							RNP1
RWY04 Departure NOD-9X								
CF	PP412	Y	054			MAX 230		RNP1
DF	PP406			R				RNP1
TF	DJT							RNP1
TF	NODIB							RNP1
RWY04 Departure LXI-9X								
CF	PP412	Y	054			MAX 230		RNP1

CF	PP401		143					RNP1
TF	ATOLO							RNP1
TF	LXI							RNP1
RWY04 Departure GUL-8X								
CF	PP412	Y	054			MAX 230		RNP1
CF	PP401		143					RNP1
TF	ATOLO							RNP1
TF	SGM							RNP1
TF	GULOT							RNP1
RWY04 Departure GUL-9X								
CF	PP414		054			MAX 230		RNP1
TF	XFA							RNP1
TF	PP402				↑3600			RNP1
TF	SGM							RNP1
TF	GULOT							RNP1
RWY04 Departure ELA-8X								
CF	PP412	Y	054			MAX 230		RNP1
CF	PP401		143					RNP1
TF	ATOLO							RNP1
TF	SGM							RNP1
TF	PP404							RNP1
TF	ELASU							RNP1
RWY04 Departure ELA-9X								
CF	PP414		054			MAX 230		RNP1
TF	XFA							RNP1
TF	PP402				↑3600			RNP1
TF	SGM							RNP1



TF	PP404							RNP1
TF	ELASU							RNP1
RWY04 Departure DAD-9X								
CF	PP414		054			MAX 230		RNP1
TF	XFA							RNP1
TF	PP402				↑3600			RNP1
TF	PP403							RNP1
TF	DADOL							RNP1
RWY21 Departure NOD-9Y								
CF	PP407		234			MAX 230		RNP1
TF	ATOLO							RNP1
TF	DJT							RNP1
TF	NODIB							RNP1
RWY21 Departure LXI-9Y								
CF	PP407		234			MAX 230		RNP1
TF	ATOLO							RNP1
TF	LXI							RNP1
RWY21 Departure GUL-9Y								
CF	PP407		234			MAX 230		RNP1
TF	SGM							RNP1
TF	GULOT							RNP1
RWY21 Departure ELA-9Y								
CF	PP407		234			MAX 230		RNP1
TF	SGM							RNP1
TF	PP404							RNP1
TF	ELASU							RNP1
RWY21 Departure DAD-9Y								

CF	PP407		234			MAX 230		RNP1
TF	SGM							RNP1
TF	PP409							RNP1
TF	PP403							RNP1
TF	DADOL							RNP1
RWY21 Departure NIX-9Y								
CF	PP407		234			MAX230		RNP1
TF	SGM							RNP1
TF	PP409							RNP1
TF	NIXAS							RNP1
RWY21 Departure DAD-1Y (BY ATC)								
VA			234		2600			RNP1
DF	DADOL			R				RNP1
RWY22 Departure NOD-9Z								
CF	PP408		219			MAX 230		RNP1
TF	ATOLO							RNP1
TF	DJT							RNP1
TF	NODIB							RNP1
RWY22 Departure LXI-9Z								
CF	PP408		219			MAX 230		RNP1
TF	ATOLO							RNP1
TF	LXI							RNP1
RWY22 Departure GUL-9Z								
CF	PP408		219			MAX 230		RNP1
TF	SGM							RNP1
TF	GULOT							RNP1
RWY22 Departure ELA-9Z								

CF	PP408		219			MAX 230		RNP1
TF	SGM							RNP1
TF	PP404							RNP1
TF	ELASU							RNP1
RWY22 Departure DAD-9Z								
CF	PP408		219			MAX 230		RNP1
TF	SGM							RNP1
TF	PP409							RNP1
TF	PP403							RNP1
TF	DADOL							RNP1
RWY22 Departure NIX-9Z								
CF	PP408		219			MAX230		RNP1
TF	SGM							RNP1
TF	PP409							RNP1
TF	NIXAS							RNP1
RWY22 Departure DAD-1Z (BY ATC)								
VA			219		2600			RNP1
DF	DADOL			R				RNP1
RWY03/04 Arrival XIS-1J								
IF	XISLI							RNP1
TF	PP502							RNP1
TF	PP516							RNP1
TF	PP512							RNP1
TF	XSJ				↑3600	MAX 205		RNP1
RWY03/04 Arrival XIS-2J								
IF	XISLI							RNP1
TF	PP502							RNP1

