Supporting Information:

Discrimination of Complex Mixtures by a Colorimetric Sensor Array: Coffee Aromas

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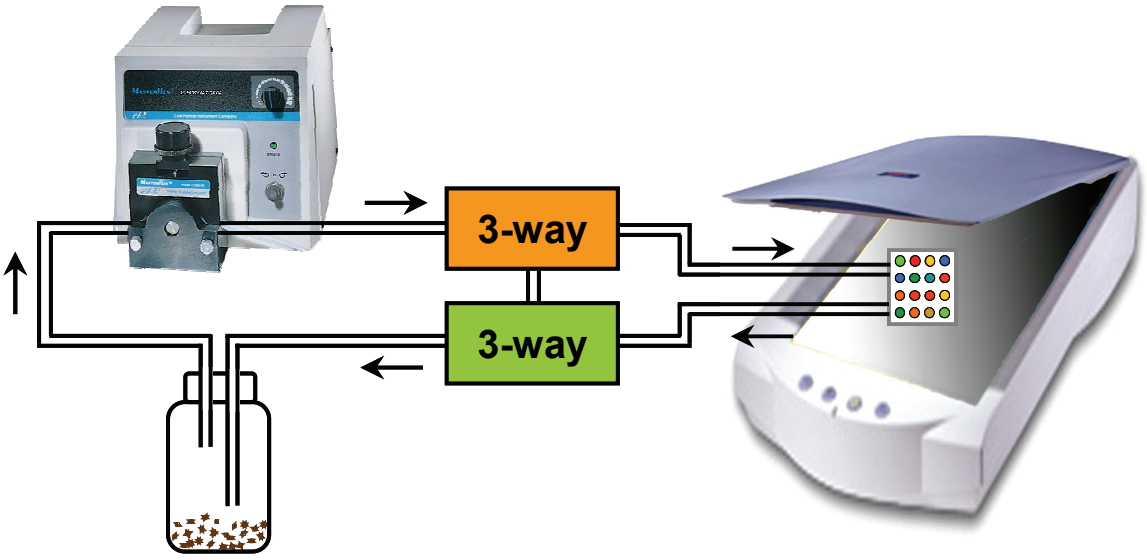

Figure S1. The experimental set-up for coffee aroma testing. The three-way valves allow one to presaturate coffee aroma gas reservoir and then divert the analyte stream to colorimetric sensor array.

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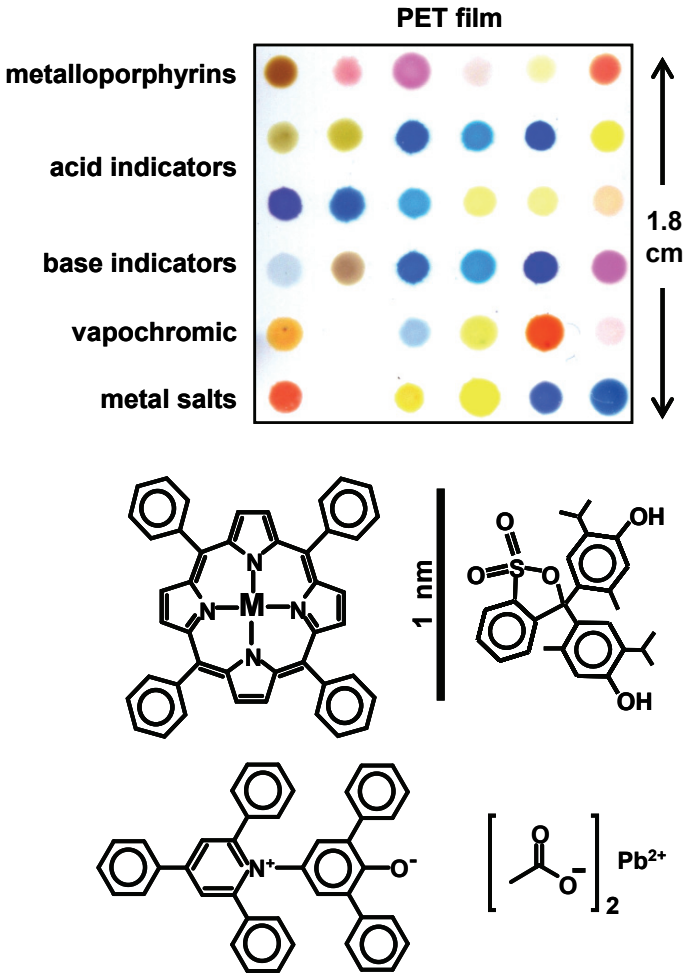

Figure S2. The colorimetric sensor array (CSA) consists of 36 different chemically responsive pigments that have been printed directly on a polyethylene terephthalate (PET) film. Examples of each dye class are shown; in order to absorb visible light, dyes are inherently nanoscale. The 36 dyes were selected empirically based on the quality of their color response to a representative selection of different analytes. Several of the dyes in the array are essentially transparent before exposure.

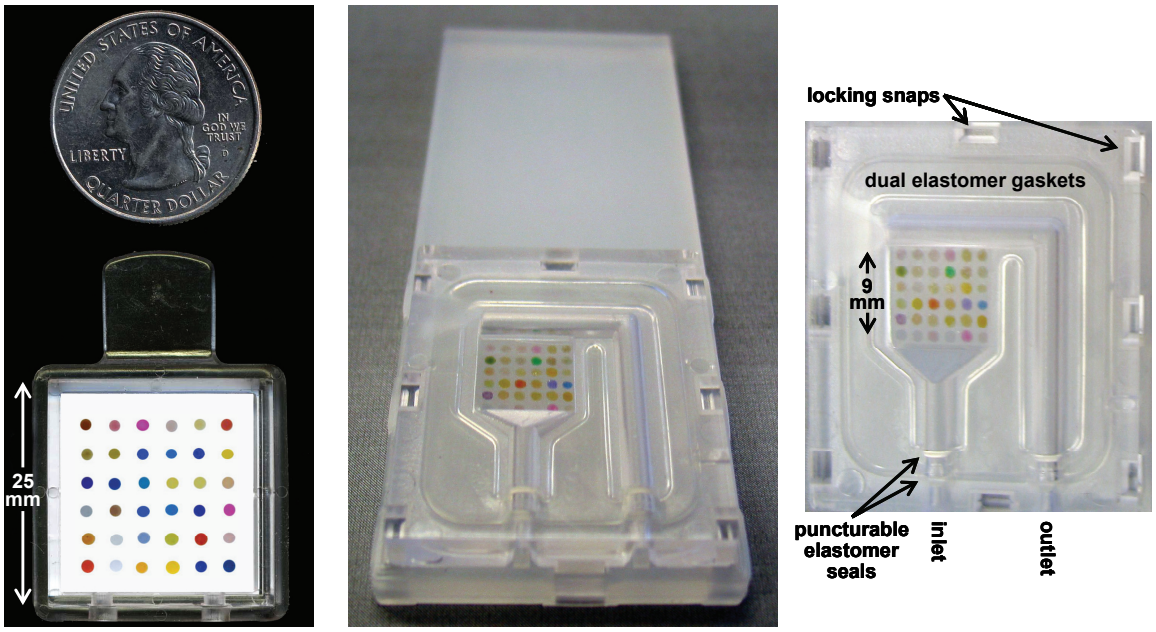

Figure S3. Photographs of cartridged colorimetric sensor arrays, all on the same scale. Left: standard disposable cartridge used in these studies; the inside dimensions are 22x22x4 mm with a total dead volume ~2 mL. Middle: disposable low dead-volume self-sealing cartridge with the colorimetric sensor array printed directly on a PET (polyethylene terephthalate) flat. Right: close-up of the low dead-volume printed colorimetric sensor array and sealing system. The total head-space volume of the low dead-volume cartridge is ~150 μL (i.e., >10-fold smaller volume). The cartridges are produced by standard injection molding.

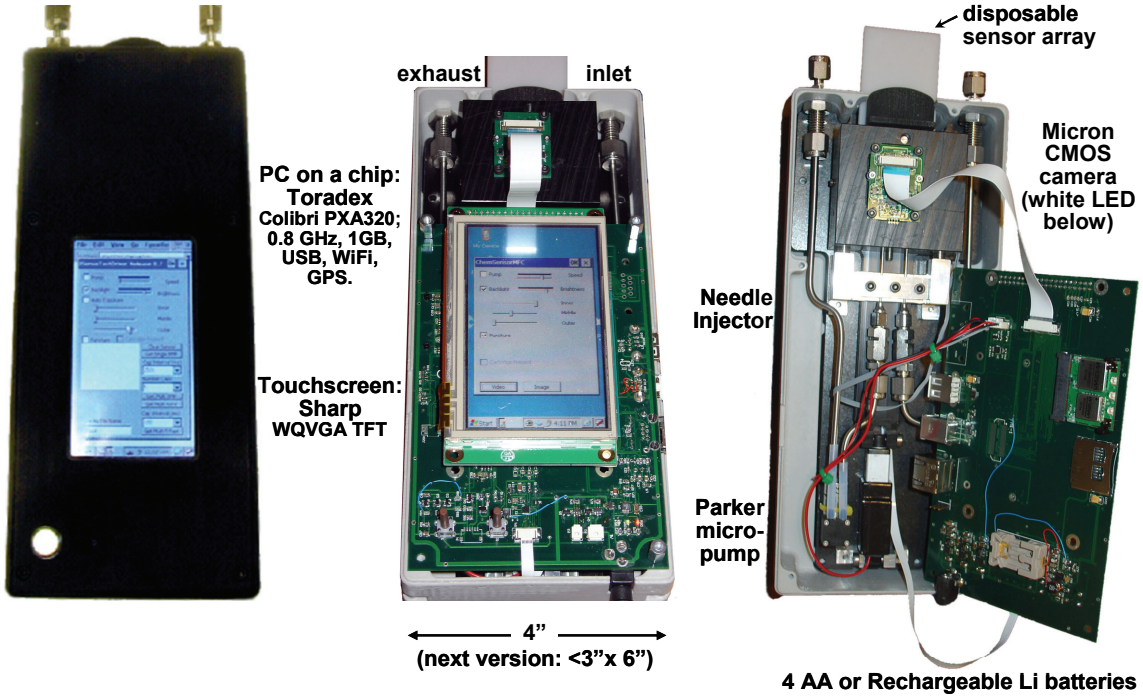

Figure S4. Labeled photographs of a functional handheld prototype of the optoelectronic nose. Left: the fully assembled unit; center: with top cover removed; right: top electronics board and touch-screen display lifted vertically to the right. The disposable sensor array used with this prototype is shown in Figure S3. The image quality of this prototype is considerably improved compared to the flat bed scanners used in this study (Epson Perfection V200); an improvement in S/N of a factor of 3 has been achieved even at this early stage of development.

Table S1. Chemoresponsive Colorants Used For Analysis of Coffee Aroma

Spot #	Name
1	5,10,15,20-tetraphenylporphine zinc
2	5,10,15,20-tetrakis(2,4,6-trimethylphenyl)porphine zinc
3	5,10,15,20-tetrakis(pentafluorophenyl)porphine zinc
4	2,3,7,8,12,13,17,18-Octaethyl-21H,23H-porphine zinc(II)
5	5,10,15,20-Tetraphenyl-21H,23H-porphine cobalt(II)
6	5,10,15,20-tetrakis(2,4,6-trimethylphenyl)porphine cobalt (II)
7	5,10,15,20-Tetrakis(pentafluorophenyl)-21H,23H-porphyrin iron(III) chloride
8	5,10,15,20-tetraphenylporphine chromium(III) chloride
9	Bromophenol Blue + TBAH
10	Bromocresol Green + TBAH
11	Bromocresol Purple + TBAH
12	Methyl Red + TBAH
13	Chlorophenol Red + TBAH
14	Nitrazine Yellow + TBAH
15	Bromothymol Blue + TBAH
16	Thymol Blue + TBAH
17	m-Cresol Purple + TBAH
18	Reichart's #3 + TBAH
19	Reichart's + TBAH
20	$Zn(OAc)_2$ + m-Cresol Purple + TBAH
21	$HgCl_2$ + Bromophenol Blue + TBAH
22	$HgCl_2$ + Bromocresol Green + TBAH
23	Crystal Violet
24	Eosin Y
25	Thymol Blue
26	Methyl Orange
27	Pyranilium
28	Tetraiodophenolsulfonephthalein
29	Rosolic Acid
30	Disperse Orange #25
31	Disperse Red
32	$Pb(OAc)_2$
33	Acridine Orange Base
34	$LiNO_3$ + Cresol Red
35	$AgNO_3$ + Bromophenol Blue
36	$AgNO_3$ + Bromocresol Green

TBAH: 1.0 M in 2-MeOEtOH
TsOH: 1.0 M in 2-MeOEtOH

Table S2. Color Difference Database (10 coffee samples plus a control, different roasting temperature testing, and different roasting time testing)

