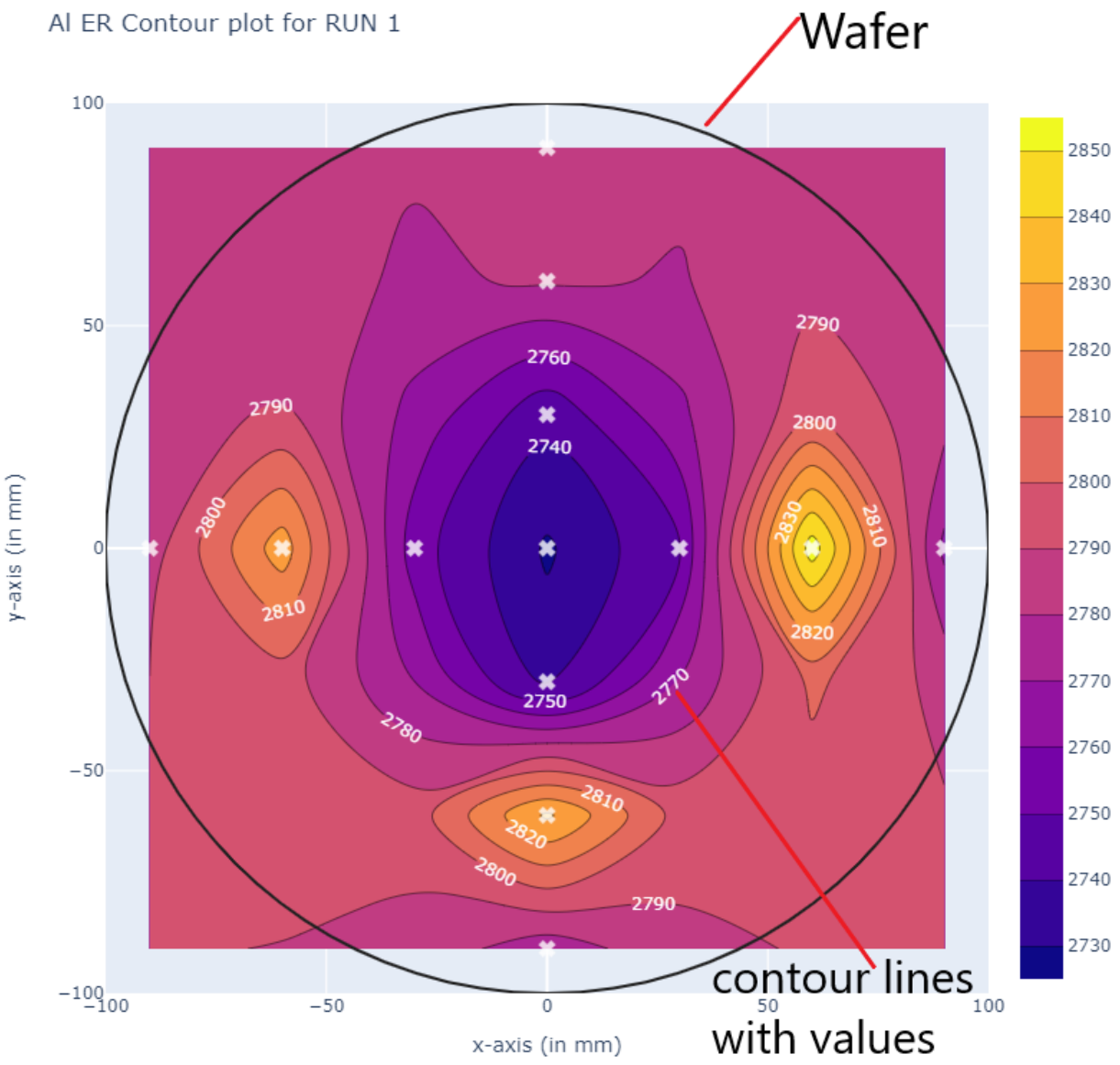