TF	PP517							RNP1
TF	PP515							RNP1
TF	PP511							RNP1
TF	PP507				↑3600	MAX 205		RNP1
RWY03/04 Arrival LXI-1J								
IF	LXI							RNP1
TF	IGRID							RNP1
TF	XSJ				↑3600	MAX 205		RNP1
RWY03/04 Arrival ELA-1J								
IF	ELASU							RNP1
TF	PP536							RNP1
TF	XSJ				↑3600	MAX 205		RNP1
RWY03/04 Arrival ELA-2J								
IF	ELASU							RNP1
TF	PP536							RNP1
TF	PP535							RNP1
TF	PP533				↓4800	MAX 205		RNP1
TF	PP511							RNP1
TF	PP507				↑3600	MAX 205		RNP1
RWY03/04 Arrival ELA-3J								
IF	ELASU							RNP1
TF	IDPUG				↑3600	MAX 205		RNP1
RWY03/04 Arrival GUL-1J								
IF	GULOT							RNP1
TF	PP537							RNP1
TF	PP535							RNP1
TF	PP533				↓4800	MAX 205		RNP1

TF	PP511							RNP1
TF	PP507				↑3600	MAX 205		RNP1
RWY03/04 Arrival MEB-1J								
IF	MEBNA							RNP1
TF	PP501							RNP1
TF	PP517							RNP1
TF	PP515							RNP1
TF	PP511							RNP1
TF	PP507				↑3600	MAX 205		RNP1
RWY03 Approach transition XSJ								
IF	XSJ				↑3600	MAX 205		RNP1
TF	PP503							RNP1
TF	CI 03				@3000			RNP1
RWY03 Approach transition IDPUG								
IF	IDPUG				↑3600	MAX 205		RNP1
TF	PP503							RNP1
TF	CI 03				@3000			RNP1
RWY03 Approach transition PP507								
IF	PP507				↑3600	MAX 205		RNP1
TF	PP505							RNP1
TF	PP503							RNP1
TF	CI 03				@3000			RNP1
RWY04 Approach transition XSJ								
IF	XSJ				↑3600	MAX 205		RNP1
TF	PP504							RNP1
TF	CI 04				@3300			RNP1
RWY04 Approach transition IDPUG								

IF	IDPUG				↑3600	MAX 205		RNP1
TF	PP504							RNP1
TF	CI 04				@3300			RNP1
RWY04 Approach transition PP507								
IF	PP507				↑3600	MAX 205		RNP1
TF	PP505							RNP1
TF	PP504							RNP1
TF	CI 04				@3300			RNP1
RWY21/22 Arrival XIS-1L								
IF	XISLI							RNP1
TF	PP502							RNP1
TF	PP516							RNP1
TF	PP518				↑3600	MAX 205		RNP1
RWY21/22 Arrival XIS-2L								
IF	XISLI							RNP1
TF	PP502							RNP1
TF	PP501							RNP1
TF	PP541							RNP1
TF	PP539							RNP1
TF	PP533				↓4800	MAX 205		RNP1
TF	PP511							RNP1
TF	PP513				↑3600	MAX 205		RNP1
RWY21/22 Arrival LXI-1L								
IF	LXI							RNP1
TF	IGRID							RNP1
TF	XSJ							RNP1
TF	PP512							RNP1

TF	PP514							RNP1
TF	PP518				↑3600	MAX 205		RNP1
RWY21/22 Arrival LXI-2L								
IF	LXI							RNP1
TF	IGRID							RNP1
TF	XSJ							RNP1
TF	PP505							RNP1
TF	PP511							RNP1
TF	PP513				↑3600	MAX 205		RNP1
RWY21/22 Arrival ELA-1L								
IF	ELASU							RNP1
TF	PP536							RNP1
TF	XSJ							RNP1
TF	PP512							RNP1
TF	PP514							RNP1
TF	PP518				↑3600	MAX 205		RNP1
RWY21/22 Arrival ELA-2L								
IF	ELASU							RNP1
TF	IDPUG							RNP1
TF	PP505							RNP1
TF	PP511							RNP1
TF	PP513				↑3600	MAX 205		RNP1
RWY21/22 Arrival GUL-1L								
IF	GULOT							RNP1
TF	PP537							RNP1
TF	PP531							RNP1
TF	PP505							RNP1