	R01	G01	B01	R02	G02	B02	R03	G03	B03	R04	G04	B04	R05	G05	B05	R06	G06	B06	R07	G07	B07	R08	G08	B08	R09	G09	B09
Control T-1	0.477278	0.254095	0.121735	-0.373917	-0.324631	-0.191315	-0.01738	0.617401	-0.44928	0.704346	1.857972	0.347824	-0.110153	2.249275	0.866669	-0.669556	0.21943	0.113637	0.007843	-0.097951	-0.203745	-0.309539	-0.415332	-0.521126	-0.62692	-0.732714	-0.838508
Control T-2	0.880184	1.329463	0.576813	0.631882	-0.524628	-0.41449	-0.518829	0.626083	-0.426086	-0.246368	-0.06665	-0.231873	0.197098	1.515942	0.475372	-0.072464	0.555943	0.615652	0.675361	0.73507	0.794779	0.854489	0.914198	0.973907	1.033616	1.093325	1.153035
Control T-3	0.749248	0.99998	1.031876	0.939117	-0.46666	-0.60289	0.394211	0.478256	-0.01738	0.162308	0.341996	0.814499	-0.510147	1.498558	0.562317	-0.13913	0.194781	0.111302	0.027822	-0.055657	-0.139136	-0.222616	-0.306095	-0.389575	-0.473054	-0.556533	-0.640013
Control T-4	-0.194692	-0.317876	0.017395	-1.481155	-0.228973	-0.260864	-1.550735	1.628983	-0.518829	0.081161	0.681151	0.162323	-0.153625	0.655075	0.295654	0.118835	0.324343	0.360574	0.396804	0.433034	0.469265	0.505495	0.541725	0.577955	0.614186	0.650416	0.686646
Control T-5	-0.86377	2.205795	-0.614492	0.162323	0.77681	-1.495651	0.182602	2.223183	-2.324646	0.104355	-0.478256	1.518837	0.292755	1.353622	0.414494	0.820297	0.411591	-0.449272	2.144928	-2.289856	-1.342026	3.110153	-1.194199	-2.336233	1.533333	1.455074	-2.962326
EOCCR T-1	-2.707253	-0.507248	-1.202899	-0.510147	5.765213	-10.30725	1.431885	4.553627	-6.168121	1.484055	0.237671	0.307236	1.13623	0.976822	-0.150726	-0.153625	-0.098549	2.075359	0.710144	-1.742035	-4.310143	-1.695648	0.582611	-1.550726	2.144928	-8.715942	-5.75943
EOCCR T-2	-2.121742	3.011593	-0.202899	-1.524643	7.733337	-11.68406	0.849274	5.289856	-9.49855	0.600006	-0.220291	-0.660858	1.684067	0.023193	-0.156525	0.504349	-0.263771	1.771015	0.672455	0.927536	0.162319	-2.005798	1.588409	-1.765219	1.571014	-6.582609	-9.208694
EOCCR T-3	-1.350723	1.640579	-0.04058	0.27536	3.156525	-3.736229	0.199997	2.765221	-5.301453	2.182602	1.942032	3.486969	0.495651	-1.057968	0.17971	0.753616	-0.373917	0.742027	0.756516	0.802902	0.234783	-0.057968	0.67247	0.200001	1.24058	-6.336231	-8.72464
EOCCR T-4	-2.092758	1.918842	-0.228985	-0.623184	5.057968	-11.40869	1.066681	4.591301	-8.611588	0.75943	0.817383	1.133331	0.904358	0.513046	-0.194199	0.72464	-0.237679	0.449276	0.976807	0.828979	0	-1.08696	0.895645	-0.779711	2.82029	-7.481159	-6.620285
EOCCR T-5	-0.597107	2.623192	-0.724638	-0.895645	6.947823	-8.68985	0.594208	3.794197	-5.553635	1.066666	0.91304	-0.50145	1.443481	0.944931	2.495651	1.194199	-2.976807	-0.837681	1.298538	1.002899	-0.026089	-0.298553	0.457977	-0.982609	1.930435	-7.055073	-6.591309
FCR T-1	-1.168114	2.640579	-1.64058	-2.721741	7.428986	-11.3884	-0.101456	3.486954	-7.588409	-0.344925	-0.005798	-0.857971	0.243484	0.281158	-1.736229	-1.028992	-0.327538	1.231884	0.579712	0.460861	0.243477	-0.86087	0.008698	0.597101	3.086957	-6.640579	-6.289856
FCR T-2	-1.510147	1.075359	-1.350725	-2.286957	8.066673	-10.95652	1.110138	3.884056	-6.915939	-0.055069	0.817383	1.10144	0.744934	-0.034775	-0.547829	-0.568115	-1.023193	2.185509	0.084045	0.115936	0.620289	-0.608688	-0.623184	0.127537	4.342029	-6.028988	-6.475357
FCR T-3	-1.533333	2.110146	-0.750725	-1.36232	6.17971	-9.052177	-0.402908	3.701454	-6.507248	0.318832	0.831879	-1.368118	-0.200012	-0.614487	-0.41449	-0.55072	-0.1884	1.455074	1.05217	-0.231888	0.11594	-0.055069	0.32753	-0.49855	3.857971	-5.492756	-4.794205
FCR T-4	-1.530441	3.22319	-1.571014	-3.828979	14.14493	-17.02609	0.779709	6.521744	-11.05798	0.440582	0.852173	-0.13623	1.382599	-1.272461	-0.260864	-1.762329	-0.773918	2.547825	0.707245	0.252167	0.171017	0.313034	0.01738	0.675364	3.66087	-6.373913	-1.388412
FCR T-5	-2.553619	3.304348	-0.881159	-2.347824	12.60869	-16.85796	-0.86087	5.002899	-8.782608	0.953629	-0.127533	1.663757	1.133331	-0.60289	-0.382599	-0.373901	-0.228981	2.74493	0.069565	1.066666	1.127537	1.08696	1.243484	1.756523	1.846377	-5.765217	-0.043472
SER T-1	-3.83913	2.521736	-0.707246	-3.605804	12.84348	-17.53912	-0.324631	5.640579	-10.97391	0.518845	-0.350723	-0.107239	-0.44928	-0.098541	-0.707253	-1.762314	-0.110146	1.992462	-0.043488	-1.028976	0.423195	-0.924637	-0.081161	0.744926	3.046377	-6.591305	-4.739136
SER T-2	-4.539131	1.220291	-2.327536	-4.695648	13.51884	-21.02898	-0.524628	6.347824	-11.34203	-0.950729	-0.336227	-0.982605	-0.373917	-0.014496	-0.365211	-2.50145	-0.057976	2.086956	-0.110153	-0.446381	-1.107246	-1.286957	0.040573	0.069565	3.194203	-7.310146	-3.765213
SER T-3	-4.388405	3.921738	-1.356522	-7.220276	16.91014	-18.48695	-0.46666	9.417389	-13.83768	-0.162323	-0.191315	0.200012	-1.663757	-0.805801	-1.573914	-4.240585	0.234783	4.440582	1.130447	1.211594	0.388405	-1.240585	-0.573898	0.121739	3.031884	-6.82029	-5.547821
SER T-4	-4.373917	4.330433	-3.049275	-6.286957	19.92173	-24.64928	-0.228973	11.23768	-18.829	-0.043472	-0.41449	-0.713043	-0.31015	-0.295654	-1.150726	-4.347824	-1.031883	2.944931	-0.202911	0.359421	0.417393	-0.982605	0.814499	-0.475363	2.811594	-6.272465	-3.950714
SER T-5	-2.63768	2.913044	-1.544927	-5.49855	14.88985	-20.13043	-0.388412	7.356522	-13.68985	-0.623184	-0.60289	-0.249283	-0.428986	0.765228	-0.426086	-2.959412	-0.831886	1.678261	0.043488	-0.072464	-0.214493	-1.182602	0.336227	-0.069565	3.011594	-6.70435	-3.130432
SSR T-1	-2.797096	2.971016	-0.617391	-4.408707	11.74203	-17.4	-0.753632	6.173912	-10.48697	-1.124634	-0.260864	-0.289856	-1.402893	-1.173904	-1.205795	-2.927536	-1.962318	2.011593	-0.13913	-0.197098	0.324638	-0.446381	-0.518845	0.579708	4.307246	-5.371017	-1.805786
SSR T-2	-4.82029	3.759422	-0.423188	-6.405792	18.45797	-20.34782	-0.446381	7.423187	-11.06087	-0.284058	-0.542038	-0.359421	-1.008698	1.205795	-1.98262	-3.800003	-1.602898	3.49855	-0.733337	-0.463776	-0.136234	-0.77681	-0.715942	0.756519	5.173913	-5.846378	-2.924637
SSR T-3	-2.397095	3.54493	-1.031884	-5.304352	15.91594	-19.8174	1.310135	8.785507	-13.80579	0.823181	0.565216	0.382614	0.60289	1.098541	-0.855072	-2.475372	-1.81739	1.811592	1.127533	0.988411	0.988407	0.353622	1.072464	0.713043	3.704349	-5.194202	-2.41449
SSR T-4	-4.304352	2.689857	-1.881159	-4.915939	15.16522	-20.90145	-0.26088	9.18261	-15.95651	0.069565	-0.197113	-0.173904	-1.228973	-1.947815	-3.58551	-1.953629	-2.176811	2.643478	-0.608704	-0.231888	0.307251	-1.869568	-0.214493	1.628986	4.544928	-5.318844	-2.620285
SSR T-5	-3.211594	4.171013	-0.223188	-5.443481	16.88117	-23.24348	-0.918839	9.446381	-16.79419	-1.043472	-0.559418	-0.681168	-1.50145	-0.756531	-2.44928	-1.678268	-2.704353	2.553623	0.304352	0.255081	-0.107246	-0.092743	-0.272476	0.153625	3.043478	-5.991302	-0.171021
SCR T-2	-2.675362	4.686958	-2.342029	-3.823196	18.18261	-20.61159	1.313034	5.631882	-8.695648	1.072464	0.530441	0.194199	0.292755	0.91304	-1.118835	-1.840576	-0.591305	2.13913	0.979706	1.052185	0.678261	0.237686	1.269562	0.150724	1.771015	-9.142029	-5.344925
SCR T-1	-0.510139	2.602898	-2.672464	-2.086945	12.04058	-17.31014	0.243484	5.162323	-8.342041	1.255081	0.556519	0.107239	-0.426086	0.936218	-1.397102	-2.342026	-0.228989	0.539131	0.811584	0.875366	0.075359	0.333328	0.73912	-0.301449	1.643478	-8.49855	-2.399994
SCR T-3	-4.434784	1.200001	-3.463768	-4.223175	13.9884	-21.84058	1.608704	7.040581	-12.62318	2.031876	0.199997	-0.582611	0.437683	0.936234	-3.878258	-2.005798	-0.936234	2.481159	0.718842	-0.452179	-3.805798	-0.182602	0.976807	-0.47826	0.188406	-8	-1.492752
SCR T-4	-2.014488	2.423187	-1.452174	-2.428986	13.70145	-19.15246	0.518845	4.295647	-6.553619	0.77681	0.608688	1.330429	0.892761	0.452179	-1.32753	-0.631882	-0.643478	1.689854	0.072464	0.446373	0.582607	0.3797	0.295654	0.417391	1.730435	-8.634781	-0.556519
SCR T-5	-2.675362	3.837681	-0.82029	-5.86377	18.75073	-20.81449	0.837677	6.437683	-8.901459	0.936234	0.739136	-1.05217	-0.133331	1.034775	-2.04348	-2.342026	-0.660873	2.130436	0.156525	1.278259	1.049274	-0.043472	0.446381	-0.008696	0.66087	-8.255074	-0.014496
EOCHN T-1	-2.072464	1.220291	-0.017391	-2.834778	4.260872	-11.12174	-0.402893	2.927536	-7.156525	-0.605789	-0.13623	-1.336227	1.571014	2.147827	-0.301445	-1.333328	-1.579708	0.382608	0.753616	0.86377	1.002899	-0.530426	-0.788406	0.918839	4.04058	-5.808697	-5.336227
EOCHN T-2	-2.397102	2.927536	-0.063768	-2.553619	9.927544	-17.10436	-0.50145	4.478256	-9.417389	0.269577	-0.263779	-1.872467	-0.281158	0.518845	-2.562317	-1.553619	-1.944923	1.45507	0.588409	0.31015	0.518837	-0.828995	-0.069565	-0.171017	3.924638	-6.695656	-4.150726
EOCHN T-3	-2.162315	2.826084	-0.092754	-3.246368	10.13043	-12.84348	1.199997	5.994209	-9.452179	0.066666	0.205795	0.162323	-0.344925	0.63768	-1.39711	-2.008698	-2.211594	0.452175	-0.376816	-0.234772	-1.828983	-0.165222	0.956512	3.382607	3.623188	-6.434784	-5.895645
EOCHN T-4	-1.86087	2.02898	-0.269565	-2.918839	8.072464	-13.47537	-0.684067	3.872459	-8.130432	-0.843475	-0.675354	-0.686966	-0.142029	-0.127533	-1.559433	-1.011597	-0.933334	1.043476	0.191315	0.226089	-0.150726	-1.118835	-0.072464	-0.292751	3.333333	-5.391304	-5.028992
EOCHN T-5	-1.655075	2.573914	-0.057971	-2.188416	9.489853	-16.68986	0.455063	7.275368	-13.29565	1.849274	0.707245	0.055069	1.550735	1.110153	-2.385498	0.460861	-1.321739	0.150726	-0.179718	-0.492752	-1.295654	-0.104355	-0.03479	-0.565216	4.359421	-6.985504	-5.13913
MHORD T-1	-0.797096	-0.599998	-2.402899	2.405792	2.907242	-8.026093	3.286957	5.284065	-6.371002	3.089859	1.023193	-0.260864	2.666672	1.371017	-1.49855	2.457962	0.808693	1.478264	3.255081	1.72464	-1.689857	2.886948	1.330429	-1.495655	4.849275	-4.484058	-3.434784
MHORD T-2	-1.611603	2.481155	-1.011594	-0.756516	9.339127	-12.47536	1.434784	5.768112	-9.933334	1.379715	0.924637	0.060867	0.655075	1.576813	-2.730438	0.744934	-1.139137	2.446373	1.469559	1.588394	0.620285	1.382614	0.753632	0.565216	3.771014	-5.704346	-1.026093
MHORD T-3	-1.400002	2.492752	-0.417391	-1.495651	13.11304	-18.29276	1.565216	7.942024	-11.89276	1.660873	1.011581	-0.739136	1.414505	1.266678	-3.72464	1.002899	-1.54493	-1.086952	2.159424	1.75943	0.263771	0.869568	0.53624	-0.524635	5.776812	-6.510143	-4.826096
MHORD T-4	-1.640579	2.611591	-0.115942	-2.976807	12.03768	-14.4058	1.655075	5.892754	-9.547821	1.156509	0.86087	-0.286957	0.695648	1.255066	-2.020294	-0.066666	-0.521744	1.849277	0.718842	1.156509	0.617393	0.695663	0.234787	0.744926	4.594203	-5.886959	-3.49855
MHORD T-5	-2.202896	2.54203	-0.142029	-3.55072	12.15073	-17.48116	0.121735	6.785507	-11.29565	-0.188416	-0.36232	-0.281158	-0.904343	-0.220291	-2.008682	-2.510147	-1.527542	1.895653	0.785507	0.63768	0.124638	0.043488	-0.87825	0.492752	4.315942	-6.237679	-1.237686
FGSD T-1	-2.739136	0.576813	-0.211594	-0.373917	0.730438	-0.907249	0.576813	1.933334	-2.797104	-0.530441	-0.281158	0.89566	-1.249268	-0.811584	0.342026	0.437683	0.863766	2.736233	0.681152	0.072464	0.692753	0.089859	0.014496	0.162319	1.939131	-7.626087	-9.304352
FGSD T-2	-0.104347	2.040581	-2.043478	0.631882	3.431885	-2.828979	1.031876	2.733337	-4.947815	3.171005	2.298553	1.278259	1.478256	0.524643	-0.055069	1.973907	-0.521736	1.768116	0.866669	1.089844	-0.521736	0.904343	0.542023	0.031885	3.315942	-8.084057	-11.75942
FGSD T-3	-0.63768	1.594204	-0.469565	0.939117	0.295654	-1.710144	0.017395	3.31884	-2.063766	-1.263763	-1.1884	-0.623184	-2.266678	-3.921738	-3.620285	-2.86087	-3.344929	-0.379707	2.321732	0.504349	0.13913	1.023193	0.278267	0.791304	2.515942	-7.226088	-11.68695
FGSD T-4	-1.376808	1.65797	-0.773913	-1.481155	1.257973	-5.173912	-0.44928	2.199997	-5.715942	-0.452164	-1.011597	-2.686951	0.756516	-0.327545	-1.62899	0.321732	-0.707245	2.034782	0.510147	0.797104	0.249275	-0.623184	-0.026093	-0.808697	-0.6	-10.87247	-10.2058
FGSD T-5	-0.965218	-0.008698	-0.837681	-0.817398	0.730431	-1.704353	-0.426086	1.144928	-1.930435	-0.269562	-0.214493	-0.342026	0.026077	-0.927536	1.063766	-0.669556	-0.495651	1.565216	-0.617386	-0.101448	-0.07246	0.428986	0.53624	1.849276	0.73913	-6.165216	-8.281158
MHOR T-1	-0.968117	1.869568	-0.014493	-1.005798	5.313049	-8.582611	-0.01738	1.713043	-3.10434	1.104355	0.13623	1.689865	0.988419	-0.066666	0.55072	-0.072464	-0.675362	1.333332	0.808701	0.823189	-0.431885	0.623199	0.115944	0.510144	0.48116	-9.060871	-5.104355
MHOR T-2	-1.156517	1.614491	-0.307246	-2.41449	9.028984	-11.59421	-0.518829	3.852173	-5.269562	0.518845	0.910141	0.063766	0.704346	0.686966	0.710144	-0.13913	-2.072464	1.34203	0.211594	1.437683	0.779709	-0.214493	1.026093	-0.188404	1.333333	-9.205795	-8.820297
MHOR T-3	-1.756523	3.260872	-0.35942	-2.211594	10.48116	-12.3971	0.394211	4.347824	-6.782608	0.692749	1.301453	-0.469559	-0.246368	0.956528	-1.118843	0.118835	-0.45797	1.756523	0.1884	1.321747	-0.510147	0.701447	1.13623	1.09565	1.93913	-9.492756	-9.649261
MHOR T-4	-2.27536	2.811592	-1.492754	-3.005798	11.85507	-14.3855	-1.550735	3.649277	-7.121735	0.617401	-0.518845	1.13913	0.162308	-0.371002	-1.060883	-0.301437	-0.837677	1.907246	-0.075363	1.53334	-0.463768	0.026077	0.22319	0.310144	-0.208695	-9.173912	-3.284058
MHOR T-5	-1.657974	3.588402	-1.733333	-3.379715	15.50435	-19.1826	1.005798	6.556519	-10.56523	0.626083	-0.063766	-0.162323	0.081161	0.828995	-1.660873	-2.214493	-1.889854	2.968117	1.333328	1.055069	0.313042	-0.284058	-0.005798	0.823189	1.110145	-11.14493	-6.692749
CMT T-1	-2.521744	0.026085	-2.368116	-0.843475	5.73333	-12.94492	0.898544	4.289856	-8.159424	0.478256	-0.13913	-0.742035	-0.681152	-0.759415	-1.646378	-1.55072	-0.243484	1.347828	0.733322	0.507248	0.075363	-2.199997	0.176819	-0.779711	2.985507	-5.237679	-6.165222
CMT T-2	-3.205803	3.486958	-0.066667	-4.107239	12.42899	-16.71015	0.96521	8.197098	-10.98262	1.628983	0.55072	1.782623	2.278259	3.94783	3.13623	-1.933334	-0.762321	1.049274	0.10434	0.055069	0.147827	-1.834778	0.6203	-0.365217	2.730435	-5.997101	-7.002899
CMT T-3	-2.533333	2.747826	-0.130435	-3.779709	10.53043	-18.07246	0.979721	7.028992	-12.1826	0.217392	0.255081	0.347824	-0.110153	0.973907	-2.710144	-1.037674	-0.576813	1.869564	0.431885	-0.231873	0.121735	-0.521744	0.96521	0.489855	3.518841	-6.539127	-3.513046
CMT T-4	-5.400002	1.452179	-3.440579	-4.672455	15.74782	-23.43479	0.886963	11.27246	-15.39421	1.113052	0.495651	-0.231873	0.197098	0.77681	-2.50145	-2.22319	-0.344933	2.321739	0.162323	-0.153625	-1.15942	-3.542023	-0.214493	-3.130434	3.994203	-5.223186	-4.39711
CMT T-5	-3.684059	2.753624	-1.646377	-4.985504	14.8087	-21.68406	-0.837677	11.26956	-17.41159	0.188416	-0.226089	0.814499	-0.510147	-1.652176	-3.257965	-3.168121	-0.127541	2.933334	-0.008698	0.707245	0.631886	-2.736237	0.686966	0.866667	4.344928	-6.368118	-4.240585