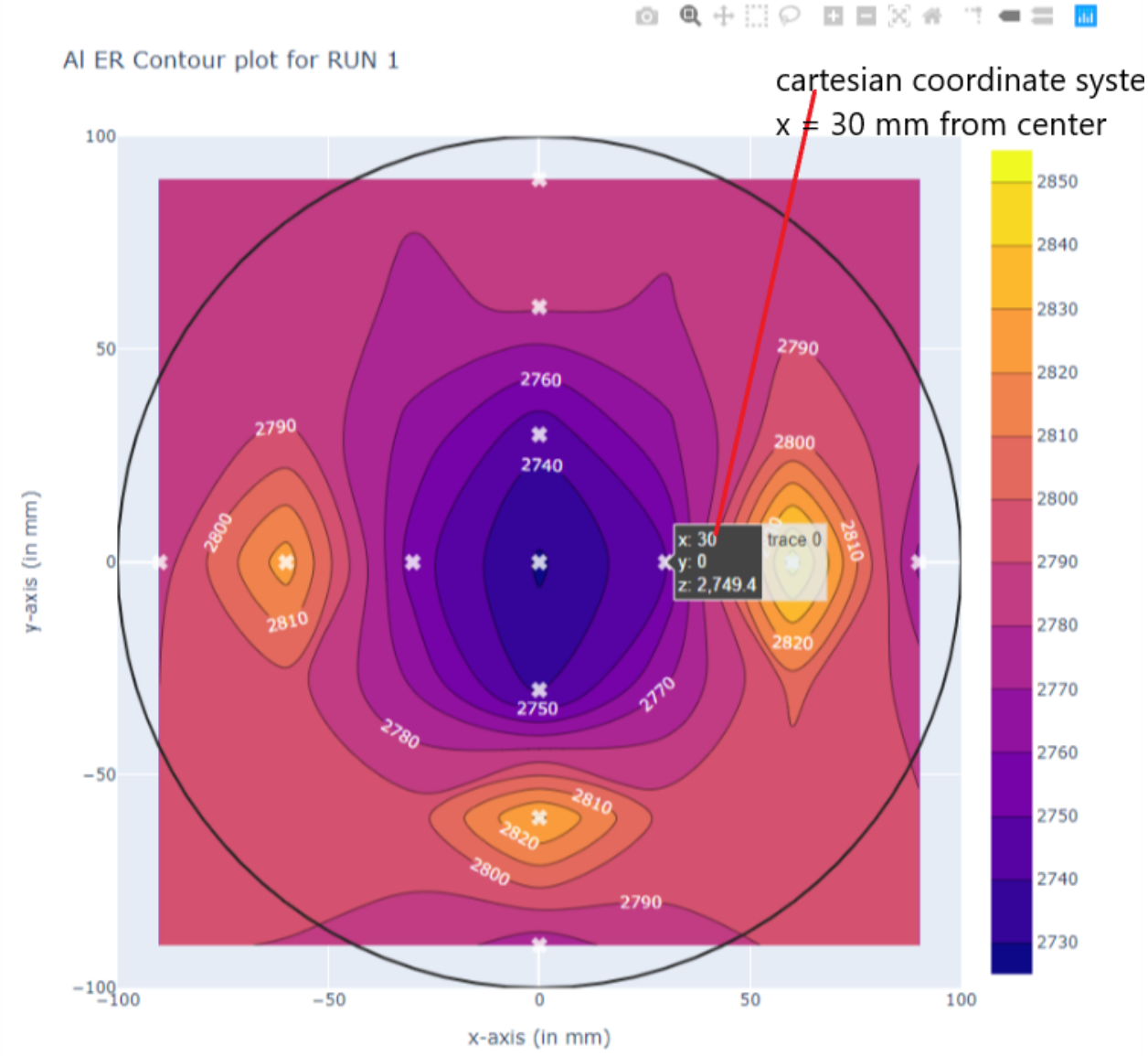
REML1 Al ER Analysis on XRA vs MTRS1

