

## Boundary conditions and joint constraints (maximum velocity and acceleration)

Initial joint angles(초기 조인트 각도):  $[\theta_1, \theta_2, \theta_3] = [0, 1.5708, 0]$  (rad)

Joint maximum velocity(조인트 최대 각속도):  $V_{\max} = 0.3926991$  rad/s

Joint maximum acceleration(조인트 최대 각가속도):  $a_{\max} = 1.9634955$  rad/s<sup>2</sup>

Class A(Monday)

조	Final end effector position (x,y,z) mm	Final orientation for the end effector [ $n_x, n_y, n_z; o_x, o_y, o_z; a_x, a_y, a_z$ ]
1	(159.4, 100.5, 295)	[0.586191, 0.369396, 0.721059; -0.610649, -0.383451, 0.692873; 0.532436, -0.84647, 0.000796327]
2	(159.4, 100.5, 195)	[0.826998, 0.520388, 0.212771; -0.180519, -0.112628, 0.977102; 0.532436, -0.84647, 0.000796327]
3	(159.4, 100.5, 95)	[0.817388, 0.513898, -0.260359; 0.219977, 0.139275, 0.965512; 0.532436, -0.84647, 0.000796327]
4	(159.4, 0.5, 295)	[0.721416, 0.00274384, 0.692496; -0.692495, -0.00153001, 0.721421; 0.00303899, -0.999995, 0.000796327]
5	(159.4, 0.5, 195)	[0.969967, 0.00314142, 0.243216; -0.243217, 3.32783E-5, 0.969972; 0.003039, -0.999995, 0.000796327]
6	(159.4, 0.5, 95)	[0.973067, 0.00277359, -0.230507; 0.230503, 0.00147539, 0.97307; 0.00303899, -0.999995, 0.000796327]

Class B (Tuesday)

조	Final end effector position (x,y,z) mm	Final orientation for the end effector [ $n_x, n_y, n_z; o_x, o_y, o_z; a_x, a_y, a_z$ ]
1	(159.4, -99.5, 295)	[0.589015, -0.366619, 0.720175; -0.610807, 0.381534, 0.693792; -0.529129, -0.848541, 0.000796327]
2	(159.4, -99.5, 195)	[0.829348, -0.516961, 0.211973; -0.179456, 0.112821, 0.977275; -0.529129, -0.848541, 0.000796327]
3	(159.4, -99.5, 95)	[0.81907, -0.510996, -0.260782; 0.221691, -0.137335, 0.965397; -0.529129, -0.848541, 0.000796327]
4	(159.4, 100.5, 295)	[0.586191, 0.369396, 0.721059; -0.610649, -0.383451, 0.692873; 0.532436, -0.84647, 0.000796327]