Roasting Temperature Test

	R01	G01	B01	R02	G02	B02	R03	G03	B03	R04	G04	B04	R05	G05	B05	R06	G06	B06	R07	G07	B07	R08	G08	B08	R09	G09	B09
NR T-1	-1.979713	2.205795	-1.64058	0.628998	0.098549	-1	-0.371017	3.214493	-3.272461	0.507248	0.031891	0.214493	-0.040573	0.25798	1.823189	1.626083	-0.176811	3.434784	0.008682	-0.197098	0.414494	0.402901	0.886963	3.199997	2.817391	-8.313042	-8.191299
NR T-2	-1.515945	2.31884	-2.031884	-0.040588	0.791306	-2.211594	0.478256	2.944923	-4.721741	0.721741	0.336227	-0.87825	-1.095642	-0.582596	1.828995	-0.347824	-0.565224	1.849274	0.898544	0.643478	-0.469566	-0.77681	1.115936	2.785507	1.971014	-7.530434	-8.321732
NR T-3	0.144928	2.640579	-0.226087	2.168121	1.782608	-0.217392	2.055084	2.478264	-1.391312	2.544937	1.408691	0.347824	2.281158	1.257965	3.45797	1.156509	0.805801	2.313046	1.156525	0.997101	-0.539131	3.724632	4.278259	4.281158	1.257971	-6.399998	-5.600006
NR T-4	-0.50145	2.495651	-1.869565	0.301453	0.730438	-0.31015	0.159424	1.58551	-3.67247	0.107254	-0.014481	-2.115936	-1.640579	-0.533325	2.417389	-0.72464	-0.620293	2.188408	0.289856	0.576813	1.533333	0.875351	1.069565	4.144928	2.828985	-8.536232	-7.605804
NR T-5	-1.089859	2.611591	-1.933333	-0.681168	0.272469	-1.049286	0.602905	3.742027	-5.023193	0.849274	-0.202896	0.249283	-0.313034	-0.768127	1.063766	-0.350723	-1.049278	2.721737	0.718842	1.171021	0.489857	1.110146	0.857971	3.466663	2.281159	-9.855072	-8.857971
180C T-1	-1.240585	-2.066666	-1.208694	-0.281158	-0.066666	-2.118843	0.156509	2.527542	-3.556519	-0.660858	-1.060867	-2.666656	-0.344925	0.028976	1.002892	-0.228989	-1.191299	1.049274	-0.049286	0.301453	0.860867	0.504349	0.313042	3.301449	3.788405	-9.052174	-3.481155
180C T-2	-1.342026	2.118843	-2.437681	0.437683	0.252182	-3.478271	0.008698	2.49855	-4.707245	-0.675354	-0.68985	-1.347824	0.113052	-1.162323	2.127533	-0.057968	-0.68116	2.828987	-0.072464	0.544922	-0.411591	0.153618	1.611595	2.724636	3.828985	-8.756523	-4.176819
180C T-3	-1.56813	2.713043	-1.440579	0.614502	1.040573	-2.440582	0.669556	3.400002	-3.747833	1.568115	0.168106	-1.921753	-0.081161	0.211594	1.046371	-0.373917	-1.298546	2.24638	0.626083	0.562325	1.208694	0.13913	0.634781	2.90435	2.855072	-8.440578	-4.855072
180C T-4	-1.797096	1.86087	-0.713043	0.460876	2.559418	-2.240585	-0.872467	2.971008	-5.782608	-0.202896	-0.565216	-1.211594	-1.057968	-1.066666	1.41449	-0.347824	-0.617393	2.54203	0.159424	0.150726	-0.214493	1.669563	1.350723	3.2029	3.698551	-8.640579	-5.301437
180C T-5	-2.539139	2.327534	-2.292753	-0.431885	1.794205	-3.382614	-0.176804	2.707245	-4.397095	0.307251	-0.782608	0.382614	1.049271	-0.12175	2.475357	-0.779709	-2.113045	1.727535	0.823196	-0.034775	-1.092758	-0.110146	1.521736	1.052174	3.518841	-8.918839	-4.968124
200C T-1	-1.77681	2.217392	-1.382609	0.05217	4.147827	-5.666672	0.559418	3.191299	-3.25798	1.278259	0.118835	-0.791306	1.005798	0.733337	1.791306	0.756531	0.17971	2.571014	1.359406	0.547829	-0.350723	0.121735	1.652176	0.460869	2.921739	-5.924637	-4.321747
200C T-2	-2.208694	1.634785	-0.515942	-0.478256	3.449272	-6.153625	-0.066666	3.194202	-4.150726	0.49855	0.794189	-0.718842	0.231888	-0.069565	3.626083	0.339127	-0.089855	2.640579	0.524635	0.156525	0.202898	0.252174	-1.072464	-0.333336	3.536232	-6.400002	-3.837677
200C T-3	-1.1884	2.234783	-0.208696	-0.904343	2.875366	-6.675369	-0.318832	3.344929	-3.98262	-1.15361	-0.46666	-0.634781	0.489853	-0.542023	2.49276	0.576813	0.805798	2.898552	1.26667	0.857971	0.976812	1.643478	0.849274	0.895653	3.826087	-5.831886	-2.797104
200C T-5	-0.875366	2.875362	-0.765217	-0.457977	4.197105	-4.043472	0.1884	4.918839	-4.947815	0.263779	1.153625	0.028992	0.356522	1.211594	1.791306	-0.078247	0.640587	2.515942	1.701447	0.730431	0.776814	-1.788406	1.45507	-1.721737	4.469565	-7.072464	0.295654
200C T-4	-1.153625	2	-0.162319	-0.939133	2.255081	-6.834793	0.185501	3.608696	-6.008698	1.27536	0.359421	-0.121735	0.211594	0.779709	2.055069	-0.423187	-0.45507	1.484055	0.237686	0.286957	0.576809	-2.353622	1.886948	-2.078262	3.486957	-6.014492	-1.028992
210C T-1	-1.365219	2.504345	-0.066667	-0.617386	1.185509	-3.814484	0.339127	1.736233	-4.388412	0.075363	0.478256	-1.675354	1.385498	0.423187	2.742035	0.886948	-0.246376	1.04348	1.243477	0.666664	1.014492	0.13913	2.301445	0.336231	3.098551	-5.507248	-4.22319
210C T-2	-2.373917	0.695656	-1.31884	-0.631882	1.069565	-3.208694	-0.130432	2.252174	-4.255066	-0.605804	-1.10434	-0.869568	-1.292755	-1.695663	1.205795	-1.373917	-2.104347	1.492752	0.03479	-0.13913	-0.211594	-1.405807	0.556526	-0.776814	2.988406	-5.646378	-7.03479
210C T-3	-2.657974	-0.118843	-1.507246	1.107254	0.44928	-4.944931	1.150726	-1.437679	-3.846375	0.002899	-0.550735	-0.843475	1.571014	-0.08696	3.026093	0.382599	-0.266666	1.205797	0.289856	-0.484062	-2.405796	-0.539131	-0.428986	-1.110146	4.431884	-3.643478	-16.37972
210C T-4	-1.194206	0.144928	-1.686956	0.927536	0.834778	-1.643478	1.231888	1.057976	-3.730438	0.452179	-0.533325	-0.05217	1.913055	-0.376816	0.869568	0.486954	0.043476	2.913044	1.950729	-0.898544	-1.49855	-1.721733	0.176811	0.194202	4.043478	-5.550724	-7.092743
210C T-5	-1.628983	1.918839	-0.663768	0.298553	1.423187	-4.744926	0.814499	2.852173	-2.840576	0.773911	-0.434784	-1.857971	1.60289	-0.779709	2.452171	0.657974	-1.65797	0.008694	0.672462	-0.275368	-0.176813	0.347824	1.269562	-0.13623	4.095652	-5.481159	-7.252182
220C T-1	-1.194214	0.437675	-3.443479	0.588409	2.330429	-6.820297	1.008698	2.965218	-6.092758	0.660873	-0.339127	-0.231888	-0.075363	-0.13913	-0.426086	0.13913	-0.428986	1.756523	-0.17392	1.142029	-1.176811	-1.744934	0.715942	-1.895649	4.956522	-5.623188	-6.953613
220C T-2	-2.162315	1.086956	-0.594203	-1.278259	1.771019	-4.295662	0.12175	2.330433	-3.13623	1.063766	-0.544922	0.515945	0.881165	-0.107254	3.582611	-0.472458	-0.628986	1.568115	0.350723	0.881157	0.666666	-0.802902	0.657967	0.808697	3.426087	-6.333332	-5.133331
220C T-3	-2.040581	2.388409	-1.330435	-0.907242	2.469566	-3.666656	0.037674	2.77681	-3.698547	0.614487	-0.391296	0.721741	-0.127548	0.266678	1.153625	-1.162323	0.133331	2.301449	0.011597	0.828979	0.211594	-1.400002	1.342026	-0.617393	2.646377	-6.049278	-2.759415
220C T-4	-1.228981	2.330437	-0.831884	0.330429	3.744926	-6.37101	0.020279	2.382607	-3.550735	0.234772	0.185501	-1.466667	0.023193	-1.05217	2.400002	0.49855	-0.707245	1.991304	0.017395	0.527534	-3.918839	-0.94783	1.742027	-0.724636	3.597101	-5.518841	-6.597107
220C T-5	-1.800003	1.521736	-0.318841	-0.211594	2.669563	-5.400009	0.884064	6.350723	-2.478256	0.750732	-0.402908	-0.484055	-0.130432	-0.733337	1.205795	-0.852173	-1.466667	0.921738	0.742035	0.040581	0.994202	-1.510147	0.997101	-0.457973	2.878261	-6.217392	-1.240585
230C T-1	-2.573914	1.849277	-0.014493	-2.58551	5.605797	-11.77682	-0.391312	4.176811	-7.878265	0	-0.226089	-1.472458	-1.489853	-0.263763	0.443481	-0.924637	-1.547829	2.257973	1.457977	1.153618	0.779711	-1.385506	0.649277	-1.298553	2.907247	-6.266666	-6.913055
230C T-2	-1.142029	2.814491	-0.643478	-0.956512	9.486954	-20.04639	0.779709	7.660866	-12.91884	0.576813	-0.950729	0.831894	0.373917	0.411591	-1.417389	-1.150726	-0.602898	3.211594	0.243484	0.191307	0.70145	-2.663773	1.278259	-4.101448	2.744927	-7.147827	-6.388412
230C T-3	-1.373917	1.86087	-1.571014	-3.524643	7.602905	-16.1942	1.240585	6.118843	-11.27828	0.486954	-0.208694	0.428986	-0.550735	0.785507	-1.478271	-1.588394	-8.939133	-3.110146	1.086945	-0.336243	0.727535	-3.901443	0.614494	-2.82029	3.886956	-7.101448	-5.63768
230C T-4	-2.049271	3.739128	-2.478261	-0.194214	8.191315	-19.04347	0.605804	5.67247	-13.90146	0.973923	-0.431885	-0.65506	-0.014481	0.800003	-1.771011	-0.521744	-2.208702	2.101448	0.710144	0.765213	0.385506	-2.681152	0.655067	-3.881161	3.295652	-7.150723	-7.243484
230C T-5	-1.313042	1.530434	-0.278261	-1.72464	5.840584	-12.28985	-0.431885	6.197105	-10.17682	-0.49855	0.289856	-0.985504	-1.269562	0.655075	-0.684059	-2.063766	0.063766	2.628986	0.988403	0.176811	1.144928	-2.878258	0.936234	-1.379711	3.933333	-6.45797	-8.405807
240C T-1	-3.86956	5.052174	0.04058	-6.017395	18.93913	-24.2	0.237686	12.78261	-17.05798	0.530441	0.910141	-0.118851	-0.68985	1.657974	-1.594208	-3.443481	-2.330437	5.156517	0.524643	0.617393	0.742031	-9.356522	1.962326	-8.452171	4.342029	-7.771011	-5.272476
240C T-2	-4.162323	10.55362	-3.626087	-6.594208	20.11305	-27.33334	-0.460861	18.05797	-24.24638	0.591309	0.634781	-0.394211	-1.646378	1.724625	-3.507248	-4.10434	-2.686958	4.373909	-0.315948	1.834778	-0.371014	-11.85217	2.481163	-11.47247	4.544928	-7.211594	-7.228989
240C T-3	-3.959419	3.388405	-0.017391	-4.762314	17.10434	-27.2	-0.747818	9.072464	-16.30145	0.634781	0.107254	-0.886948	-1.791306	1.411591	-1.646378	-2.704346	-1.591305	3.217392	0.200012	0.359421	0.495651	-5.695656	2.443474	-5.762318	3.753623	-8.008694	-6.446381
240C T-4	-1.431885	6.156517	-2.782608	-5.110153	17.31593	-27.62608	-0.701447	13.4029	-22.83189	0.930435	0.776825	2.014496	-1.565216	1.608704	-2.292763	-3.13913	-1.573914	3.889854	1.466675	1.060867	0.605797	-8.159424	3.075363	-9.191307	3.794203	-7.275364	-3.950729
240C T-5	-1.831894	5.698547	-3.846376	-3.771011	17.36812	-29.03767	0.191315	15.6232	-23.50435	0.881165	1.556534	0.96521	-0.594193	2.10144	-4.292755	-2.962311	-0.991302	3.22319	1.133331	1.263763	-0.176811	-9.646385	3.052177	-10.66087	4.284058	-7.530434	-4.681152

Roasting Time Test

	R01	G01	B01	R02	G02	B02	R03	G03	B03	R04	G04	B04	R05	G05	B05	R06	G06	B06	R07	G07	B07	R08	G08	B08	R09	G09	B09
1min Roast T-1	-2.028976	1.771011	-0.466667	-0.078247	0.96521	-3.962311	-1.043472	2.32753	-3.44928	-0.481155	-0.257965	-0.565216	1.130432	-0.020294	1.095657	-1.834778	-2.857971	1.034782	-0.686951	0.081161	0.263767	-1.675354	-0.171013	0.014492	2.408695	-7.826084	-4.05217
1min Roast T-2	-0.846375	2.026093	-0.156522	1.066666	1.521744	-2.272461	1.553619	2.460861	-1.426086	1.330429	0.727539	1.13623	2.043488	0.640579	0.220291	0.637695	-1.249275	1.692749	0.049271	-0.040588	0.115944	-0.252167	0.884064	1.353622	1.733333	-5.936234	-3.159409
1min Roast T-3	0.597107	2.460869	-0.330435	-0.252167	1.811584	-3.118851	1.536224	3.614487	-2.953613	1.072464	-0.478256	1.31015	1.246368	0.333328	0.591293	0.25798	-1.875359	1.875359	-0.313049	-0.237686	0.084059	-1.385498	0.704353	0.556522	3.457971	-7.168118	-5.150726
1min Roast T-4	-1.333328	1.953629	-0.655072	0.310135	0.692749	-2.800003	1.869568	2.991302	-3.428986	0.318832	-0.124634	1.217392	1.284058	0.159409	0.365219	0.56813	-1.066666	1.124634	-0.342026	-0.599998	0.275364	-0.162323	0.289856	0.475361	2.556522	-7.321739	-4.344925
1min Roast T-5	-2.234779	1.620285	-0.672464	0.110153	1.214493	-2.591309	1.944916	2.533333	-2.50145	0.124634	-0.284058	1.411591	1.428986	0.046371	0.443474	0.701447	-1.643475	2.069565	-0.376816	-0.452179	0.971016	-1.31884	0.565216	0.15942	2.02029	-7.037682	-3.884064
5min Roast T-1	-2.049278	1.86087	-0.46087	1.272461	2.971016	-2.475372	0.168121	2.837685	-3.895645	0.753616	1.455078	-0.011597	-1.124649	0.985504	1.199997	0.36232	-1.075359	1.553623	0.927536	-0.191299	-0.034782	0.049271	0.55072	0.107246	2.715942	-5.165215	-8.118835
5min Roast T-2	-1.17971	1.110146	-0.055072	0.544922	2.881165	-2.081161	1.428986	2.657967	-3.872467	0.568115	0.295639	-0.756516	-1.82608	0.046387	1.307251	0.127533	-0.971016	1.84058	0.031891	0.800003	0.826088	0.576813	1.315941	0.307243	3.863768	-7.907246	-9.846375
5min Roast T-3	0.359406	1.759422	-0.933333	-0.63768	1.008698	-2.243484	1.371017	2.579712	-3.376801	1.704346	-0.055069	0.426086	-0.426086	-0.907242	0.165222	0.681168	-1.765213	1.878258	1.055069	1.014481	0.371017	-0.834778	0.431885	0.092751	3.860869	-7.576813	-6.884064
5min Roast T-4	-1.330429	1.066666	-0.394203	1.008698	1.50724	-2.017395	0.997101	2.994202	-3.234787	0.631882	-0.240585	-0.797104	0.399994	0.527542	-0.77681	-0.460876	-1.257973	1.06377	1.257965	-0.559418	1.246376	-0.626083	0.31884	0.95652	2.173913	-7.675365	-9.657974
5min Roast T-5	-1.472458	1.637688	-0.988406	-0.536224	1.124649	-2.228973	0.402908	2.875366	-3.376801	1.36232	-0.77681	0.736237	-1.014496	-0.41449	1.01738	-0.32753	-2.599998	0.724636	0.58551	0.211609	0.014488	-0.617386	0.356522	0.936234	3.275362	-7.275364	-8.959412
10min Roast T-1	-2.446373	2.104347	-0.22029	-0.411606	1.359421	-3.278259	-0.220291	2.515938	-3.857956	-0.463776	-0.721741	0.426086	0.115936	-0.759415	1.014496	-0.431885	-1.568119	2.481159	0.542023	0.614487	1.104347	-2.243477	-0.513046	-0.104351	2.144928	-6.892754	-6.765213
10min Roast T-2	-3.214493	1.739128	-0.582609	-1.023193	2.391304	-3.939133	1.898544	3.176811	-1.515945	0.605789	0.968109	0.211594	-0.031876	-0.115936	1.86377	0.315948	-0.295654	1.82029	0.91304	0.591301	0.675364	-1.208694	1.014496	-0.611595	2.608696	-5.585508	-10.72464
10min Roast T-3	-1.513046	1.655075	-0.173913	0.008698	3.434784	-5.513046	0.092758	3.402901	-6.127533	0.159424	0.565216	-0.866653	0.284058	0.002899	-0.991302	-0.953629	-1.649277	2.417393	0.591293	0.913048	-0.269566	-1.597099	0.704346	-1.533333	0.921739	-6.559418	-8.814484
10min Roast T-4	-2.005783	1.556519	-0.878261	-0.431885	2.217392	-4.26088	-0.823196	2.156525	-4.295654	-0.457977	-0.666656	-0.399994	-1.278259	-1.055069	0.371017	-0.985519	-2.559418	1.918839	0.510147	0.982605	-0.37101	-1.553619	0.330429	-0.411594	1.498551	-7.049274	-10.63478
10min Roast T-5	-0.808701	1.907242	-1.608696	0.020294	3.278275	-1.86087	0.153625	3.397102	-4.565216	-0.391312	-0.582611	0.855072	0.084061	-0.063766	1.536224	-0.721741	-1.159416	2.008698	0.6203	0.913055	0.730431	-0.947815	1.15361	0.539127	3.77971	-6.689854	-10.17392
15min Roast T-1	-1.194214	0.437675	-3.443479	0.588409	2.330429	-6.820297	1.008698	2.965218	-6.092758	0.660873	-0.339127	-0.231888	-0.075363	-0.13913	-0.426086	0.13913	-0.428986	1.756523	-0.17392	1.142029	-1.176811	-1.744934	0.715942	-1.895649	4.956522	-5.623188	-6.953613
15min Roast T-2	-2.162315	1.086956	-0.594203	-1.278259	1.771019	-4.295662	0.12175	2.330433	-3.13623	1.063766	-0.544922	0.515945	0.881165	-0.107254	3.582611	-0.472458	-0.628986	1.568115	0.350723	0.881157	0.666666	-0.802902	0.657967	0.808697	3.426087	-6.333332	-5.133331
15min Roast T-3	-2.040581	2.388409	-1.330435	-0.907242	2.469566	-3.666656	0.037674	2.77681	-3.698547	0.614487	-0.391296	0.721741	-0.127548	0.266678	1.153625	-1.162323	0.133331	2.301449	0.011597	0.828979	0.211594	-1.400002	1.342026	-0.617393	2.646377	-6.049278	-2.759415
15min Roast T-4	-1.228981	2.330437	-0.831884	0.330429	3.744926	-6.37101	0.020279	2.382607	-3.550735	0.234772	0.185501	-1.466667	0.023193	-1.05217	2.400002	0.49855	-0.707245	1.991304	0.017395	0.527534	-3.918839	-0.94783	1.742027	-0.724636	3.597101	-5.518841	-6.597107
15min Roast T-5	-1.800003	1.521736	-0.318841	-0.211594	2.669563	-5.400009	0.884064	6.350723	-2.478256	0.750732	-0.402908	-0.484055	-0.130432	-0.733337	1.205795	-0.852173	-1.466667	0.921738	0.742035	0.040581	0.994202	-1.510147	0.997101	-0.457973	2.878261	-6.217392	-1.240585
20min Roast T-1	-0.739128	2.205795	-0.562319	0.484055	5.49855	-9.168106	0.855072	5.037674	-7.124649	1.860855	0.504333	1.405807	1.353622	1.605804	1.231873	-0.371017	-1.759422	2.481163	1.443481	0.504349	1.365215	-1.910156	1.788406	-1.353626	2.298551	-8.423183	-9.513031
20min Roast T-2	-1.18261	2.385506	-1.078261	-0.602905	6.759415	-14.07246	1.681168	6.00869	-8.246384	0.26088	0.808685	1.069565	1.034775	1.255081	0.62899	-0.373917	-0.973915	2.486954	1.431885	0.933334	0.695652	-1.489853	1.811592	-0.704346	3.953623	-5.646378	-8.524643
20min Roast T-3	0.562309	2.573906	-2.657971	-1.872467	7.072464	-13.07826	1.069565	5.536232	-9.907242	1.162323	0.710144	-0.41449	0.260864	1.292755	-0.255066	0.298553	-1.124634	2.791306	0.713043	0.081161	1.376816	-2.837677	1.94783	-2.45797	1.672464	-7.684059	-7.382614
20min Roast T-4	0.704346	3.31884	-1.521739	1.199997	5.171013	-9.994202	2.237671	4.214493	-4.826096	2.930435	0.82608	0.150726	2.03479	1.084061	-0.266663	1.179703	-1.240578	2.127537	1.843475	-0.031883	-1.278259	-0.484062	2.069565	-0.68116	3.947826	-6.113041	-8.249268
20min Roast T-5	-2.310143	2.539131	-0.142029	-1.933334	7.927536	-13.03478	1.666672	6.579712	-9.582611	0.440582	1.417389	-0.924637	0.568115	1.605804	0.611595	-0.698547	-1.744926	3.092754	0.292755	0.631882	0.078262	-3.539131	1.643478	-1.759418	3.68116	-8.110146	-9.91304
45min Roast T-1	-5.559425	7.420288	-2.605797	-8.092758	26.15363	-31.04928	-1.124634	21.23188	-14.65797	-0.397095	-0.678268	-0.188416	-1.176804	0.918839	-3.1884	-4.988403	-2.994202	4.028992	0.547821	0.159409	0.588402	-13.61159	3.576813	-9.895653	4.023188	-3.901447	-15.51305
45min Roast T-2	-6.924637	6.808693	-2.113043	-10.0058	23.51594	-32.48116	-0.481171	17.78551	-15.58841	0.008682	-0.237686	-0.249268	-0.869553	1.634781	-1.504349	-4.823196	-2.773918	2.849274	0.142029	-0.260872	-0.043478	-13.48696	3.17971	-8.826086	5.611594	-4.727535	-16.91884
45min Roast T-3	-5.234787	6.962318	-1.518841	-11.68115	25.51883	-30.64347	-0.072464	20.30145	-14.2	1.002884	-0.6203	-0.588409	-1.289856	0.228989	-2.579712	-4.655075	-2.539127	3.443478	-0.130432	-0.756531	-4.086956	-14.64058	2.252182	-7.43478	5.043478	-4.930435	-16.82028
45min Roast T-4	-5	9.289856	-2.185507	-11.43189	27.08115	-30.08405	-0.75943	19.32754	-13.1739	0.382614	-0.611588	-0.243484	-1.481155	-1.113052	-4.028984	-4.721741	-4.066666	2.524639	0.657974	-0.666664	-0.243481	-13.57391	2.863762	-8.194202	5.295652	-3.85508	-14.36522
45min Roast T-5	-5.591301	7.243477	-2.130435	-9.020294	24.96522	-31.08695	-0.292755	18.47246	-15.12174	1.452164	0.10434	-0.518845	-0.973907	0.623184	-1.927536	-3.753632	-2.220291	3.652176	1.017395	1.121735	-0.220289	-12.97102	2.591309	-8.733334	5.898551	-3.321739	-13.88985
3hr Roast T-1	-4.527534	5.104347	-2.289855	-3.971024	19.09276	-26.47536	0.68985	13.72754	-16.34204	1.915939	1.031891	-0.197098	0.118851	2.544937	-1.750725	-1.614502	-2.197098	3.440578	1.321747	0.930435	-0.252174	-8.640579	3.411591	-6.65797	4.675363	-6.565216	-9.440582
3hr Roast T-2	-3.107239	8.63768	-1.794203	-5	21.05507	-29.35362	1.86087	12.07536	-22.3826	2.13913	0.539124	1.014481	0.150726	2.191299	-2.176804	-3.315948	-1.924637	3.85218	1.988403	1.724632	0.924641	-8.17971	4.536232	-8.2029	4.324637	-5.524635	-8.817398
3hr Roast T-3	-1.640579	7.197098	-3.22029	-3.788406	20.93914	-30.29855	1.307251	18.16232	-22.85507	1.666672	-0.095642	-1.202896	1.939133	2.704361	-4.147827	-2.542038	-1.588409	3.898552	4.771019	3.791306	1.771015	-7.084053	3.162315	-6.942032	3.684058	-5.533333	-5.924637
3hr Roast T-4	-3.910149	8.478264	-2.736232	-6.953613	23.25507	-30.55653	0.020294	18.73043	-23.55653	0.492752	0.115936	-0.081161	-0.284058	0.884048	-2.034782	-3.400009	-2.292755	3.533333	-0.214493	-0.417397	0.278263	-7.408699	3.515938	-9.936234	3.208696	-5.799999	-11.12463
3hr Roast T-5	[illegible]	[illegible]	-1.504348	-5.884064	22.86087	-28.3942	2.107239	16.35652	-21.62898	2.27536	0.391296	-0.220276	0.226089	2.228989	[illegible]	[illegible]	[illegible]	4.168118	2.420288	0.866661	1.15942	-9.608696	4.800003	-9.542027	5.089855	-5.921738	-8.837677