Contour Plot Explained

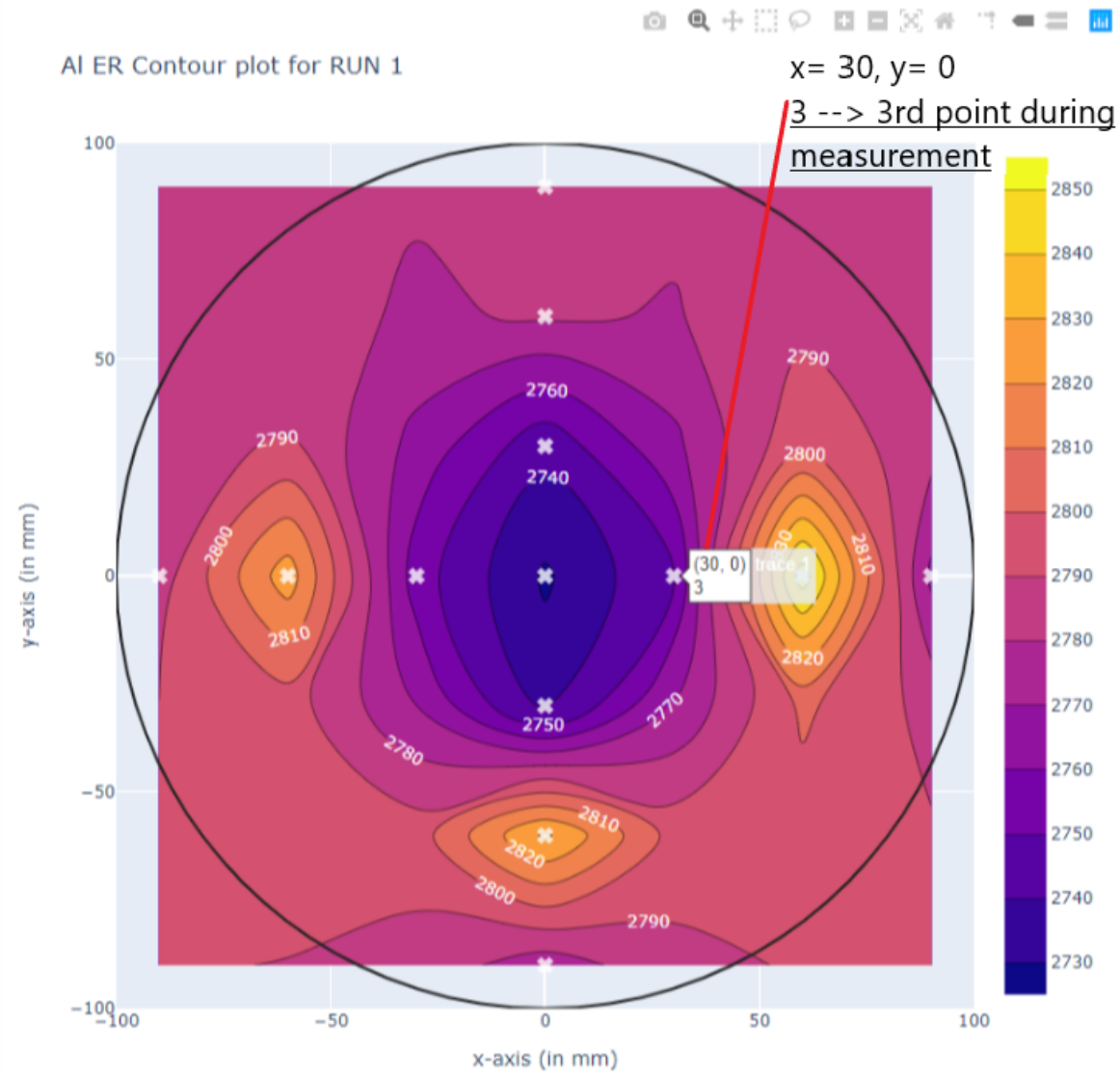
1



2


Al ER Contour plot for RUN 1
cartesian coordinate syste
x = 30 mm from center
x: 30
y: 0
z: 2,749.4
trace 0
y-axis (in mm)
x-axis (in mm)
100
50
0
−50
−100
2850
2840
2830
2820
2810
2800
2790
2780
2770
2760
2750
2740
2730

3


Al ER Contour plot for RUN 1
x= 30, y= 0
3 --> 3rd point during measurement
(30, 0) trace 1
3
y-axis (in mm)
x-axis (in mm)
100
50
0
−50
−100
−100
−50
0
50
100
2850
2840
2830
2820
2810
2800
2790
2780
2770
2760
2750
2740
2730
2790
2760
2740
2800
2790
2800
2810
2810
2820
2750
2770
2780
2810
2820
2800
2790