TF	PP511							RNP1
TF	PP513				↑3600	MAX 205		RNP1
RWY21/22 Arrival GUL-2L								
IF	GULOT							RNP1
TF	PP537							RNP1
TF	PP531							RNP1
TF	IDPUG							RNP1
TF	XSJ							RNP1
TF	PP512							RNP1
TF	PP514							RNP1
TF	PP518				↑3600	MAX 205		RNP1
RWY21/22 Arrival MEB-1L								
IF	MEBNA							RNP1
TF	PP501							RNP1
TF	PP541							RNP1
TF	PP539							RNP1
TF	PP533				↓4800	MAX 205		RNP1
TF	PP511							RNP1
TF	PP513				↑3600	MAX 205		RNP1
RWY21/22 Arrival MEB-1M								
IF	MEBNA							RNP1
TF	PP417				↑3600	MAX 205		RNP1
RWY21 Approach transition PP513								
IF	PP513				↑3600	MAX 205		RNP1
TF	PP517							RNP1
TF	PP519							RNP1
TF	PP521							RNP1



TF	PP523							RNP1
TF	PP525							RNP1
TF	CI 21				@3300			RNP1
RWY21 Approach transition PP518								
IF	PP518				↑3600	MAX 205		RNP1
TF	PP519							RNP1
TF	PP521							RNP1
TF	PP523							RNP1
TF	PP525							RNP1
TF	CI 21				@3300			RNP1
RWY21 Approach transition PP417								
IF	PP417				↑3600	MAX 205		RNP1
TF	PP519							RNP1
TF	PP521							RNP1
TF	PP523							RNP1
TF	PP525							RNP1
TF	CI 21				@3300			RNP1
RWY22 Approach transition PP513								
IF	PP513				↑3600	MAX 205		RNP1
TF	PP517							RNP1
TF	PP520							RNP1
TF	PP522							RNP1
TF	PP524							RNP1
TF	PP526							RNP1
TF	CI 22				@3000			RNP1
RWY22 Approach transition PP518								
IF	PP518				↑3600	MAX 205		RNP1

TF	PP520							RNP1
TF	PP522							RNP1
TF	PP524							RNP1
TF	PP526							RNP1
TF	CI 22				@3000			RNP1
RWY22 Approach transition PP417								
IF	PP417				↑3600	MAX 205		RNP1
TF	PP520							RNP1
TF	PP522							RNP1
TF	PP524							RNP1
TF	PP526							RNP1
TF	CI 22				@3000			RNP1
RWY03/04/21/22 Holding (outbound time: 1min)								
HM	PP516	Y	216	L	4200			RNP1
HM	XSJ	Y	291	R	3600			RNP1
HM	PP536	Y	054	L	3600			RNP1
HM	PP537	Y	088	L	3600			RNP1
RWY03/04/21/22 Holding (outbound time: 1.5min)								
HM	PP501	Y	220	R	5100			RNP1

**ZPPP AD 2.23 其它资料**

**ZPPP AD 2.23 Other information**

1. 全年有鸟类活动。机场当局采取了驱赶措施，以减少鸟群活动。

1. Activities of bird flocks are found all the year round. Aerodrome Authority resorts to dispersal methods to reduce bird activities.

Migratory Season	Area and Direction of activity	Flight height(m)	Characteristic
------------------	--------------------------------	------------------	----------------

Spring (day)	In the airport	0-150	Group, all size
Spring (night)	Inside and outside flight area	0-150	Group, small and medium size
Summer (day)	In the airport	0-150	Group, small and medium size
Summer (night)	Inside and outside flight area	0-150	Group, small and medium size
Autumn (day)	Inside flight area	0-150	Group, small and medium size
Autumn (night)	outside flight area, migrate northwest to southeast	0-150	Group, small and medium size
Winter (day)	Inside and outside flight area	0-150	Group, all size
Winter (night)	outside flight area, migrate northwest to southeast	0-150	Group, all size

2. 机场安装了四台激光驱鸟设备,扫射过程中有绿色激光束穿过跑道,扫射植草区,对飞行无影响,请机组注意。
2. Four laser bird dispersal equipment erected, emitting green laser light, cabin crew shall pay more attention.

Number	Location	Operation time
1	186m E of RWY04 CL, 700m N of THR04	10:50-00:05 (next day)
2	186m E of RWY04 CL, 2700m N of THR04	

3	181m W of RWY03 CL, 600m N of THR03	
4	181m W of RWY03 CL, 2600m N of THR03	