	R10	G10	B10	R11	G11	B11	R12	G12	B12	R13	G13	B13	R14	G14	B14	R15	G15	B15	R16	G16	B16	R17	G17	B17	R18	G18	B18
Control T-1	-0.944301	-1.050095	-1.155889	-1.261683	-1.367477	0.226089	-0.150726	-1.118835	-0.072464	-0.292751	0.718842	1.156509	0.617393	0.695663	0.234787	0.744926	4.594203	3.778259	0.927536	0.162319	-2.005798	1.588409	-1.765219	1.571014	-0.211595	-0.901449	-0.095657
Control T-2	1.212744	1.272453	1.332162	1.391871	1.451581	-0.492752	-1.295654	-0.104355	-0.03479	-0.565216	0.785507	0.63768	0.124638	0.043488	-0.87825	0.492752	4.315942	3.469276	0.802902	0.234783	-0.057968	0.67247	0.200001	1.24058	-0.153623	-0.301449	0.817383
Control T-3	-0.723492	-0.806972	-0.890451	-0.97393	-1.05741	1.72464	-1.689857	2.886948	1.330429	-1.495655	0.681152	0.072464	0.692753	0.089859	0.014496	0.162319	1.939131	1.349276	0.828979	0	-1.08696	0.895645	-0.779711	2.82029	-0.066667	-0.26087	1.081161
Control T-4	0.722877	0.759107	0.795337	0.831568	0.867798	1.588394	0.620285	1.382614	0.753632	0.565216	0.866669	1.089844	-0.521736	0.904343	0.542023	0.031885	3.315942	2.895361	1.002899	-0.026089	-0.298553	0.457977	-0.982609	1.930435	0.655072	0.017392	1.704346
Control T-5	0.113044	3.298553	-1.301453	2.147826	-1.791298	1.75943	0.263771	0.869568	0.53624	-0.524635	2.321732	0.504349	0.13913	1.023193	0.278267	0.791304	2.515942	2.306088	0.460861	0.243477	-0.86087	0.008698	0.597101	3.086957	0.518841	-0.272464	1.446381
EOCCR T-1	0.263768	-16.57392	-0.631882	6.344928	-13.04348	-23.35072	9.649277	-0.330429	-21.09855	17.56522	-2.762318	-23.79421	-0.315942	2.237679	-9.75943	13.97391	-12.2029	-20.0029	2.910141	-1.857971	-13.97971	7.034775	5.768127	-8.898552	12.0058	14.41159	5.605789
EOCCR T-2	-0.005797	-17.3913	-3.956528	4.727536	-9.510145	-28.44638	10.21739	-4.481155	-7.078261	11.22609	-4.2	-35.59709	0.144928	5.533337	-16.57681	1.104348	-16.46667	-28.69275	5.660873	-1.371002	-9.808701	11.93623	7.301453	-9.452179	19.88115	18.30724	-1.428986
EOCCR T-3	0.008696	-16.51884	-3.342041	5.052174	-9.733334	-25.28986	10.53334	-0.25798	-10.16522	10.96232	-2.217392	-19.9913	-0.142029	1.97971	-6.846375	8.124638	-13.06667	-18.99422	-0.159424	-5.005798	-8.742027	0.849274	-0.617401	-7.313042	17.45796	15.65506	-2.884056
EOCCR T-4	0.04058	-16.07246	-3.08696	6.594203	-12.28696	-23.3768	7.753632	-2.704361	-18.64928	13.45797	-1.710144	-21.46668	0.663768	0.857971	-10.37102	11.76232	-9.710152	-17.25218	4.31015	-1.895645	-15.53043	1.226074	1.460861	-6.54203	14.43187	15.05797	1.371017
EOCCR T-5	0.008696	-14.48696	-2.759415	6.269566	-13.88696	-19.96812	3.652176	-3.31015	-23.23478	10.92754	-3.394203	-19.64638	-0.037681	1.037682	-2.96521	9.666667	-11.42609	-14.67827	1.023178	-2.388397	-11.36522	-0.492752	-1.020294	-6.77681	9.904343	8.446381	-4.057968
FCR T-1	0.005797	-13.4058	-3.191315	4.008696	-7.495653	-33.98261	9.460876	-7.391312	-3.156522	15.96812	-0.831884	-19.2058	2.915942	2.362316	-22.95363	10.8058	-0.414497	-21.64348	10.92754	-0.231888	-16.50725	9.91304	7.799988	-5.571014	10.85217	15.9971	11.43189
FCR T-2	0	-13.05217	-3.753632	6.736232	-7.936234	-27.40581	9.921738	-3.649277	-9.513044	12.73043	-2.776812	-21.95071	1.53913	-0.385509	-12.28986	11.87536	-3.22319	-21.14783	8.649277	-2.313034	-14.76521	6.994202	5.608704	-6.431885	6.336243	11.39131	11.93044
FCR T-3	0.002899	-11.54783	-2.376801	5.898551	-8.046377	-34.18262	11.22319	-9.304352	-7.4	14.79131	-1.866667	-23.22899	3	3.515942	-24.21159	20.07246	5.788406	-26.48406	12.76521	0.388397	-16.86667	11.28406	7.553619	-6.002899	9.785507	14.34493	11.2145
FCR T-4	0	-11.17392	0.852173	6.588406	-8.162319	-27.61739	13.18262	-4.901443	-10.62609	16.68696	-1.014492	-21.22319	2.434783	0.34203	-15.90146	15.88986	2.356522	-19.08116	13.75363	3.115952	-16.84638	15.8232	8.121735	-5.472466	8.536224	11.57681	11.39999
FCR T-5	0.02029	-14.34782	-2.402908	5.533333	-8.046375	-36.8058	13.48407	-10.74204	-5.214493	16.69855	-0.492754	-25.88986	1.156522	4.475365	-26.91884	20.05217	4.898544	-27.95361	12.58261	-0.843475	-18.96522	9.559433	5.115936	-6.107246	8.428986	14.2	13.72464
SER T-1	0	-12.35362	-1.669571	4.565218	-6.985506	-31.30724	10.48985	-10.71884	-6.011594	15.89275	-0.817392	-19.50145	3.657971	2.884056	-16.34493	16.89275	4.875366	-21.1739	11.90434	-1.113037	-15.54493	9.953629	6.330429	-4.350723	7.834793	13.85507	14.24928
SER T-2	0.055072	-11.27536	0.634781	4.144928	-7.686954	-30.88405	9.869568	-8.614487	-6.97971	14.96812	-1.852175	-20.05507	2.742029	1.594204	-21.29565	14.02319	3.142029	-18.48695	15.33043	3.197098	-15.24058	14.42609	8.782608	-4.814499	10.15653	15.6319	13.16232
SER T-3	0	-15.08986	-1.22319	3.576812	-8.602898	-32.1826	9.849274	-6.614487	-2.991304	13.48696	-1.953623	-19.96811	1.13913	1.533333	-17.68987	13.44928	0.608696	-21.59711	13.33624	1.597107	-15.93043	11.03479	8.518845	-4.568115	8.86377	14.46376	11.17971
SER T-4	0	-13.66377	-1.046387	6.005797	-6.495653	-26.56522	9.162323	-7.837692	-4.924638	13.3942	-1.997101	-19.30725	1.385507	0.550724	-19.54202	11.86087	1.165215	-21.42029	11.16811	1.388397	-15.44928	11.59421	8.069565	-5.168114	7.597092	14.22319	11.94203
SER T-5	0.057971	-12.90144	1.481155	5.365218	-8.501448	-28.68697	10.77393	-4.608704	-11.38841	13.98841	-1.289854	-19.58841	2.255073	1.565216	-18.86667	16.64348	2.895653	-19.33623	15.53624	2.623184	-16.2029	14.89565	10.42609	-5.394203	7.773911	13.16812	10.43768
SSR T-1	3.582609	-9.426086	3.371017	7.588406	-4.278259	-19.97391	7.237671	-6.773911	-15.05218	19.03768	2.942032	-13.98261	4.504348	4.750717	-18.72464	25.10435	7.753632	-20.93044	7.295654	4.008698	-12.25507	8.785507	4.469559	-7.762321	5.078247	7.684067	3.231888
SSR T-2	4.788405	-10.2232	1.365219	8.130435	-5.246376	-25.79421	6.933334	-7.962311	-11.01159	21.49276	1.669563	-18.28986	7.339131	4.260872	-32.52754	25.17971	8.17392	-23.77101	12.96521	3.298553	-14.17971	10.53334	6.208694	-7.782608	5.49855	9.072464	5.530441
SSR T-3	3.73913	-8.831886	2.524643	7.768116	-2.573914	-18.26086	8.376816	-5.118851	-12.36811	19.74203	2.281158	-16.30725	6.040581	6.04348	-19.24927	27.35072	11.02609	-22.25797	12.06667	5.133331	-14.6029	10.87535	6.518845	-8.86956	7.513046	9.872452	3.530441
SSR T-4	4.475362	-9.90435	1.214493	8.788406	-5.426086	-22.1739	7.657974	-4.162323	-9.002897	18.11884	-0.82029	-20.16522	3.165218	1.907242	-15.46666	18.52753	2.971024	-19.55652	10.17101	2.144928	-14.82029	10.9884	5.260864	-7.976814	5.350723	5.817398	4.913055
SSR T-5	4.727536	-10.72464	2.452179	9.944927	-3.759418	-21.27536	7.773911	-6.08696	-9.263767	23.33333	1.269566	-18.41159	7.982608	7.13044	-32.68117	30.12174	10.34782	-24.32755	11.89275	4.771011	-15.15652	11.61739	5.849274	-8.657974	5.773926	7.507248	3.13623
SCR T-2	0.011594	-15.35362	0.408691	2.194203	-8.608694	-29.48695	10.56522	-14.08116	-9.504348	13.94203	-2.452173	-19.23187	3.762319	5.168118	-28.00289	11.96522	3.742027	-25.92754	11.33914	0.17392	-12.41449	11.06667	8.997101	-2.77681	13.60289	17.9971	11.7942
SCR T-1	0	-15.51594	1.026077	1.843478	-7.182608	-29.07826	8.402908	-14.1884	-0.692754	15.37102	-1.675362	-21.94782	4.417392	5.153622	-29.10724	13.35942	4.756523	-21.69275	13.78261	1.385513	-13.94203	14.22899	11.43768	-4.657967	13.51015	18.32463	11.08116
SCR T-3	0.023188	-14.88117	3.13623	2.437681	-6.504347	-28.73334	9.440582	-14.26666	-0.2	14.33913	-3.350723	-20.46666	2.069565	4.017391	-25.53044	9.805798	1.823189	-21.51305	15.84058	3.58551	-14.11015	13.82318	11.35942	-3.797096	17.2058	18.68405	7.400002
SCR T-4	0.011594	-13.83478	3.391312	3.510145	-8.443478	-30.90146	11.62318	-13.86667	-5.344927	14.13043	-1.289854	-19.66666	3.901449	5.191303	-34.46378	15.25217	6.327538	-20.08986	15.82028	3.315933	-13.51594	13.8058	10.09276	-2.452179	14.2058	17.6116	11.62318
SCR T-5	0	-13.43768	-1.660873	2.886956	-7.13913	-31.53334	11.34784	-15.49275	-0.365217	14.75942	-1.886957	-21.44637	2.698551	5.217388	-30.6116	14.83478	8.643486	-20.32175	12.96233	2.069565	-14.56232	11.97102	8.330429	-3.791306	10.29276	18.49277	13.77391
EOCHN T-1	1.956522	-11.02319	-1.055069	7.292754	-7.29565	-28.54782	4.875366	-15.30435	-14.98841	23.0058	5.281158	-20.33043	7.875362	11.13043	-36.66087	43.14203	12.0174	-28.27536	5.339142	-0.457977	-15.13043	4.426086	1.408707	-7.13044	5.214493	10.84348	5.67247
EOCHN T-2	3.434783	-11.38841	-0.869568	9.043478	-5.321739	-27.20869	4.944931	-16.43768	-13.29565	25.75942	5.846378	-27.06377	7.426087	12.30145	-46.72464	43.86087	14.05507	-32.15073	8.704346	0.736237	-16.0145	5.771027	2.394196	-10.26377	6.03479	11.52464	7.269562
EOCHN T-3	2.66087	-11.36232	-1.452164	8.452173	-5.61739	-24.44057	4.171005	-14.12753	-13.28986	21.92174	5.304348	-20.73912	4.411594	6.41449	-33.79421	41.4116	12.64638	-29.44928	6.133331	1.553635	-14.48116	4.91304	1.142029	-9.90435	4.243469	8.507248	4.556519
EOCHN T-4	1.855072	-11.6116	-1.939133	7.524638	-6.359421	-26.22899	4.060867	-13.77103	-13.33043	21.51884	2.704346	-25.04928	7.104347	10.08696	-39.91594	36.92464	11.57391	-30.48697	5.892761	0.759415	-14.77682	4.742035	2.121735	-6.54203	5.626083	11.75942	5.333328
EOCHN T-5	3.936232	-11.55652	1.51593	10.47536	-4.069569	-23.85219	6.669556	-14.71014	-15.74783	27.75362	5.794201	-23.91594	13.59131	12.22319	-39.34203	53.64637	18.07536	-29.14203	8.240585	3.05217	-11.98841	9.075363	4.150726	-9.281158	7.515945	9.643463	0.828995
MHORD T-1	4.515942	-10.29565	1.469574	10.95072	-5.205799	-19.59421	9.240585	-8.234787	-10.53913	24.16522	2.910145	-21.8145	4.626087	6.54493	-28.07246	27.79131	5.698547	-25.52174	6.773911	0.255081	-13.07536	9.823196	5.855072	-6.472466	9.365219	12.30145	7.22319
MHORD T-2	3.637681	-11.54202	0.768127	7.907246	-6.191303	-27.0029	7.420288	-13.66087	-10.15942	24.14493	4.005798	-21.57101	7.011595	9.379707	-32.36522	31.84058	9.420288	-25.31595	8.304352	3.36232	-14.61739	8.040573	3.298553	-10.13334	8.72464	10.22319	4.756516
MHORD T-3	3.930434	-12.02029	-0.234772	10.84638	-8.089855	-25.29564	4.788406	-10.37972	-15.53333	25.38841	2.475365	-24.42609	6.513044	8.08696	-32.78261	34.6087	7.127533	-28.3913	9.214493	-0.063766	-16.88406	4.930435	0.672455	-10.4058	4.602905	9.41449	3.173904
MHORD T-4	4.597101	-11.21739	1.3797	9.826088	-5.698551	-28.9971	8.350723	-11.57681	-11.6116	23.81449	2.127537	-24.12175	6.750725	10.15652	-37.04927	39.44928	10.65797	-32.67537	9.881149	3.113037	-16.14493	9.588394	4.626099	-10.11594	7.255066	12.09276	6.263763
MHORD T-5	3.475362	-12.76522	1.805801	9.527536	-6.45507	-27.08984	6.368118	-12.86665	-9.910147	22.88406	3.66087	-18.97682	7.394201	9.144928	-30.66956	28.45507	7.072464	-28.02029	10.58261	2.973923	-16.67536	4.014496	2.391312	-9.008698	6.698547	11.94783	8.886963
FGSD T-1	0	-15.82609	-5.681168	2.362319	-6.994204	-43.82898	8.330444	-41.55072	-1.663768	17.52753	-0.965218	-27.24638	2.37971	6.486958	-28.72464	30.30145	11.91595	-40.11884	2.13623	-4.707245	-13.02899	3.310135	3.814484	-5.226082	12.22319	17.26956	10.9855
FGSD T-2	0.382609	-13.61739	-7.098557	5.118841	-8.292753	-48.56812	12.97681	-38.48695	-3.721739	20	1.857971	-22.84348	2.318841	7.826084	-29.02898	30.78551	11.30724	-36.48406	7.942032	-4.330444	-17.58841	8.211594	5.518829	-6.211594	12.43189	20.18552	17.38841
FGSD T-3	0	-15.33624	-7.515945	5.327536	-8.446377	-50.05797	8.678253	-41.71304	-0.794203	14.90725	-0.956522	-29.32465	0.24058	5.423187	-26.1884	17.85507	2.185501	-36.98552	4.597107	-6.811584	-16.22319	7.118851	4.710144	-5.008698	7.773911	17.16522	17.97102
FGSD T-4	0.002899	-17.95072	-5.950714	3.002898	-8.507246	-48.95653	9.814484	-41.02319	-1.492754	16.06087	-2.910145	-27.75362	2.530435	8.43478	-47.1855	23.83189	9.44928	-39.89275	7.182602	-1.165222	-15.0145	9.713043	7.081161	-6.41449	13.38841	20.78551	12.73333
FGSD T-5	0	-12.26957	-5.298553	1.397101	-6.933332	-36.84059	6.759415	-34.0029	-0.304348	11.06667	-2.49855	-19.95942	0.301449	6.362318	-23.6145	8.342029	1.428986	-22.35072	6.46666	-2.901443	-10.6087	7.733337	7.202896	-3.31884	7.736237	14.51595	11.64928
MHOR T-1	0.017391	-15.9942	-1.953629	2.463769	-6.382608	-44.30435	10.47826	-42.05219	-2.344928	18.37971	-0.028986	-21.66087	2.771014	8.014492	-45.70725	30.29565	17.33043	-33.93624	11.629	1.611588	-12.62319	12.66086	10.07826	-4.742027	16.14203	19.86667	11.10725
MHOR T-2	2.701449	-12.57101	-6.953629	4.533334	-7.066669	-40.96811	9.304352	-36.76233	-10.91015	20.75652	2.7971	-18.45217	8.301449	10.15942	-49.93333	53.67827	20.86087	-29.73044	5.307251	-2.249268	-11.8203	5.078262	4.602905	-4.507248	13.21739	17.45506	10.91594
MHOR T-3	0	-16.29565	-3.144928	4.057971	-8.460871	-46.53914	10.14783	-41.46956	-3.97971	20.58261	1.38261	-24.95942	5.147826	8.327538	-43.42029	42.4145	21.35652	-36.98261	9.768112	0.77681	-13.77681	10.41451	9.8116	-4.860863	14.06957	19.73914	14.55073
MHOR T-4	0.014493	-16.65218	0.217392	2.631885	-5.486956	-46.69855	10.11594	-43.06377	-0.562319	19.04638	0.794203	-22.13913	5.275362	11.8145	-57.65797	26.23768	16.65217	-33.96523	11.59421	0.599991	-13.68695	13.20869	9.414505	-5.18261	16.95943	21.53334	11.32754
MHOR T-5	0.005797	-18.2058	-0.698563	3.507246	-6.924637	-48.70725	11.26086	-42.82608	-3.513043	34.24638	15.18551	-17.32753	10.15362	10.49276	-56.29855	62.69276	30.33624	-37.48696	12.06377	1.104355	-14.21739	12.07536	10.31593	-6.101456	15.07826	22.30725	12.18551
CMT T-1	0.005797	-15.5971	-2.081161	5.959421	-6.278261	-27.56522	10.62029	-0.750732	-5.724638	12.01739	-0.959421	-18.94783	0.808696	3.17971	-9.257965	9.675362	-9.417397	-18.53333	7.315948	-1.031876	-17.44348	5.284058	0.979706	-10.47246	10.0145	14.69275	3.098557
CMT T-2	-0.475362	-16.58551	-0.962311	4.907248	-10.28986	-19.65508	8.933334	-1.733337	-9.530435	13.68695	-1.228985	-19.51015	0.356522	1.689854	-9.400009	10.86957	-10.86087	-18.37102	5.237686	-1.666672	-15.27826	12.28986	8.988419	-7.446373	9.840576	11.51595	2.246376
CMT T-3	0.095652	-14.04638	-0.892761	6.904348	-9.220291	-21.8058	9.634781	-3.701447	-10.64348	16.04348	-0.307247	-19.69565	-0.092754	1.202896	-12.9884	16.8	-3.872459	-22.59421	3.747833	-0.385498	-14.33624	6.226089	3.185516	-10.87247	8.823196	10.1855	3.513046
CMT T-4	0.098551	-13.46377	-0.39711	7.428986	-8.802898	-20.25218	4.663773	-2.573914	-10.8029	15.38551	-0.6029	-17.24057	0.084058	0.443478	-8.901443	10.62319	-8.252174	-18.51015	7.069565	-0.663773	-17.63189	-0.278259	0.121735	-3.397102	9.171021	13.8029	5.252167
CMT T-5	0.17971	-15.32174	-0.475357	8.799999	-10.06956	-22.53044	12.42899	1.452179	-10.97102	14.51304	-2.188406	-20.56232	-0.055072	-0.040581	-10.13333	13.11594	-7.081161	-19.64348	8.962311	-0.231873	-16.63478	9.649277	5.510147	-8.573914	11.9913	13.3826	2.936234