Equipment-1: XRA

Excel file data in XRA

QC LOG BOOK

Area: Dry Etch

QC Name: ER

Wafer Type: AL 3600

Recipe: CHA AL ER

Pass Criteria for Etch rate: LSL: USL: Å /Min

Pass Criteria for Uniformity: <15%

Tool: REML1A

Frequency: 72hrs or 500 production wfs

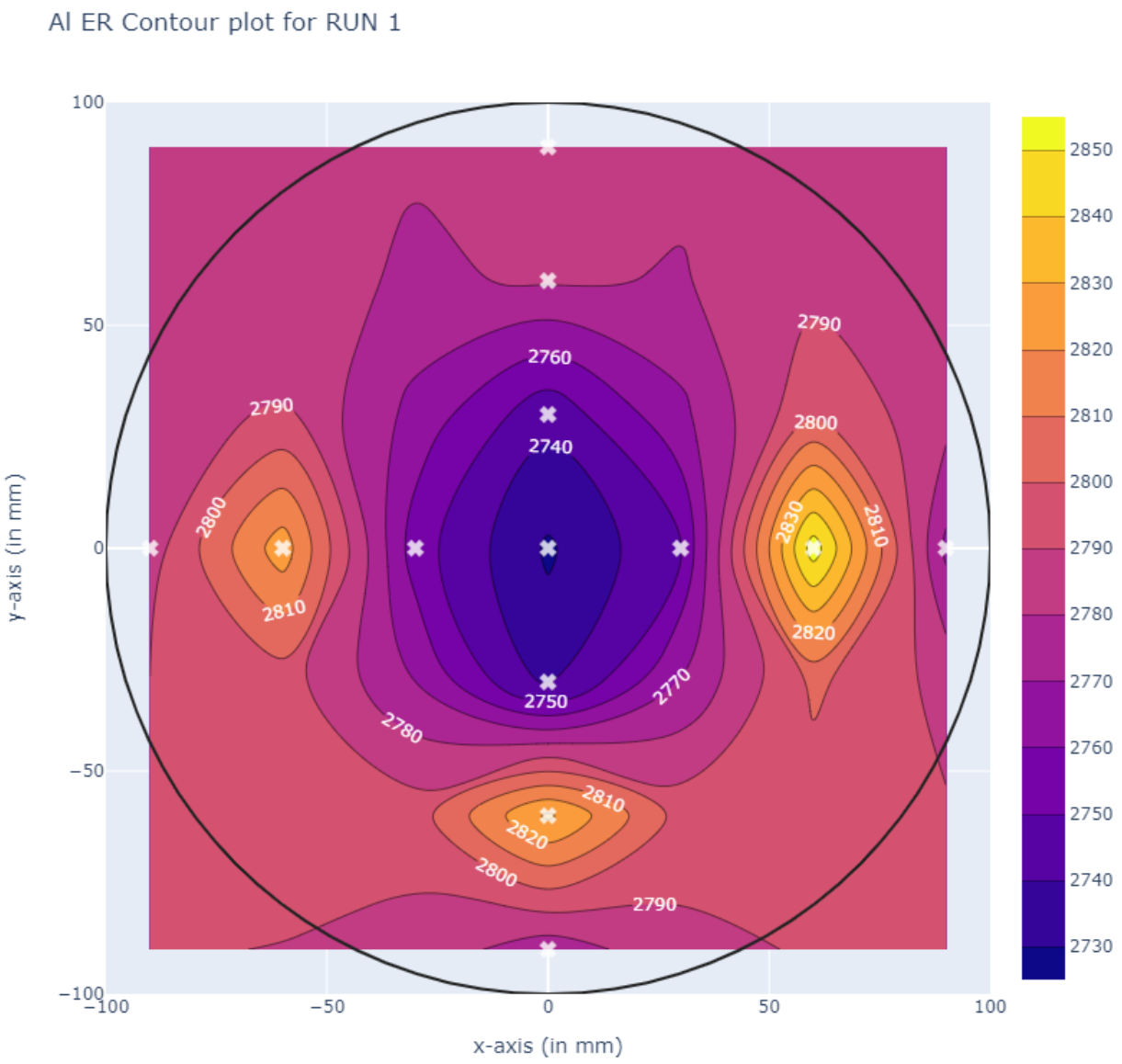
Measurment Tool (XRA01) Recipe: ALCU-XRA

Note: As per XRA tool,
y' --> 0 degree axis
x --> 90 degree axis
y --> 180 degree axis
x' --> 270 degree axis

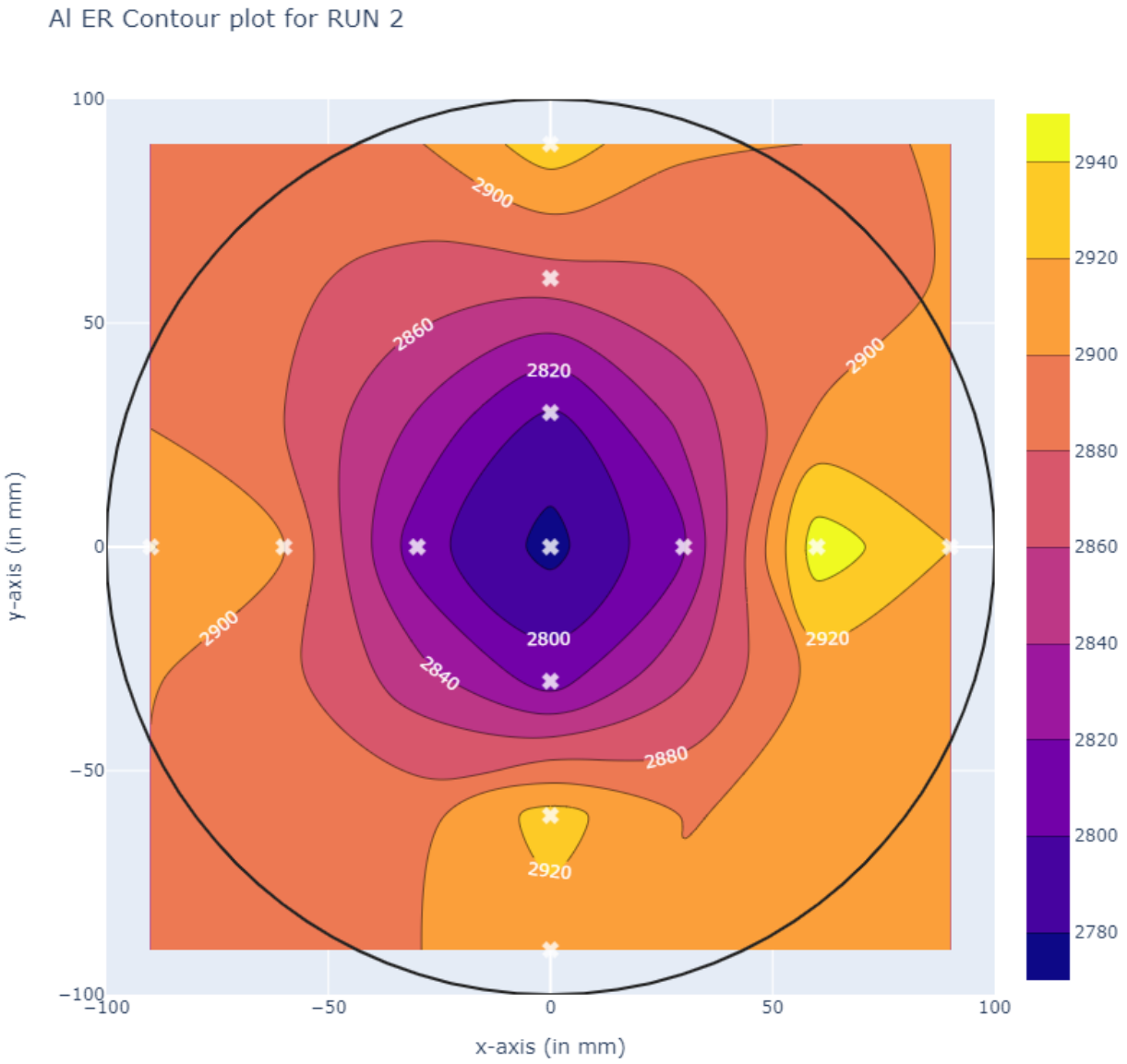
		Thickness (Å)																				
Polar (r, theta)		(0, 0)	(30, 0)	(30, 90)	(30, 180)	(30,	(60, 0)	(60, 90)	(60,	(60,	(90, 0)	(90, 90)	(90,	(90, 270								
Cartesian (x, y)		(0, 0)	(0, -30)	(30, 0)	(0, 30)	(-30, 0)	(0, -60)	(60, 0)	(0, 60)	(-60, 0)	(0, -90)	(90, 0)	(0, 90)	(-90, 0)								
Date (MM/DD/YYYY)	Site	site_1	site_2	site_3	site_4	site_5	site_6	site_7	site_8	site_9	site_10	site_11	site_12	site_13	Max Etch Rate	Min Etch Rate	Etch Rate (A/Min)	STDEV	% Uni	Result	Tech EC	Lot ID	Remarks
10/25/2019	Pre	3684.4	3680.6	3658	3699.8	3655	3641.8	3641.7	3749.7	3664.2	3679	3705.3	3793.7	3749	2855.2	2728.6	2777.9	38.8255	2.27		1519		RUN 1
	Post	2320.1	2312.7	2283.3	2328.3	2277.7	2226	2214.1	2359.1	2251.5	2292	2321.5	2402.8	2356.5								
	ER_point	2728.6	2735.8	2749.4	2743	2754.6	2831.6	2855.2	2781.2	2825.4	2774	2767.6	2781.8	2785								
11/08/2019	Pre	3587.8	3570.7	3605.8	3555.3	3590.7	3560.3	3656.4	3605.9	3631.8	3675.8	3729.2	3699.3	3674	2951.2	2773.6	2872.3	61.9521	3.10		64		RUN 2
	Post	2201	2165	2196.6	2157.9	2186.3	2096.2	2180.8	2170.2	2181.6	2220.9	2269.1	2233.7	2213.6								
	ER_point	2773.6	2811.4	2818.4	2794.8	2808.8	2928.2	2951.2	2871.4	2900.4	2909.8	2920.2	2931.2	2920.8								
11/11/2019	Pre	3665.2	3672.9	3653.6	3655	3624.6	3714.5	3674.1	3705.5	3672	3773.3	3799.2	3811.2	3776.9	3040.4	2837	2939	73.0276	3.46		102		RUN 3
	Post	2246.1	2229.4	2217.4	2236.5	2202.8	2194.3	2181.2	2233.2	2183	2267	2310.4	2310.8	2282.7								
	ER_point	2838.2	2887	2872.4	2837	2843.6	3040.4	2985.8	2944.6	2978	3012.6	2977.6	3000.8	2988.4								
11/11/2019	Pre	3669.1	3620.3	3660.4	3651	3672.8	3672.6	3647.1	3616.1	3714.1	3810.8	3730.6	3733.4	3804.9	3025.8	2861.6	2941.7	54.3941	2.79		102		RUN 4
	Post	2235.6	2168.8	2207.1	2220.2	2234.5	2186.8	2150.6	2132.6	2201.2	2338.8	2257.8	2246.6	2301.4								
	ER_point	2867	2903	2906.6	2861.6	2876.6	2971.6	2993	2967	3025.8	2944	2945.6	2973.6	3007								
11/13/2019	Pre	3577.9	3567.7	3580.8	3537.8	3569.9	3544.5	3624.8	3590.8	3614.6	3652.2	3698	3686	3667.9	3029.6	2862.2	2931.9	54.3193	2.84		102		RUN 5
	Post	2146.8	2118.6	2140.3	2095.2	2135.3	2042.8	2110	2104.7	2144.6	2188.9	2199.9	2219.4	2209								
	ER_point	2862.2	2898.2	2881	2885.2	2869.2	3003.4	3029.6	2972.2	2940	2926.6	2996.2	2933.2	2917.8								
	Pre																	#DIV/0!				