Roasting Temperature Test

	R10	G10	B10	R11	G11	B11	R12	G12	B12	R13	G13	B13	R14	G14	B14	R15	G15	B15	R16	G16	B16	R17	G17	B17	R18	G18	B18
NR T-1	0.431884	-18.06377	-2.600006	8.692754	-11.44638	-17.93333	3.327545	-9.802902	-18.45797	11.31594	-0.84058	-16.02029	-1.107246	-7.779713	-44.05217	6.13913	-16.92174	-17.80289	1.72464	-6	-15.35942	-1.652176	-1.86087	-7.223183	10.90724	11.72464	2.321732
NR T-2	1.733333	-16.88986	-2.657974	10.02319	-14.06087	-16.06087	2.579712	-6.434784	-20.17681	12.9971	-1.794203	-13.9942	-1.973913	-6.231884	-32.48406	7.510145	-16.88696	-14.92464	-1.344925	-5.36232	-15.96812	-3.617386	-1.96521	-4.559425	10.79421	12.72754	2.698547
NR T-3	1.321739	-12.9971	-0.124634	8.226088	-10.65797	-9.739136	5.405807	-4.063766	-17.78261	7.724638	-0.652174	-9.823196	-1.2	-8.034782	-35.65218	6.202899	-9.739128	-11.20869	1.411591	-2.281158	-10.91884	-1.823196	0.565216	-3.023186	9.87825	10.30434	2.269562
NR T-4	3.765218	-16.59419	-2.350723	9.533333	-12.48116	-14.79131	4.588409	-6.133331	-19.4087	9.884058	-2.481159	-15.39421	-0.768116	-9.576809	-35.49565	7.107245	-14.91594	-15.83768	2.469559	-5.127548	-14.6058	-2.698563	-2.05217	-6.486954	9.63768	11.63768	1.371017
NR T-5	1.211594	-17.63479	-1.994202	9.084058	-13.51014	-19.20869	4.924637	-5.582611	-19.91594	11.84638	-2.353624	-15.9971	-2.736232	-10.66956	-37.4087	7.6	-16.6	-16.21739	-1.284058	-6.660858	-16.51594	-2.298538	0.115936	-4.539131	10.66957	11.68115	4.176819
180C T-1	2.275362	-16.84927	1.05217	11.25507	-12.48116	-18.93044	8.05217	-9.915955	-18.97971	13.71014	-1.939131	-12.74204	1.084058	-7.176815	-41.32175	9.23433	-14.86957	-7.08696	9.530441	0.968109	-16.58261	12.1826	11.07246	-7.846375	9.469559	9.692749	5.185516
180C T-2	3.742029	-17.62318	2.915939	10.8087	-12.89855	-17.47826	9.405792	-8.507248	-19.72754	13.8116	-2.205799	-12.64058	2.037682	-7.211597	-40.17101	9.582607	-15.72174	-5.365219	9.417389	-0.588409	-15.30145	10.75653	9.228973	-6.976814	11.34493	10.97101	4.272461
180C T-3	0.304348	-17.66377	0.704346	10.58261	-12.44638	-18.52463	7.084045	-7.553619	-17.83768	12.78551	-1.449276	-12.22319	-2.315941	-6.968117	-43.88696	9.278261	-16.20001	-8.371002	10.31883	0.263763	-14.97971	13.31015	10.82898	-6.710144	9.202911	9.843475	4.614502
180C T-4	3.605797	-16.22319	0.486954	10.33333	-12.61159	-18.8087	7.710144	-9.417404	-19.51304	14.4058	-1.310144	-10.66087	3.397101	-6.988407	-40.51305	9.115942	-15.29855	-8.272476	8.866669	-0.03479	-15.98551	16.34493	13.31015	-5.62899	10.50435	10.62608	4.428986
180C T-5	3.915942	-15.43478	4.898544	12.01449	-13.43768	-12.62608	10.49855	-7.043488	-18.77391	13.85797	-2.640579	-12.14781	0.852174	-8.947823	-43.35651	7.646377	-15.35941	-5.553619	11.59421	0.681152	-14.3913	15.06957	13.15363	-4.791306	13.71014	12.42029	6.513046
200C T-1	3.24058	-12.84348	-0.289856	8.559421	-9.017391	-19.31883	9.41449	-6.133331	-14.95362	11.95942	-1.628986	-15.42029	1.823188	-0.405796	-20.31885	9.484058	-8.85508	-18.0174	6.750717	-0.301453	-16.83188	8.892761	5.333328	-9.026085	6.968109	9.295654	11.9942
200C T-2	4	-16.22899	-0.417389	5.68116	-7.115942	-24.45508	12.63768	-2.391312	-13.11594	8.594204	-1.246377	-16.85797	0.133333	-3.968115	-29.10145	0.492754	-13.48116	-20.69276	9.350739	-2.753632	-17.22029	9.84639	7.486954	-8.814491	6.933334	10.08986	13.08986
200C T-3	3.243478	-14.78551	2.857971	7.628985	-10.17681	-28.53624	13.54782	-13.44638	-16.12464	12.31014	-0.834782	-12.8203	0.527536	-1.637682	-26.53913	5.478261	-7.286957	-19.73044	14.08116	0.237686	-20.95073	17.66377	9.657974	-9.13913	6.382614	11.73624	13.77681
200C T-5	3.449275	-10.76521	12.23189	10.61159	-8.515942	-15.67827	15.68697	-5.202896	-15.41159	16.4	-0.750725	-12.15363	9.298552	4.011593	-16.98261	12.10725	-3.455078	-14.46666	16.80869	4.802902	-14.66666	25.57971	19.03479	-7.156525	6.414505	8.936234	15.52754
200C T-4	3.640579	-11.54202	6.292755	8.002898	-8.936234	-15.67537	12.6087	-3.281158	-15.66377	12.3971	-1.333334	-9.600006	3.495652	0.585508	-18.77682	2.686956	-10.21449	-12.97101	15.85797	3.660858	-15.64058	15.87537	11.06667	-9.211594	9.576813	10.92464	13.29565
210C T-1	1.246377	-12.42609	-0.226074	8.478261	-6.889854	-23.86955	7.289856	-13.17972	-13.41449	15.1971	1.200001	-15.75363	0.875362	4.736233	-14.93042	15.4	2.040581	-17.3681	2.176819	-0.049286	-8.953621	9.692749	7.182617	-8.568115	8.591309	14.2	15.30145
210C T-2	0.086957	-13.75362	-1.162308	7.93913	-8.281158	-25.87247	3.205795	-13.06667	-14.64928	11.92174	-2.202898	-20.38841	0.571015	2.107246	-16.74203	4.321739	-7.127533	-25.12753	10.36812	-3.562317	-18.63768	9.426086	3.353622	-10.08986	6.347824	12.06087	14.03189
210C T-3	0.037681	-16.80869	-5.199997	1.026088	-8.50145	-29.33044	9.820297	-14.1913	-6.284058	5.837681	-4.205797	-20.42319	-0.055072	-0.133333	-16.24928	4.797101	-7.130432	-27.32173	7.802887	-4.710144	-19.05797	7.649277	5.243484	-7.031887	15.08116	18.91594	13.04637
210C T-4	0.02029	-12.69565	0.002899	4.782609	-8.689856	-24.68987	10.30435	-9.266663	-9.504348	8.110146	-4.307247	-21.90724	0.06087	-0.144928	-16.35942	8.284058	-5.585503	-21.08116	13.0058	-1.997101	-18.84638	14.3681	8.095657	-7.94783	11.6145	15.54492	14.39999
210C T-5	0.643478	-12.8	-1.1884	6.646377	-9.136232	-27.86087	8.347824	-12.70145	-14.10145	16.14493	-0.049276	-17.50145	0.089855	1.76232	-19.76812	10.84348	-2.086952	-23.79999	10.91304	-2.744919	-18.77681	12.07826	5.431885	-10.29275	10.87247	15.92754	13.24638
220C T-1	4.289855	-11.7739	0.255081	7.921739	-7.739128	-23.9855	7.408691	-16.0029	-12.42029	15.41739	-1.617392	-17.44348	1.42029	-0.217392	-20.13332	15.12464	-1.121735	-19.86377	13.34493	0.428986	-11.24348	13.70726	9.199997	-8.698555	8.255066	13.73914	9.988403
220C T-2	0.249275	-12.42319	1.791306	8.376812	-5.585506	-23.72464	10.1855	-10.97682	-10.7913	16.69565	0.991304	-15.27536	2.994203	0.820293	-23.77682	16.22899	-2.144928	-21.58261	13.7971	0.611588	-17.77681	19.73914	10.63768	-8.889854	7.426086	13.30434	10.88406
220C T-3	2.675362	-11.04927	4.36232	9.147826	-7.078262	-25.90724	10.10146	-10.55072	-10.31014	19.38841	1.87826	-13.24927	1.878261	-3.330433	-20.7797	13.33044	1.721741	-16.26956	14.0174	2.260864	-15.46087	19.46088	13.37682	-6.747826	7.823196	14.0174	10.76521
220C T-4	0.197101	-13.8029	-1.481155	7.666667	-9.086956	-28.69565	10.43767	-12.88117	-10.67826	18.4029	-0.086956	-12.25507	0.365217	1.971014	-25.13043	11.56522	0.489861	-16.08695	12.62898	-1.060867	-19.89275	17.89566	11.63768	-6.411591	7.486954	15.75653	13.75363
220C T-5	2.449275	-11.69855	3.202896	7.550725	-7.94203	-26.98842	12.84348	-13.06667	-10.98841	17.63478	0.794203	-13.66377	0.13623	-1.446381	-25.63768	14.38551	0.997101	-17.62608	17.40291	3.284058	-16.96812	18.64636	11.84927	-8.852173	9.579712	14.24928	12.22899
230C T-1	0.791304	-13.32174	1.971008	8.368116	-8.588406	-32.09276	10.25217	-26.45216	-18.21449	10.5913	-1.342028	-17.36232	0.086957	-0.849274	-18.77101	7.678261	-6.101448	-21.91884	12.91304	0.388397	-20.57391	18.03769	10.69565	-12.31014	5.886948	11.11304	10.70435
230C T-2	4.24058	-13.48116	3.660858	10.89565	-6.953625	-23.08696	6.36232	-17.95361	-16.88696	10.25797	-1.202898	-19.71884	1.747826	1.686954	-18.97392	16.00869	-1.391304	-20.63768	10.61159	1.026077	-16.97971	13.36232	6.092758	-10.72464	5.03479	9.843475	12.86957
230C T-3	3.417391	-12.67246	4.113052	10.71884	-6.428986	-26.23769	16.8116	-18.87247	-18.49275	20.25507	4.953625	-13.50145	3.011594	3.315945	-26.65218	14.12754	0.663765	-24.90144	14.01738	0.243484	-19.12174	21.93044	14.12463	-9.162315	5.15361	12.78841	18.35072
230C T-4	4.75942	-14.52464	0.344925	12.41159	-7.246376	-24.10434	8.907257	-16.51015	-18.77681	18.61739	1.469566	-16.20001	2.768116	1.260868	-21.1884	10.30145	-7.669563	-22.54494	8.318848	-0.052185	-17.58551	19.9913	8.773911	-9.376808	8.002899	10.08406	11.86665
230C T-5	2.594203	-15.12754	0.881165	9.002899	-9.176811	-29.15653	11.45508	-32.14493	-25.65217	12.55362	-0.510143	-18.16232	3.052175	1.400002	-21.03188	6.15942	-6	-22.29565	11.48116	1.060867	-19.11015	21.28986	14.90434	-12.85797	3.779709	12.26956	18.59129
240C T-1	3.304348	-12.62029	1.843475	10.43768	-7.301449	-24.06088	9.878265	-18.66377	-14.7942	18.24928	2.681156	-12.1884	10.82319	1.423191	-17.68985	17.28696	2.863762	-15.53333	14.3768	5.205795	-15.76521	21.76811	16.1971	-6.263771	4.86087	8.020279	12.0116
240C T-2	5.321739	-11.50145	-1.191315	11.48986	-6.843479	-25.6087	7.599991	-26.91306	-25.96522	18.52754	2.646378	-15.95653	3.988405	1.533333	-27.94782	22.85507	4.481155	-24.15942	13.11014	1.768112	-17.45797	21.35072	16.89854	-6.81739	5.87825	8.330429	9.318848
240C T-3	1.991304	-14.63768	6.353622	9.602899	-8.924637	-28.33623	17.21449	-16.28116	-15.04928	17.70145	-0.284058	-19.66087	4.156522	1.620289	-19.77681	12.81159	-2.478264	-22.6087	15.39999	2.443481	-18.63768	23.86955	15.40579	-9.846375	5.098541	11.80579	18.03188
240C T-4	4.394203	-13.37391	7.350723	11.49855	-6.368118	-17.02608	16.16521	-11.05798	-14.96522	18.89566	0.588406	-15.34493	2.713043	-4.533333	-17.7884	14.1913	-1.452179	-16.1855	15.62029	5.22319	-16.22899	26.45218	18.31885	-9.510139	3.756516	10.37972	16.51595
240C T-5	4.104348	-12.53913	7.855072	10.97391	-5.785507	-20.66376	16.31014	-26.08116	-21.06087	19.02029	2.849274	-11.82898	2.518841	-6.843475	-25.31593	20.49855	8.547836	-19.21159	17.63478	6.10434	-16.89565	27.44927	19.85797	-6.614494	5.41449	10.30434	12.83769