Contour Plots for Al Etch Rate (ER) in 5 Runs

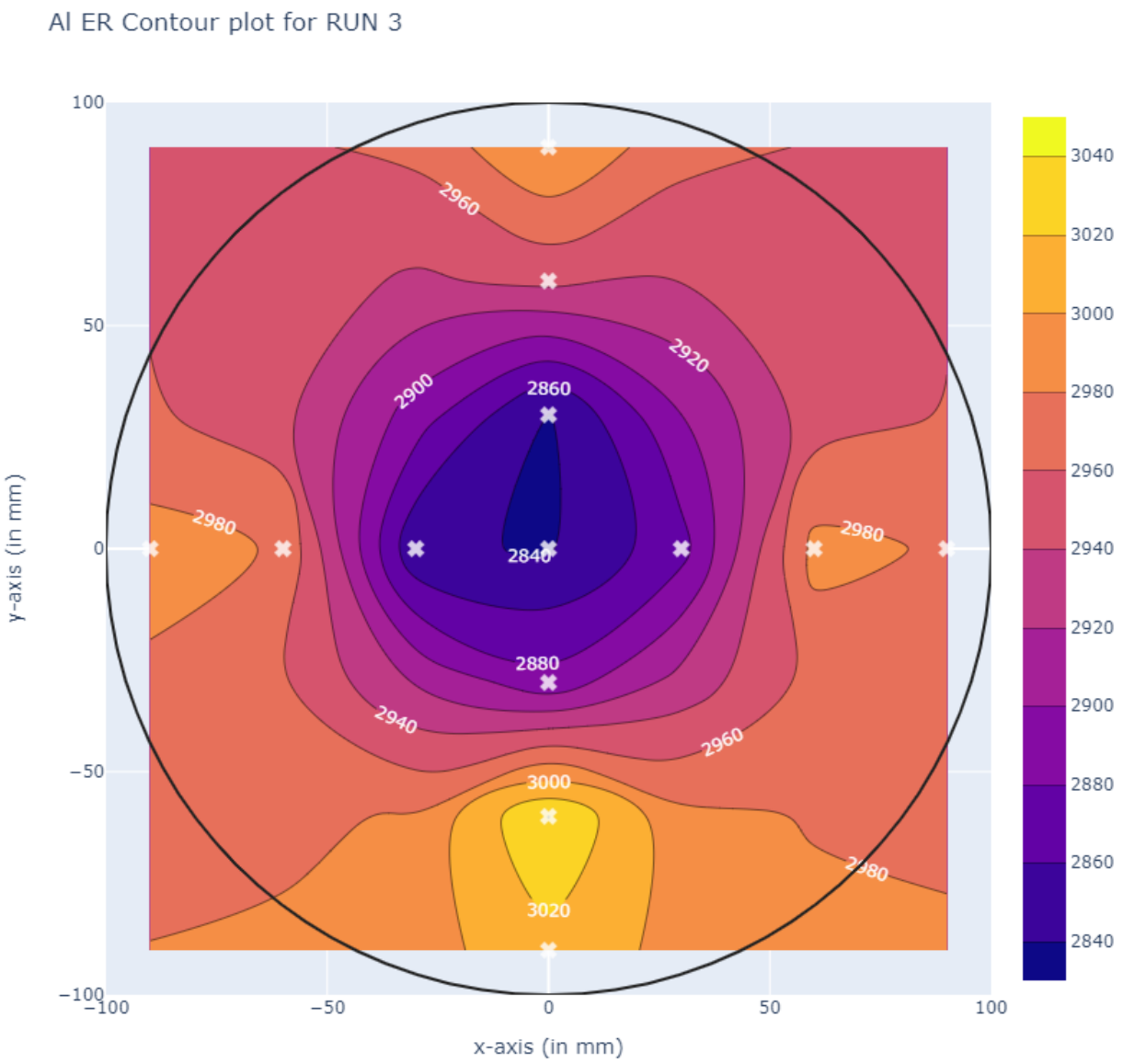
RUN-1



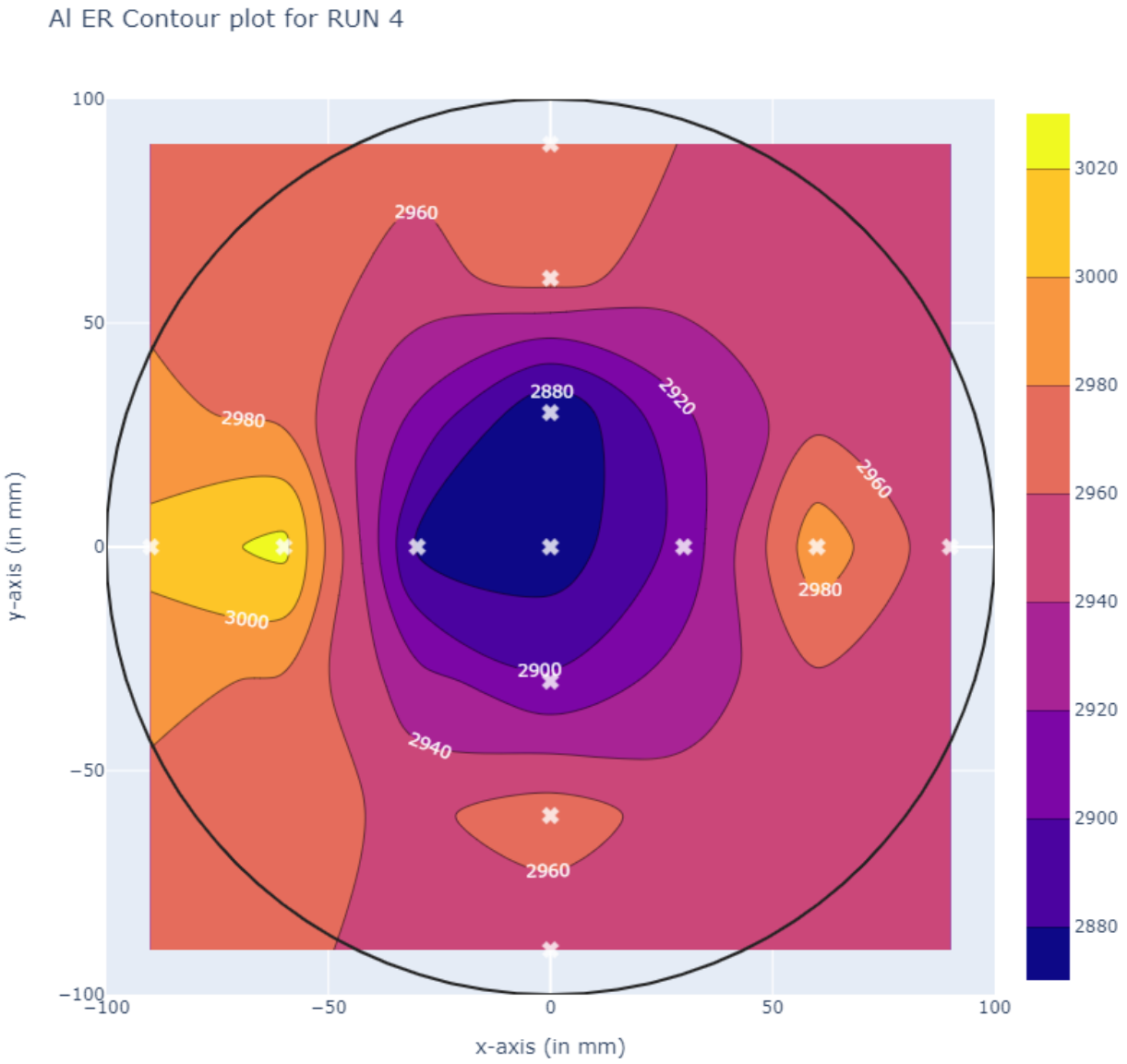
RUN-2


Al ER Contour plot for RUN 2
y-axis (in mm)
x-axis (in mm)
100
50
0
−50
−100
−100
−50
0
50
100
2900
2860
2820
2900
2900
2920
2800
2840
2880
2920
2940
2920
2900
2880
2860
2840
2820
2800
2780