Roasting Time Test

	R10	G10	B10	R11	G11	B11	R12	G12	B12	R13	G13	B13	R14	G14	B14	R15	G15	B15	R16	G16	B16	R17	G17	B17	R18	G18	B18
1min Roast T-1	3.898551	-12.61739	0.08696	7.736232	-6.776814	-38.10725	8.176804	-27.44928	-16.2	17.42319	1.585506	-16.97102	2.884058	7.289856	-11.9913	14.08406	1.426086	-22.94203	8.927536	-1.973907	-17.57681	4.715942	0.127533	-7.947823	12.28406	18.45216	15.47536
1min Roast T-2	2.521739	-12.1855	-0.736221	7.095652	-7.38261	-32.53912	5.91304	-29.23479	-17.37102	12.16812	0.075361	-16.15073	0.791304	1.484058	-5.634781	10.2058	-5.426086	-18.57391	7.773911	-3.113052	-18.04058	6.226089	3.098541	-4.118843	9.828979	9.011597	10.04059
1min Roast T-3	2.573913	-10.30725	-1.359421	6.382608	-7.742027	-35.29855	7.092743	-24.44927	-12.42899	17.91594	2.597101	-15.3971	0.721739	2.669563	-8.73333	14.44058	-2.23188	-23.51883	8.199997	-6.657974	-16.81449	2.142029	4.292755	-5.417397	8.907242	12.77391	14.10436
1min Roast T-4	2.330435	-11.08116	0.185501	7.649275	-5.298553	-34.85217	7.547821	-25.59711	-15.64058	16.13623	0.142029	-14.46376	0.286957	2.962318	-8.788414	15.2087	-5.588402	-22.43478	9.304337	-4.339127	-17.90145	12.45508	6.240585	-9.475357	9.881149	15.30145	15.88117
1min Roast T-5	2.556522	-12.0087	-0.843475	6.411594	-7.336229	-31.85217	6.014496	-26.67247	-13.38841	12.73333	-0.765219	-15.83189	1.411594	3.101448	-7.031891	13.36522	-5.539131	-19.73334	8.866669	-5.72464	-16.58261	11.86377	4.39711	-6.011597	13.12755	17.90146	17.46667
5min Roast T-1	2.107246	-9.571014	-0.779709	7.684058	-7.811596	-35.87827	6.272461	-20.62318	-12.47536	18.82899	2.249275	-18.8087	5.46087	4.550724	-12.27536	13.49565	0.866669	-20.15942	9.110138	-2.156525	-19.88696	10.17102	3.324631	-12.07246	9.437683	13.91885	14.73914
5min Roast T-2	3.026087	-12.78841	1.544922	8.031885	-5.08116	-33.63478	7.60289	-23.8261	-13.22319	15.62029	-0.823189	-21.44058	2.373913	2.753622	-20.74203	12.45217	3.04348	-27.91014	11.96523	-5.327545	-21.46957	8.043472	0.744934	-12.35072	10.74492	15.60579	13.90724
5min Roast T-3	3.101449	-12.53043	1.182602	10.87246	-5.942032	-34.13913	9.014496	-24.31595	-12.72464	17.13623	1.255072	-22.2145	2.362319	1.008698	-24.30725	17.91884	2.918839	-25.26088	9.568115	-0.026077	-18.61739	15.57391	8.527542	-10.58841	8.197098	12.48117	15.59711
5min Roast T-4	3.637681	-14.40289	-0.600006	10.03768	-4.437679	-27.89275	4.043472	-24.50143	-12.16232	18.94783	0.527536	-22.71595	1.663768	1.979713	-21.89275	14.16522	2.400002	-25.29276	5.94783	-3.281158	-16.18261	6.733337	3.359421	-11.55363	1.556534	6.678253	12.55942
5min Roast T-5	3.463768	-13.52174	1.527527	8.724638	-7.028988	-31.9884	13.2	-23.58841	-11.77101	19.86377	1.620289	-19.92464	1.362319	3.463766	-18.50435	14.33333	-1.011597	-19.72174	14.68115	0.437683	-19.25217	15.68985	10.39131	-6.90435	8.513046	14.73332	14.74782
10min Roast T-1	0	-14.52464	-0.481155	7.397101	-8.45797	-38.92464	5.197098	-36.09276	-14.62898	13.95362	0.481159	-20.09854	0.962319	5.008698	-17.11305	7.588406	-3.855072	-25.9884	7.86377	-4.971008	-18.9971	6.834778	1.800003	-12.48695	5.281158	11.48117	15.55942
10min Roast T-2	0.02029	-12.79421	-4.695648	9.171015	-6.408695	-40.17102	7.768112	-31.50725	-9.202898	9.18261	-2.165217	-25.71305	0.136232	0.805798	-24.55943	11.28986	-0.550728	-33.88406	9.382614	-5.353622	-21.15072	6.055069	0.486954	-12.23768	7.24057	13.49565	16.3681
10min Roast T-3	1.684058	-13.37101	-0.663757	9.234783	-6.34203	-25.69856	5.113052	-22.70436	-14.14203	12.58551	0.779709	-22.43189	3.843478	4.718842	-16.54203	10.9971	-5.823189	-20.51885	5.927536	-0.820297	-13.88406	8.834778	4.626083	-12.6	5.750717	12.70436	17.03188
10min Roast T-4	5.542029	-12.06088	-0.736221	9.956522	-6.759418	-33.72464	12.64058	-28.04929	-1.278261	18.79131	4.205795	-15.36522	6.947825	8.695652	-20.52464	16.56812	1.397102	-23.56522	6.353622	-2.026093	-17.06957	5.704346	3.257965	-9.150726	10.08696	16.05797	17.31595
10min Roast T-5	3.571014	-13.65797	2.907242	11.71304	-3.802898	-29.42899	8.269577	-44.44638	-17.28985	18.54493	2.055073	-20.53913	4.252174	3.344929	-18.57971	19.58841	6.484055	-25.46088	12.52464	-1.165207	-19.08696	12.8203	5.753616	-10.37681	10	17.02028	16.66956
15min Roast T-1	4.289855	-11.7739	0.255081	7.921739	-7.739128	-23.9855	7.408691	-16.0029	-12.42029	15.41739	-1.617392	-17.44348	1.42029	-0.217392	-20.13332	15.12464	-1.121735	-19.86377	13.34493	0.428986	-11.24348	13.70726	9.199997	-8.698555	8.255066	13.73914	9.988403
15min Roast T-2	0.249275	-12.42319	1.791306	8.376812	-5.585506	-23.72464	10.1855	-10.97682	-10.7913	16.69565	0.991304	-15.27536	2.994203	0.820293	-23.77682	16.22899	-2.144928	-21.58261	13.7971	0.611588	-17.77681	19.73914	10.63768	-8.889854	7.426086	13.30434	10.88406
15min Roast T-3	2.675362	-11.04927	4.36232	9.147826	-7.078262	-25.90724	10.10146	-10.55072	-10.31014	19.38841	1.87826	-13.24927	1.878261	-3.330433	-20.7797	13.33044	1.721741	-16.26956	14.0174	2.260864	-15.46087	19.46088	13.37682	-6.747826	7.823196	14.0174	10.76521
15min Roast T-4	0.197101	-13.8029	-1.481155	7.666667	-9.086956	-28.69565	10.43767	-12.88117	-10.67826	18.4029	-0.086956	-12.25507	0.365217	1.971014	-25.13043	11.56522	0.489861	-16.08695	12.62898	-1.060867	-19.89275	17.89566	11.63768	-6.411591	7.486954	15.75653	13.75363
15min Roast T-5	2.449275	-11.69855	3.202896	7.550725	-7.94203	-26.98842	12.84348	-13.06667	-10.98841	17.63478	0.794203	-13.66377	0.13623	-1.446381	-25.63768	14.38551	0.997101	-17.62608	17.40291	3.284058	-16.96812	18.64636	11.84927	-8.852173	9.579712	14.24928	12.22899
20min Roast T-1	3.724638	-14.03478	-1.950729	10.67246	-6.527538	-31.30725	6.202896	-28.22609	-17.02319	18.64638	1.03768	-21.54204	5.408695	5.391304	-22.63768	19.78551	0	-25.88117	8.73912	-0.582611	-17.08406	11.60579	5.081161	-12.17681	5.976822	12.97681	18.44348
20min Roast T-2	0	-16.32754	0.814499	9.411594	-8.188404	-36.57681	14.30725	-31.21449	-19.69855	14.5942	-0.562319	-21.81449	3.037681	3.63768	-20.99131	12.03478	-1.09565	-29.62898	14.67827	-0.481171	-20.91594	22.10434	14.59421	-9.944931	7.472458	13.88985	18.51015
20min Roast T-3	3.066667	-12.51305	2.472473	11.24638	-5.828987	-24.02609	6.057968	-29.1971	-14.75942	21.65797	4.315943	-15.35072	3.936232	5.130436	-16.36522	17.2029	0.828987	-20.59131	10.89854	1.63768	-13.89275	11.55362	4.857971	-9.791306	4.075363	9.655075	14.54492
20min Roast T-4	0.281159	-14.53333	-1.165222	8.275362	-9.275364	-44.77971	17.58839	-27.54492	-5.901449	18.95942	1.886959	-19.06377	1.063768	2.226086	-28.28695	13.33044	-1.115944	-31.26378	13.55942	-2.342026	-20.85218	19.46088	9.634781	-12.94783	9.936234	14.54204	15.04057
20min Roast T-5	3.704348	-13.19421	1.765228	10.25797	-7.866669	-36.95941	16.06377	-28.40579	-7.547826	15.05797	-0.582609	-25.24347	1.547826	-0.918839	-34.12465	15.4087	0.446373	-30.83478	15.73912	0.107254	-23.62609	21.75653	14.1942	-9.553627	9.423187	15.83768	18.79131
45min Roast T-1	5.344927	-13.87825	-1.394196	11.62029	2.576813	-42.95941	11.60869	-35.41449	-17.66957	23.3913	7.70145	-15.94492	1.257971	0.68116	-27.73914	34.51304	18.86087	-36.74493	13.60291	1.484055	-17.5913	21.6058	15.64638	-6.8116	9.74202	14.32463	10.49275
45min Roast T-2	5.298551	-12.88985	-3.168121	11.37971	1.771015	-45.49855	11.41449	-35.07825	-16.41739	21.84348	6.97971	-15.81449	1.333333	0.33913	-29.15653	36.29276	21.08696	-35.9913	12.97972	2.53334	-20.82029	23.28406	14.40289	-8.489861	9.417389	13.73044	10.17392
45min Roast T-3	6.33913	-12.66666	-3.982605	11.46087	2.582611	-44.79421	11.68697	-36.48116	-17.54493	23.06088	8.307247	-14.58261	2.834783	1.121738	-28.65797	35.47536	23.09276	-36.07536	13.1884	2.86377	-18.25507	24.29565	16.73622	-10.6058	10.42899	17.22319	10.0116
45min Roast T-4	5.098551	-14.31594	-3.698563	11.82899	3.055069	-44.87245	10.31883	-38.6145	-19.38261	23.70145	6.417389	-15.69276	2.234782	1.011593	-28.51884	39.0116	19.84059	-36.23189	14.87247	3.791306	-17.5826	24.42319	15.07246	-9.655075	11.75653	12.69276	10.88696
45min Roast T-5	6.434783	-12.49564	-1.266663	11.48986	2.440578	-46.03479	11.14493	-33.69855	-18.74493	23.8	8.289856	-14.48116	2.28116	1.846378	-27.4145	35.88696	20.93333	-37.35072	13.72174	1.930435	-19.69856	26.94203	16.23767	-11.05798	10.64058	14.91884	11.41161
3hr Roast T-1	4.626088	-10.48406	1.214493	11.96812	-2.779709	-34.31883	10.36812	-28.05217	-15.70435	21.18551	4.918842	-17.63188	1.689856	-1.527534	-30.96811	28.92174	14.77971	-24.95653	15.51015	4.463776	-17.47247	17.84348	12	-7.863762	8.617401	10.85797	9.956512
3hr Roast T-2	4.869565	-10.4232	4.988419	11.68696	-1.29565	-34.32175	11.75652	-27.28696	-14.65797	22.4	6.43478	-11.26666	5.753623	7.623188	-30.43478	26.79421	20.29565	-25.52174	12.89856	3.718842	-15.55942	18.73624	11.90434	-7.205795	8.889847	13.70725	12.03478
3hr Roast T-3	4.055072	-12.0145	4.365219	12.68986	-4.550724	-29.11015	9.457977	-21.46956	-17.36522	19.10435	3.182608	-14.89275	3.788406	2.84058	-34.06667	26.55652	10.06667	-22.83768	11.22609	4.092758	-16.82319	17.21159	13.31015	-9.959419	8.817398	11.95071	11.46957
3hr Roast T-4	4.278261	-12.13914	-0.53624	10.64928	-4.373913	-33.89856	6.628983	-27.46666	-17.08116	22.94492	7.518841	-10.91884	4.672464	-1.075363	-32.77101	26.85507	10.94203	-25.30725	7.356522	-0.301453	-15.42609	10.46088	11.30434	-8.153618	5.802902	11.88986	12.51013
3hr Roast T-5	[illegible]	[illegible]	2.171005	10.94203	-6.278259	-38.11595	11.58261	-28.83769	-15.51014	18.61739	1.779709	-14.70145	4.008696	-0.031887	-31.56812	[illegible]	[illegible]	-25.2058	16.3942	2.202896	-18.91884	18.36522	11.36812	-9.478256	9.486954	12.54202	13.77971

	R19	G19	B19	R20	G20	B20	R21	G21	B21	R22	G22	B22	R23	G23	B23	R24	G24	B24	R25	G25	B25	R26	G26	B26	R27	G27	B27
Control T-1	-2.20871	0.049274	-3.162308	1.089844	-0.521736	-0.001451	0.252461	0.506373	0.904343	0.542023	0.031885	0.27014	0.251591	0.233041	0.214491	0.927536	0.162319	-2.005798	1.588409	-1.765219	1.571014	0.481169	0.30725	0.133331	-0.040588	0.133331	-0.040588
Control T-2	-1.518845	-0.115944	-0.057968	0.504349	0.13913	0.449277	0.58203	0.714784	1.023193	0.278267	0.791304	0.789273	0.720868	0.652463	0.584059	0.802902	0.234783	-0.057968	0.67247	0.200001	1.24058	1.147843	1.205811	1.263779	1.321747	1.263779	1.321747
Control T-3	-0.817398	0.646378	-2.081161	0.797104	0.249275	0.324638	0.493334	0.662029	-0.623184	-0.026093	-0.808697	0.647245	0.558549	0.469853	0.381157	0.828979	0	-1.08696	0.895645	-0.779711	2.82029	4.101409	2.889831	1.678253	0.466675	1.678253	0.466675
Control T-4	-0.910156	1.176811	0.701447	-0.101448	-0.07246	-0.71159	-1.16666	-1.621731	0.428986	0.53624	1.849276	1.333035	1.142312	0.951589	0.760866	1.002899	-0.026089	-0.298553	0.457977	-0.982609	1.930435	2.136244	1.762328	1.388412	1.014496	1.388412	1.014496
Control T-5	-0.707245	0.286957	0.797104	0.823189	-0.431885	-0.163769	-0.376813	-0.589857	0.623199	0.115944	0.510144	1.316501	1.070418	0.824334	0.578251	0.460861	0.243477	-0.86087	0.008698	0.597101	3.086957	0.959457	0.524658	0.089859	-0.34494	0.089859	-0.34494
EOCCR T-1	15.49857	0.559418	16.43767	18.27826	22.45507	-9.652168	2.756522	-8.199997	-6.588409	0.017391	-14.28696	-6.002899	0.672463	0.17971	0.82608	0.53334	-2.191303	-1.75943	3.628998	10.47247	-4.092754	0.295654	0.281158	-3.269562	-2.208694	-2.040573	3.457977
EOCCR T-2	16.07246	0.324646	24.08696	21.93913	26.22898	-9.185509	1.6	-7.388405	-11.46668	0	-14.34203	-7.12175	-0.052175	0.243478	2.391312	0.87825	-1.585506	-1.356522	6.466675	11.85217	-5.21739	1.020294	-0.313049	-0.924637	-2.918839	-1.747818	5.185501
EOCCR T-3	14.42028	1.420288	14.71594	19.86957	21.35942	-7.359421	3.811594	-6.098549	-9.58551	0.023188	-13.18551	-4.944931	0.498551	0.37971	1.950714	1.489868	-1.162319	-2.985519	1.971024	6.304352	-1.47826	1.069565	0.182602	-1.756516	-2.333336	-1.191299	3.214493
EOCCR T-4	17.95941	5.344925	11.51013	19.97392	21.58841	-7.710152	6.408695	-7.107246	-6.750732	0.066667	-14.85507	-9.014496	0.811594	0.266666	0.585495	-0.255081	1.086956	-1.078262	3.368118	10.26668	-3.620291	1.147827	-1.295639	-3.547836	-2	0.165207	2.292755
EOCCR T-5	15.22028	2.460876	14.24927	17.37971	19.23768	-5.90435	2.672464	-6.808697	-6.336227	0.153623	-12.04638	-4.376816	0.628985	-0.243478	0.284073	0.579712	-1.947826	0.066666	3.797104	11.04058	-3.075363	1.944931	1.304352	0.785507	-1.843475	-0.365219	5.875366
FCR T-1	17.62318	11.57971	13.40869	12.77391	16.15942	-6.017395	5.17971	-6.643478	-11.41451	0.008696	-12.67246	-9.342026	0.489855	-0.136232	-1.397095	-2.217392	1.202896	-0.484055	1.8116	6.072464	-1.573912	-0.994202	-0.562317	-3.446365	-2.44928	-2.588409	-0.249283
FCR T-2	16.27826	8.60289	16.17972	13.42029	17.05218	-5.828983	4.968116	-6.846378	-13.66376	0.06087	-11.65797	-9.94783	0.884058	0.04058	-0.217392	-1.504349	1.823189	1.333328	3.565216	10.34493	-2.136231	1.513046	0.391312	-0.437683	-1.263763	-3.597107	-1.576797
FCR T-3	18.42609	10.71014	13.46378	13.33043	16.53333	-5.762318	5.698551	-4.52174	-17.08696	1.895652	-9.475365	-13.70725	0.391304	0.237681	-0.953613	-2.101456	0.968117	-0.226089	3.176819	7.782623	-2.26087	1.27536	-0.057968	-4.440582	-1.840584	-1.878265	0.53334
FCR T-4	17.13623	10.46378	12.57971	14.88405	17.77971	-6.365219	5.75942	-6.823189	-9.611588	0.014493	-12.57101	-6.817383	1.08116	0.426086	-1.359421	2.43187	5.417393	2.194214	2.779709	10.21449	-3.936232	2.110153	0.440582	-0.640579	-1.646378	-2.176804	1.489853
FCR T-5	20.27826	13.8087	15.23479	14.28406	19.61449	-6.350723	2.2	-5.243481	-4.255066	0.002899	-11.25797	-9.023193	0.53913	-0.205797	0.846375	-1.765213	1.301449	-0.466675	2.431885	7.788406	-3.069565	2.373917	2.101456	-2.237686	-1.947823	-1.744934	3.463776
SER T-1	15.61449	13.10725	17.84927	14.26376	18.21449	-4.892754	5.797101	-5.072464	-16.52464	0.02029	-10.57391	-10.43768	0.75942	0.04058	0.907257	-3.072464	2.550724	1.197113	2.939133	13.89854	-4.301449	0.426086	1.773911	0.924637	-2.188408	-2.744919	0.530441
SER T-2	17.8058	11.41449	16.31885	15.20869	18.17391	-5.918842	5.397101	-5.753624	-9.092758	0.002899	-10.48116	-8.455078	0.426086	-0.005796	0.399994	-2.330429	1.472466	1.394211	3.889862	18.06667	-4.991304	0.313049	-0.849274	0.339127	-2.759422	-3.324646	1.437683
SER T-3	16.9855	9.521744	14.53914	14.97681	18.19421	-6.208698	5.104348	-5.968113	-13.70726	0.014493	-12.79131	-9.220291	0.547826	-0.237681	-0.599991	-0.092758	4.472462	2.495651	6.736237	23.26667	-6.217392	1.084061	-1	-2.930435	-3.669563	-2.13913	0.765213
SER T-4	17.70435	9.895645	17.97971	14.26666	17.57681	-6.956524	5.37971	-6.310143	-7.382614	0	-12.63188	-9.507248	0.542029	-0.002899	-1.727539	-0.965225	4.527538	0.686951	3.614487	22.1855	-7.336231	0.078247	1.727539	-1.773926	-3.081154	-2.907257	0.718842
SER T-5	16.27826	8.579712	14.39131	14.08986	17.50145	-5.886959	6.13913	-6.11594	-13.21449	0.176812	-11.53333	-6.759415	1.814493	1.924637	-1.27536	3.956528	6.907246	-0.475372	4.791306	20.74493	-6.611595	-0.486954	-2.1884	-1.608688	-2.339127	-2.321732	1.394196
SSR T-1	16.8261	7.994202	8.226074	9.820297	14.27535	-4.597099	6.478261	-4.417389	-17.25217	5.878261	-7.736229	-15.96811	0.643478	0.165217	0.915939	-1.50145	0.881161	1.478256	1.533325	8.504349	-2.652172	1.171021	0.289841	-3.255066	-1.527542	-2.455063	0.713043
SSR T-2	17.13623	11.49855	13.23477	7.65506	12.08986	-6.026085	7.089855	-5.179707	-20.04347	8.368116	-6.750725	-19.55364	1.553623	0.713043	0.197113	-1.121735	2.550724	2.081161	0.875351	11.30145	-3.399998	1.669571	1.942032	-3.70726	-2.507248	-2.576813	0.718842
SSR T-3	18.44638	9.820297	9.098557	8.53624	11.48116	-4.773911	6.64058	-4.130432	-17.16232	9.510145	-4.869568	-16.92754	0.852174	0.44058	1.50145	1.672455	4.304352	2.469559	2.327545	8.791306	-2.898552	1.333344	1.063782	-2.240585	0.365219	-1.452179	1.730438
SSR T-4	12.06957	6.168106	7.431885	10.93044	16.69275	-3.669571	7.162319	-4.486954	-16.71304	5.37971	-9.217392	-14.67827	1.321739	-0.066667	-1.440567	-0.60289	-0.211594	1.443481	1.49855	12.65797	-4.65797	0.298553	0.794205	-5.115936	-2.475357	-3.098557	0.892746
SSR T-5	20.46956	12.44928	11.08116	11.1971	14.87537	-7.237686	6.782609	-6.82029	-16.8	8.182609	-9.214493	-19.84058	1.292753	0.411594	-1.452179	-1.310135	-0.33913	0.565216	1.907257	11.69856	-4.02319	4.973923	3.556519	-4.243484	0.617386	-1.684052	-1.452179
SCR T-2	24.89855	13.84638	15.48406	7.968124	12.1971	-7.379707	6.475363	-4.742027	-19.25508	2.518841	-7.875366	-17.72174	0.46087	0.037681	1.237686	4.049271	9.315941	2.22319	11.88695	28.85218	-9.675362	11.53043	9.144928	2.391296	-1.423195	-2.872467	0
SCR T-1	24.91594	16.04347	15.27536	10.55652	11.17681	-10.87826	7.350724	-4.275364	-15.85217	0.026087	-12.46088	-16.30724	0.08116	0.049275	-0.695648	0.431885	-1.017391	0.704346	6.695648	14.07246	-5.165218	9.915939	9.284058	7.634781	-0.330437	-0.773911	6.614487
SCR T-3	23.79131	12.67535	14.02609	9.098557	11.88116	-6.886955	5.495652	-5.805798	-16.85507	0.086957	-10.23189	-14.86377	-0.715941	-0.857971	0.924637	3.472473	-3.046379	1.747833	11.22029	27.10434	-9.359421	1.339127	1.159409	-2.420288	-2.08696	-3.13623	1.313049
SCR T-4	19.33913	12.24638	14.50435	9.49855	12.75362	-5.530434	6.431884	-4.655075	-15.02609	0.034783	-8.721741	-15.87247	1.011595	0.527536	-0.953613	7.22319	6.156521	4.304352	5.713043	17.01449	-5.965218	0.768112	-0.782608	-4.594193	-2.579712	-3.518829	2.092758
SCR T-5	22.87535	17.0145	16.71014	9.718842	11.24058	-9.194202	3.428985	-4.466667	-18.30435	0.034783	-6.301453	-18.44638	1.020289	0.101449	0.446381	3.414505	10.17971	3.402893	7.553619	24.91305	-8.292753	19.2029	18.08984	9.037689	-1.397102	-3.069565	0.715942
EOCHN T-1	14.47826	11.67247	11.72754	5.695648	9.176819	-3.913048	4.15942	-6.539131	-14.3913	6.892754	-7.284065	-16.8232	0.469564	0.113044	1.423187	0.284058	2.249275	0.866669	3.159424	17.82319	-7.420288	0.379715	-2.124634	-0.321732	-2.113045	-2.591309	0.91304
EOCHN T-2	19.04639	14.35942	11.92754	7.165207	14.03479	-4.915947	4.455073	-6.686958	-15.70725	14.44058	-3.037674	-17.23479	0.852174	0.498551	0.869568	-0.17392	1.515942	0.475372	4.646378	16.66667	-6.65797	0.402893	1.252167	-2.559418	-2.168121	-3.513046	-0.840591
EOCHN T-3	15.25798	11.38261	9.739136	8.44928	14.05797	-4.617393	4.50145	-6.469566	-17.68115	8.194202	-7.634781	-17.3652	0.75942	-0.031884	1.539139	-0.588409	1.498558	0.562317	1.944931	14.04347	-7.199997	0.200012	-0.373917	-4.060867	-1.484062	-1.98262	0.559418
EOCHN T-4	16.8145	12.91014	10.10144	6.614487	12.01158	-5.026085	3.55942	-6.762321	-16.38261	2.898551	-9.649277	-15.38841	0.452174	0.208696	1.092758	-1.631897	0.655075	0.295654	2.336243	9.921738	-3.90435	0.269577	0.58551	-6.385513	-3.046371	-2.591309	0.715942
EOCHN T-5	18.40291	11.44928	10.24348	6.6203	9.562317	-5.284058	5.788405	-5.849281	-18.48116	19.10435	-1.910141	-19.08696	1.710144	0.701448	2.10144	1.968124	-0.402893	0.768112	5.226089	14.51885	-7.399994	2.521744	1.037689	-2.889862	3.713058	2.344925	2.936234
MHORD T-1	15.97102	11.06957	10.27536	12.88117	17.04929	-6.420288	6.182609	-4.046371	-18.59421	7.898551	-7.678261	-16.26376	1.51884	0.585507	1.60289	3.017395	-0.017395	2.289856	5.486969	9.286957	-4.202896	4.907242	3.350723	-4.318832	-0.466667	-1.771011	0.385498
MHORD T-2	20.0029	13.23189	12.69856	9.843475	14.69855	-4.620285	5.655073	-5.260872	-18.9884	7.188405	-8.371002	-16.71594	0.594203	0.063767	1.388412	2.791306	5.234783	0.571014	3.36232	12.71884	-5.197098	2.889847	0.556534	-2.426086	-1.199997	-1.515945	0.823196
MHORD T-3	22.56522	13.85797	12.96231	12.64058	16.77681	-8.565216	8.469565	-7.144928	-23.40869	12.07536	-7.394211	-21.71594	0.962318	-0.272464	-0.568115	1.605804	0.634781	-0.057968	5.281158	13.58551	-5.371014	10.8232	7.663773	0.41449	0.840576	1.466675	8.179718
MHORD T-4	24.06667	15.17682	14.77393	9.669571	13.04059	-6.495651	8.110145	-4.875366	-20.31883	9.034782	-8.084053	-18.58261	0.640579	0.08116	1.037674	1.756516	3.194202	1.107239	4.182602	10.4	-3.646378	2.695648	1.373917	-3.263779	-2.075363	-2.582596	2.89566
MHORD T-5	18.16232	11.40579	9.988403	11.37972	15.86087	-3.707245	4.831884	-5.939133	-19.68405	9.22029	-8.13623	-17.42609	0.68116	0.055072	0.660873	-0.799988	2.475361	2.066666	3.802902	14.57681	-5.36232	6.127533	4.513046	1.031876	-3.808701	-3.081161	2.304337
FGSD T-1	35.07536	23.60579	19.39711	8.953613	15.4145	-4.918839	2.663768	-5.886955	-13.34203	0.721739	-8.843475	-18.91594	-0.034782	0.115942	2.362305	-0.10144	-0.562317	-0.800003	2.953629	7.069565	-2.591305	-0.336243	0.518845	-0.713043	-2.153625	-3.36232	2.014496
FGSD T-2	28.08116	19.60869	16.1913	12.71014	21.33913	-5.942024	3.585507	-5.878262	-18.33624	0.144928	-8.715942	-19.16231	0.481159	0.194203	2.08696	2.028992	-0.171017	-2.017395	4.530426	8.368111	-3.15942	2.397095	1.365219	-0.75943	-2.118835	-4.052185	3.463776
FGSD T-3	28.92464	18.1971	17.8	15.44927	23.85217	-7.205799	2.472464	-6.776814	-18.49275	0.017391	-11.67826	-20.84058	-0.211595	-0.901449	-0.095657	-2.20871	0.049274	-3.162308	6.466675	8.750725	-0.666666	2.199997	1.347824	-0.46376	-3.286957	-5.672455	2.513031
FGSD T-4	32.26088	19.74492	13.68985	9.13623	17.24059	-4.776814	4.243478	-5.536232	-21.59999	0.153623	-8.63768	-23.33044	-0.153623	-0.301449	0.817383	-1.518845	-0.115944	-0.057968	4.147827	9.014496	-3.040581	0.020294	-1.133331	-2.263763	-2.779709	-3.663757	0.736237
FGSD T-5	16.77971	9.405792	5.878265	12.16522	18.24059	-4.098549	3.484058	-2.776814	-16.84058	0.014493	-7.382614	-13.6087	-0.066667	-0.26087	1.081161	-0.817398	0.646378	-2.081161	2.452164	5.481163	-1.939131	1.36232	-0.194199	-0.881165	-2.695648	-4.562317	2.672455
MHOR T-1	25.39999	17.23189	10.72754	10.29855	11.16232	-10.52174	6.67826	-4.275364	-19.57101	1.689855	-5.336235	-23.18842	0.655072	0.017392	1.704346	-0.910156	1.176811	0.701447	6.394211	10.87537	-4.292753	12.93623	10.73624	3.339127	-2.005798	-4.144928	0.785507
MHOR T-2	24.24638	17.1942	11.64348	14.2	15.23478	-10.6116	6.417391	-3.243481	-20.31015	4.527536	-5.185509	-23.3913	0.518841	-0.272464	1.446381	-0.707245	0.286957	0.797104	4.527542	10.95652	-3.852177	13.11304	11.77681	5.089859	-3.81739	-4.460861	2.417389
MHOR T-3	26.98261	19.53043	15.62029	15.62608	14.0116	-13.45507	6.837681	-4.968117	-26.09856	1.023188	-6.101456	-23.34493	0.457971	0.228986	1.159424	-1.46666	-0.663765	0.373901	5.51593	12.57101	-3.547827	10.55362	9.008682	1.973923	-2.272461	-3.91304	-1.199997
MHOR T-4	28.09274	19.93333	12.95073	18.8174	15.8029	-12.37971	5.878261	-5.133335	-24.42609	0.110145	-9.646378	-26.47827	0.472464	0.069565	0.576813	1.50145	0.72464	-1.985504	4.843475	12.9884	-4.97681	13.43768	9.049286	4.226089	-2.147827	-4.440582	2.565216
MHOR T-5	33.71884	23.39421	17.76231	22.57101	18.4174	-15.10145	7.881159	-5.985508	-24.73624	1	-9.472466	-28.45796	0.42029	-0.08116	-0.542023	0.092758	1.118843	0.394211	12.87537	13.23479	-10.01739	20.53043	17.44638	8.904343	-0.72464	-3.278259	1.779709
CMT T-1	13.62318	1.431885	17.93622	10.12463	12.63478	-3.605797	2.423188	-5.669567	-2.243469	0	-12.64348	-6.220291	0.165217	0.336232	1.217392	-2.828979	1.156521	-1.478256	9.356522	15.09855	-5.991304	0.133331	-0.040588	-2.037689	-3.350723	-3.05217	4.405807
CMT T-2	15.83768	3.402893	12.73042	11.44057	14.41739	-4.660866	2.646377	-6.86377	-4.782608	0.098551	-13.83768	-3.991302	0.623189	0.060869	1.933334	0.434784	-1.237682	-1.202896	4.805786	26.59421	-10.03768	1.263779	1.321747	-1.026093	-2.284058	-2.379715	3.675369
CMT T-3	16.62318	5.968109	12.23479	10.60289	14.32174	-5.084061	3.747826	-9.359421	-9.846375	3.292753	-12.75652	-5.040573	0.85797	0.017391	0.130432	-1.75943	0.542027	-0.826096	5.411591	24.73623	-9.489853	1.678253	0.466675	-2.27536	-1.44928	-1.695648	2.713043
CMT T-4	11.92174	3.486954	11.10434	9.823181	14.24928	-6.121742	4.028986	-5.269566	-4.837692	0.002899	-12.97102	-4.750717	0.576812	0.130435	0.849274	-0.86377	-1.252174	-0.669571	6.342041	27.35073	-10.10725	1.388412	1.014496	-3.214493	-2.779709	-1.907242	3.113052
CMT T-5	15.64058	4.243484	10.66666	9.544922	13.8087	-3.605797	5.985507	-6.776814	-6.336227	1.808696	-11.7942	-4.924637	1.17971	0.663769	-0.826096	-1.991302	1.075363	0.750717	5.971008	25.00289	-8.513044	0.089859	-0.34494	0.359421	-3.052177	-1.675354	3.194214