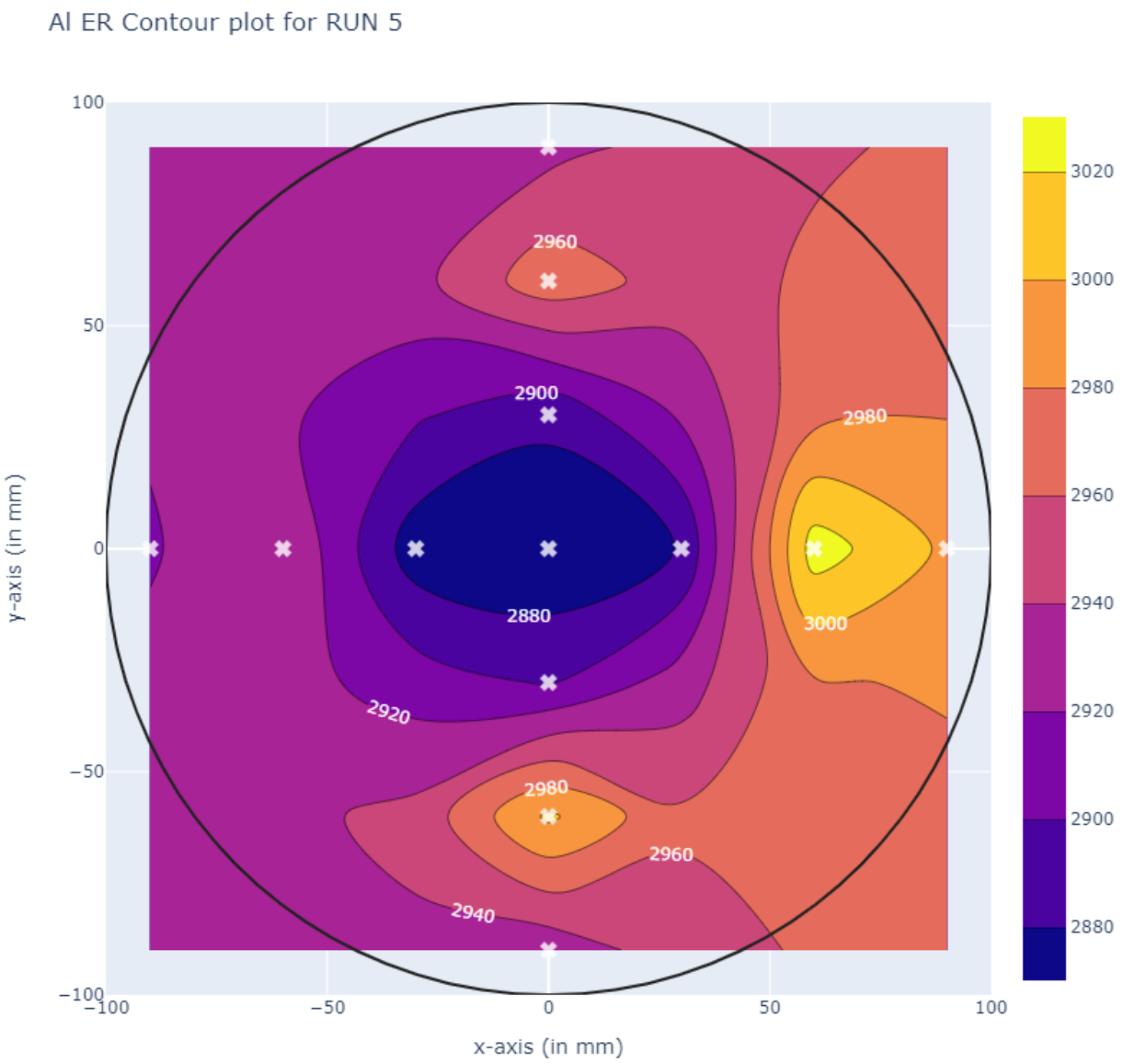
RUN-3


Al ER Contour plot for RUN 3
y-axis (in mm)
x-axis (in mm)
100
50
0
−50
−100
−100
−50
0
50
100
2960
2920
2900
2860
2980
2840
2880
2940
3000
3020
3040
3020
3000
2980
2960
2940
2920
2900
2880
2860
2840

RUN-4


Al ER Contour plot for RUN 4
y-axis (in mm)
x-axis (in mm)
100
50
0
−50
−100
−100
−50
0
50
100
2960
2980
2880
2920
2960
3000
2900
2940
2980
2960
3020
3000
2980
2960
2940
2920
2900
2880

RUN-5


Al ER Contour plot for RUN 5
y-axis (in mm)
x-axis (in mm)
100
50
0
−50
−100
−100
−50
0
50
100
2960
2900
2980
2880
3000
2920
2980
2960
2940
3020
3000
2980
2960
2940
2920
2900
2880

`RUN` button

- Click the `run.bat` file to open/update the charts.