Roasting Temperature Test

	R19	G19	B19	R20	G20	B20	R21	G21	B21	R22	G22	B22	R23	G23	B23	R24	G24	B24	R25	G25	B25	R26	G26	B26	R27	G27	B27
NR T-1	22.11884	2.057968	18.88406	15.45798	20.17101	-6.408699	4.608696	-4.156521	-10.68115	2.298551	-13.26376	-7.72464	1.130435	0.342029	-1.785507	4.455063	3.385506	1.228989	0.350723	0.849274	0.02029	2.455078	0.901459	-2.217392	-2.408699	0.608696	5.768112
NR T-2	10.71304	5.611603	8.060867	15.46956	21.46088	-9.22319	2.666667	-7.791306	-6.713043	5.73913	-11.87827	-4.153625	2.736232	-0.394202	-5.182602	1.626083	-0.971016	3.388412	0.840591	3.733337	-0.069565	1.50145	1.226089	-1.669571	-1.623184	0.698547	3.614487
NR T-3	15.97681	7.521744	7.886963	16.74493	21.04928	-6.646374	2.411594	-5.171017	-6.084045	2.101449	-10.32755	-1.773911	0.742029	0.243478	0.91304	5.104355	1.950726	4.481171	1.881165	2.391312	0.800003	3.321732	3.211594	1.072464	-1.655067	1.768112	6.556519
NR T-4	21.50725	8.133331	9.011597	18.11594	21.23478	-9.72464	5.066667	-7.553623	-8.744919	3.797101	-10.07246	-5.394196	2.197102	2.289855	-0.489853	4.057968	1.200001	0.889862	1.573914	5.263763	-3.678261	3.733322	4.020294	2.228989	-4.631889	0.643478	5.681168
NR T-5	22.05797	7.260864	8.431885	18.68406	23.1942	-10.17681	6.118841	-6.281158	-10.14783	1.724638	-12.51595	-3.924637	0.776811	-0.107246	-0.657974	4.026093	2.933334	2.942032	2.63768	1.324638	-0.081158	5.904343	2.385513	-5.614487	-1.101456	2.788406	4.060867
180C T-1	21.50145	7.278259	16.73624	15.06377	18.09855	-14.16232	5.6	-8.243477	-8.463776	3.110145	-11.34203	8.41449	1.573914	0.617391	-1.814499	4.588409	2.936234	3.240585	2.055069	2.649277	-0.449276	14.83769	13.9942	5.130432	-1.849281	3.504349	11.76811
180C T-2	24.65218	11.84927	13.85217	15.20869	15.17392	-13.55363	5.805798	-7.953625	-6.640579	4.098551	-12.18841	8.678253	3.626087	2.092753	-1.411591	5.820297	4.936234	2.13913	3.843475	4.918839	-0.255074	14.45218	12.64926	3.284058	-1.910149	2.199997	12.63478
180C T-3	20.2058	9.13623	16.06667	17.93623	17.51884	-15.33337	4.110145	-6.336231	-9.875366	2.281159	-13.77682	7.36232	2.347826	0.046377	-1.762314	5.869568	3	3.376801	2.10144	3.281158	0.231884	14.19132	13.42899	4.373901	-2.892754	0.176811	15.26086
180C T-4	21.82898	10.54782	11.7971	18.89275	16.9942	-16.31594	6.771014	-7.098553	-8.634781	3.124638	-12.41159	5.643478	4.35942	0.753623	-1.185501	5.391312	3.808697	0.655075	4.994202	5.10434	-4.27536	17.68407	14.06087	6.698547	1.979706	1.324631	12.97391
180C T-5	22.03189	7.634781	16.02609	19.11305	18.09566	-16.89275	6.075362	-6.718838	-3.507248	3.423188	-12.34782	12.23769	4.301449	1.724638	-1.968109	6.74202	4.394203	2.794205	3.457962	5.095657	-5.005798	15.9942	17.50435	5.127533	-3.556519	-0.252167	12.3913
200C T-1	16.08696	9.869553	17.69855	14.25217	22.15072	-6.457973	4.910145	-5.028988	-18.67535	3.727536	-12.26086	-4.249283	1.04058	0.173913	-1.472458	4.400009	2.231884	1.611603	3.142029	2.107246	-1.588406	4.727539	2.553619	-3.773911	-1.260872	1.530441	4.823196
200C T-2	15.99131	10.86667	15.68407	14.55073	21.35652	-8.805798	5.205797	-5.568117	-20.48116	1.081159	-11.21449	-4.973907	1.704348	2.147826	-1.063766	3.747818	3.237682	3.005798	2.252167	1.124634	-0.333332	4.675354	2.434784	-2.318832	-2.228985	0.849274	5.91304
200C T-3	22.11885	13.84927	14.35074	15.52753	18.17101	-11.63478	6.118841	-6.414494	-18.78261	3.623188	-11.00869	-1.628983	-0.953624	-1.475362	-2.260864	6.901443	5.347824	2.26088	2.005798	2.14492	-0.17971	10.90436	8.74202	1.634781	-2.713043	1.165215	7.040573
200C T-5	21.53334	10.1913	18.82608	17.23188	21.33334	-12.53913	5.930435	-6.626087	-16.02029	2.77971	-11.30435	-2.373901	3.550725	0.965218	4.400009	2.507248	12.73623	3.104355	3.481155	1.081161	0.440578	17.70435	5.739136	1.936234	-2.336227	2.420288	9.142029
200C T-4	21.31595	10.0174	17.44058	21.43768	21.34203	-14.87826	5.118841	-6.226086	-17.06377	0.089855	-11.97971	-1.32753	2.257971	2.536232	-0.188416	5.399994	2.333332	1.472458	2.402908	-0.185501	-3.742029	19.14493	6.823196	2.037674	-2.466667	1.353622	9.281158
210C T-1	17.70725	9.231888	11.08406	7.324631	14.74203	-5.857967	2.924638	-4.591305	-19.22609	5.353623	-10.28115	-13.10725	-0.115943	-0.414493	1.118851	4.150726	0.982609	1.594208	2.628983	3.162315	-1.834785	1.199997	0.353622	-2.394211	-1.36232	-2.820282	1.878265
210C T-2	15.61739	3.805801	7.41449	6.820282	12.91884	-6.582607	3.944928	-4.002899	-25.10144	3.976811	-12.16811	-14.32173	0.985508	0.495652	-1.669571	0.875366	1.321739	-0.771011	3.431885	4.084061	-1.026085	0.573914	0.55072	-2.524628	-3.747826	-4.057983	2.008698
210C T-3	17.31884	5.872467	10.33623	7.408691	9.852173	-5.54203	3.214492	-4.23768	-21.42899	0.857971	-12.51014	-11.8232	0.591305	-0.260869	1.121735	6.408707	1.539131	3.562332	9.10144	1.507246	-1.536232	2.226089	-0.115936	-1.907242	-2.556522	-3.805794	4.005798
210C T-4	14.5884	2.040588	9.22319	8.805801	12.83188	-8.489853	5.214493	-5.799999	-24.94493	3.973913	-10.42899	-15.27828	1.333334	0.6	-0.049286	6.22319	1.756519	2.730438	5.510132	3.295654	-0.985508	4.153625	3.53624	-3.536224	-2.197105	-3.689857	2.150726
210C T-5	18.32465	8.028976	11.22318	10.34203	14.42609	-9.197102	1.521739	-8.075363	-23.73044	6.092754	-10.70725	-17.39999	1.078261	0.452174	-0.597092	4.727539	1.550724	2.133347	4.478256	3.455078	-1.028984	4.263763	3.202896	-3.539124	-1.68116	-2.255066	0.988403
220C T-1	13.62029	10.61159	9.750732	18.04637	15.15073	-16.35073	6.785507	-4.402897	-30.55072	6.608696	-10.75942	-16.9884	1.214493	-0.202898	-3.072464	6.46666	3.153622	0.388412	4.214493	5.324638	-1.942028	18.2058	15.13333	2.524643	-3.069565	-1.997101	4.968109
220C T-2	18.66667	13.73624	15.10146	18.29855	14.25797	-14.65797	6.440579	-4.052174	-27.79131	6.373913	-9.771011	-14.48406	0.176812	0.626087	0.684052	7.481171	3.101448	1.405792	2.875366	2.782608	-0.089855	18.22319	15.99132	5.228989	-2.31015	-1.046379	7.663757
220C T-3	17.04347	14.56522	16.43478	22.37102	19.77681	-16.03478	7.414493	-3.852177	-25.37972	7.066667	-9.515945	-16.08986	0.336232	3.278261	0.576813	6.539124	4.86377	1.168106	4.605804	3.365219	-0.440578	19.52464	17.41739	6.243484	-2.240578	-0.559418	8.913055
220C T-4	17.58261	11.41159	12.78841	19.72464	16.08406	-15.75073	5.562319	-5.898552	-25.53912	5.666667	-9.078262	-16	0.521739	-0.130435	0.359421	4.927536	4.469566	1.315948	3.130432	2.91304	-0.09565	4.399994	12.91014	5.385513	-2.739128	-0.968124	6.237686
220C T-5	18.64348	12.58839	14.9971	21.64638	18.44638	-14.38261	6.147826	-3.982609	-26.66957	5.489855	-8.211594	-15.69565	1.573913	2.228985	-2.391312	5.933334	5.147827	0.156525	5.098541	4.078262	-0.895653	14.57681	11.09276	4.72464	-2.278259	-0.65506	6.968124
230C T-1	15.8232	6.881165	14.42319	12.62318	23.25797	-8.463768	5.289855	-4.617393	-33.53624	7.269565	-10.03478	-23.48406	-0.150725	0.089855	-1.817398	3.800003	1.553623	3.228989	4.791306	12.94202	-5.272463	1.773911	2.631882	1.046371	-2.252174	-1.394203	3.771011
230C T-2	18.15651	10.08984	12.11014	11.32463	21.9913	-9.115944	3.910145	-4.127533	-24.62608	9.063768	-9.710144	-19.88986	1.539131	0.785507	0.321747	3.768112	1.437683	2.371017	4.365219	14.34203	-5.324638	4.582611	2.284058	-2.750717	-2.660873	-3.31015	1.86377
230C T-3	16.92754	9.63768	7.185516	10.14203	21.15073	-7.472466	4.06087	-5.376812	-21.05508	10.03478	-9.597107	-21.06377	1.365217	1.498551	-0.22319	7.237686	5.15942	1.620285	3.252182	9.388397	-4.237682	0.886963	0.266663	-3.150726	-2.32753	-3.388412	2.718842
230C T-4	18.51885	9.402908	12.9884	12.59131	20.13334	-8.176811	5.889855	-4.840584	-24.21159	12.37971	-7.060883	-20.06667	2.028986	0.846377	-2.721741	6.672455	3.133335	1.51593	3.794205	10.91306	-2.550724	4.411606	1.60289	-3.942032	-1.49855	-2.646378	2.802902
230C T-5	17.46378	10.17102	13.96523	17.10725	28.04928	-9.072464	5.313044	-4.226086	-35.13043	7.988405	-10.77972	-21.61449	3.069565	2.336232	-3.956528	9.550735	9.649273	0.463776	3.927536	11.38551	-2.431883	3.521744	1.686951	-2.072464	-3.489853	-2.759415	2.756531
240C T-1	20.21449	12.32463	13.11594	17.08406	14.34203	-13.37102	7.043478	-4.455074	-26.06667	8.733334	-6.54493	-16.90436	2.936232	2.237681	-1.342026	6.730423	5.147823	3.663773	5.22319	16.84639	-6.55652	17.25217	13.86955	6.77681	-1.965218	-0.214493	9.104355
240C T-2	22.06377	13.60291	13.76813	5.681168	12.63769	-7.41449	5.657971	-5.373913	-26.12753	10.48116	-8.840576	-21.49565	3.602899	2.773912	-1.382614	7.817398	4.515942	1.715942	3.457962	15.97101	-4.50145	2.353622	1.089859	-0.315948	-3.794205	-4.278259	2.402908
240C T-3	23.52174	13.52464	18.77681	10.4	18.9884	-10.8116	5.489855	-5.072464	-31.72464	7.22029	-10.32464	-20.77971	1.144928	1.446377	-1.147827	5.994202	4.753624	1.620285	4.608688	19.6	-6.368116	4.27536	3.182602	-1.005783	-1.765213	-1.539131	4.701447
240C T-4	18.43478	10.57971	12.16522	9.626099	18.52174	-11.07536	6.084058	-5.408695	-24.16812	10.91015	-8.107254	-17.72754	2.182609	-0.179709	1.13913	9.962326	10.26957	-0.304337	4.991302	14.51885	-4.150726	4.628998	3.304352	0.527542	-1.081161	-1.953613	5.310135
240C T-5	21.63768	15.51593	15.60001	12.40291	11.85797	-14.50435	7.02319	-4.669571	-19.47537	10.32754	-7.208694	-16.73624	2.492752	0.182609	-1.060867	10.39421	13.77102	4.663773	5.530441	15.61739	-4.782608	15.24927	12.78261	3.597107	-2.437683	-0.217392	7.304352

Roasting Time Test

	R19	G19	B19	R20	G20	B20	R21	G21	B21	R22	G22	B22	R23	G23	B23	R24	G24	B24	R25	G25	B25	R26	G26	B26	R27	G27	B27
1min Roast T-1	18.22609	10.75653	14.70145	0.855072	4.2145	-9.765213	2.617391	-6.121738	-21.04639	2.710145	-11.73334	-3.907257	0.469565	0.124638	-0.060867	1.805801	0.391304	2.837677	1.011597	6.895653	-2.263767	-1.144928	1.701447	-5.217392	-2.901451	-4.643478	3.87825
1min Roast T-2	18.02609	10.0087	25.26376	8.857971	18.21159	-6.104343	4.4	18.68696	-5.617386	4.35942	-8.376816	-4.869568	0.652174	0.115942	4.713043	2.939133	-1.220291	5.13623	2.96521	5.553619	-1.466667	2.481155	2.313034	2.321732	-0.915939	-2.753632	2.008682
1min Roast T-3	19.86375	11.13623	21.07826	5.171005	16.35652	-3.721737	2.724638	-5.092754	-15.27826	0.434783	-10.26087	-6.579712	0.405797	0.411594	1.542023	2.072464	-1.246376	4.855072	1.344925	6.228989	-1.118843	3.892746	3.568115	4.289856	-2.304352	-2.965218	2.400009
1min Roast T-4	20.30725	9.63768	12.78841	8.495651	17.57971	-8.08696	3.872464	-5.901451	-16.70725	2.142029	-10.78841	-4.321732	1.318841	0.165217	0.255066	4.599991	1.113041	2.165222	3.165222	5.394196	-1.379711	2.823196	1	2.208694	-1.808701	-4.77681	4.191299
1min Roast T-5	17.88117	8.318848	18.95073	10.83768	18.46957	-12.17681	4.139131	-6.678261	-17.26956	3.156522	-9.765221	-4.547821	0.550725	-0.205797	1.171005	1.107239	0.133335	2.60289	2.918839	4.828995	-0.863766	2.060867	1.50145	2.199997	-1.814499	-3.944923	2.936234
5min Roast T-1	28.12465	15.08406	21.83768	9.759415	14.59421	-13.31305	4.437681	-6.428986	-21.15653	4.965218	-9.521744	-17.94203	0.533333	0.084058	-0.373917	2.750732	-0.565216	0.8116	3.191315	4.379715	-1.098551	13.90436	11.27536	3.973907	-2.72464	-5.199997	0.681152
5min Roast T-2	28.15073	17.61739	21.02029	8.663773	13.44347	-10.0029	2.768116	-5.489857	-16.37102	3.481159	-10.03768	-15.9942	1.315942	0.536232	1.127533	2.289856	-0.06377	2.823196	4.692749	6.002892	-1.750723	5.782623	4.130432	-0.869568	-1.176811	-3.028984	7.333328
5min Roast T-3	20.02608	12.16811	12.54202	5.095642	11.56233	-6.884056	5.17971	-7.121738	-16.70726	8.289855	-9.446373	-19.2	1.008696	0.643478	-0.240585	3.307251	0.788406	2.521744	3.295654	5.266678	-0.889854	3.753632	2.231888	-0.979706	-1.739128	-4.831879	2.626099
5min Roast T-4	24.49275	15.65796	20.06377	6.263763	13.44348	-12.73623	2.208695	-8.098553	-19.91306	6.536232	-10.4174	-14.46086	0.486957	-0.078261	-1.226089	-0.066666	-0.57391	2.063766	3.518845	3.727539	-0.553623	8.113052	6.344925	2.292755	-2.362312	-3.979721	1.872467
5min Roast T-5	20.85797	11.32753	17.13043	12.81738	19.56522	-13.66956	3.884057	-7.823193	-19.55942	8.68116	-10.65507	-22.09276	0.765218	1.052174	0.13623	3.55072	1.765217	2.020294	2.191299	4.82608	-2.139133	13.73914	13.66667	5.68985	-2.657967	-1.710144	9.118851
10min Roast T-1	25.87827	16.91594	21.66667	9.704346	19.20869	-7.831882	2.478261	-6.252174	-18.78841	0.423188	-13.51884	-11.28986	0.200001	0.188406	1.32753	0.118851	-0.82029	2.226074	0.368118	4.420288	-1.507244	1.060867	0.753632	-1.553619	-2.63768	-5.910141	4.553635
10min Roast T-2	22.61159	9.944931	24.3884	9.072464	18.21159	-6.582611	3.863768	-4.466667	-22.13333	2.362319	-11.18551	-16.8232	0.368116	-0.168116	0.191299	1.278259	0.86377	2.823196	2.953613	6.142029	-2.208696	2.22319	1.173904	-1.582611	-3.243484	-5.063774	6.113052
10min Roast T-3	17.84927	10.39131	15.8087	11.07246	21.63768	-9.597099	1.33913	-7.486954	-14.03188	6.756522	-8.628983	-13.9884	0.631884	0.257971	-0.420303	2.12175	0.492756	2.211594	2.028992	5.866669	-1.768116	2.373901	1.046371	-2.692764	-3.469566	-4.802895	4.889847
10min Roast T-4	20.33913	14.83478	12.1797	9.002899	18.5797	-8.13913	2.304348	-6.263767	-17.61159	1.513044	-10.46957	-15.91016	0.356522	-0.173913	0.191299	2.628983	1.260872	1.301453	1.611603	5.472458	-1.42609	0.475357	-0.918839	-4.921738	-2.162315	-5.27536	5.342041
10min Roast T-5	20.57101	13.65508	13.54782	7.005798	15.52753	-7.388405	1.773912	-6.695656	-16.49565	7.397102	-9.878265	-18.37102	1.469565	0.515942	3.257965	1.750732	0.17971	4.060883	1.831879	5.785507	0.208694	1.455078	1.144928	-2.353622	-3.286957	-4.257973	5.052185
15min Roast T-1	13.62029	10.61159	9.750732	18.04637	15.15073	-16.35073	6.785507	-4.402897	-30.55072	6.608696	-10.75942	-16.9884	1.214493	-0.202898	-3.072464	6.46666	3.153622	0.388412	4.214493	5.324638	-1.942028	18.2058	15.13333	2.524643	-3.069565	-1.997101	4.968109
15min Roast T-2	18.66667	13.73624	15.10146	18.29855	14.25797	-14.65797	6.440579	-4.052174	-27.79131	6.373913	-9.771011	-14.48406	0.176812	0.626087	0.684052	7.481171	3.101448	1.405792	2.875366	2.782608	-0.089855	18.22319	15.99132	5.228989	-2.31015	-1.046379	7.663757
15min Roast T-3	17.04347	14.56522	16.43478	22.37102	19.77681	-16.03478	7.414493	-3.852177	-25.37972	7.066667	-9.515945	-16.08986	0.336232	3.278261	0.576813	6.539124	4.86377	1.168106	4.605804	3.365219	-0.440578	19.52464	17.41739	6.243484	-2.240578	-0.559418	8.913055
15min Roast T-4	17.58261	11.41159	12.78841	19.72464	16.08406	-15.75073	5.562319	-5.898552	-25.53912	5.666667	-9.078262	-16	0.521739	-0.130435	0.359421	4.927536	4.469566	1.315948	3.130432	2.91304	-0.09565	4.399994	12.91014	5.385513	-2.739128	-0.968124	6.237686
15min Roast T-5	18.64348	12.58839	14.9971	21.64638	18.44638	-14.38261	6.147826	-3.982609	-26.66957	5.489855	-8.211594	-15.69565	1.573913	2.228985	-2.391312	5.933334	5.147827	0.156525	5.098541	4.078262	-0.895653	14.57681	11.09276	4.72464	-2.278259	-0.65506	6.968124
20min Roast T-1	20.84638	14.02608	13.54492	12.10725	22.13043	-8.573914	4.895652	-3.843479	-29.02319	9.936232	-7.397095	-20.09856	1.452174	0.35942	2.582611	3.368118	-0.556522	3.25798	4.846375	10.55942	-2.878262	3.202911	2.078262	-1.724625	-2.217392	-3.060867	4.081161
20min Roast T-2	23.21739	15.71594	15.1884	15.48406	26.21449	-8.02319	4.771014	-4.446377	-29.13333	2.162319	-11.64348	-20.9913	2.185507	2.408695	0.782608	7.771011	6.460869	2.371017	3.315948	9.376816	-3.901447	2.518845	1.753616	0.457977	-1.50724	-4.205795	4.878265
20min Roast T-3	19.75942	10.49855	15.88986	12.21159	26.05507	-8.915943	4	-4.104351	-22.53914	6.101449	-9.831879	-19.3884	0.866667	0.237681	3.50145	2.037674	-0.713047	3.77681	4.072464	12.25797	-4.698551	1.504349	2.168121	-2.356522	-2.431885	-2.107254	5.420288
20min Roast T-4	15.94203	6.788406	6.924637	15.73334	25.55073	-8.765217	4.376811	-5.495655	-25.98261	5.455072	-10.41449	-19.34203	0.965217	0.73913	0.701462	6.576797	2.034782	2.901443	4.904358	9.414497	-2.130436	2.701447	1.655075	-3.643478	-1.234779	-2.614494	5.727539
20min Roast T-5	12.41449	10.6261	10.2058	5.733337	12.0174	-10.37682	5.07826	-6.910149	-14.79709	9.785507	-10.24348	-20.42899	2.727536	3.139131	-0.562317	7.269562	-1.168118	1.243469	4.278259	8.886963	-3.089855	0.284058	1.547821	-0.976822	-1.939125	-3.765213	4.823181
45min Roast T-1	23.20581	15.87537	14.85217	8.098541	17.84058	-6.136238	7.536232	-2.666668	-40.371	14.87536	-7.240585	-27.14493	1.707247	1.715942	-0.956528	7.005798	4.185509	0.791306	4.171005	26.11015	-4.066666	2.353622	2.307251	-3.13913	-1.165222	-2.733337	0.82608
45min Roast T-2	26.28986	16.52754	14.70435	5.504349	12.23768	-5.397099	7.860869	-7.104347	-32.57971	7.686956	-8.565224	-22.03479	0.486957	0.188406	-1.460876	5.057968	1.788406	0.872452	4.768112	22.73332	-7.162317	2.011597	2.814484	-1.72464	-2.049278	-4.020294	0.756516
45min Roast T-3	24.51013	10.93333	12.86087	6.753616	11.05798	-3.733337	5.84058	-3.060867	-33.06377	2.846377	-10.17101	-24.77681	-0.188406	-1.246377	-0.785507	4.182602	0.02029	2.197098	6.692749	27.32463	-9.608696	2.205795	0.953629	-2.971008	-2.901451	-4.933334	3.142029
45min Roast T-4	20.72174	14.27246	12.86087	7.553619	13.64638	-4.171017	7.733333	-5.605797	-34.54202	9.327536	-10.27246	-22.95071	2.655073	0.689856	-4.649261	3.266663	3.571014	-1.591293	1.472473	23.79131	-4.617393	6.988403	4.907242	-2.286957	-2.092751	-5.313034	1.681152
45min Roast T-5	24.1913	16.8145	15.13043	7.788406	12.12174	-5.402901	6.147826	-5.765217	-32.34493	7.855072	-10.43478	-22.71594	2.837682	2.072464	-1.617386	4.011597	4.715942	0.527542	4.350723	22.04637	-5.640579	5.353622	3.434784	-2.460876	-2.13623	-4.365219	2.026077
3hr Roast T-1	16.65797	16.07826	9.32753	5.281174	7.020294	-8.46666	5.147826	-4.391304	-22.65506	12.09855	-6.182602	-20.23189	0.936232	0.913044	-2.176804	9.350723	4.324638	0.066666	5.008698	19.88405	-6.365219	12.19132	1.428986	-1.092743	-1.127541	-2.689865	2.17392
3hr Roast T-2	18.85797	12.45216	8.634781	3.942032	4.944931	-3	4.947826	-4.310143	-18.94202	9.704348	-6.60289	-19.629	1.495652	0.881159	-1.069565	8.318848	3.802898	2.49855	6.997101	18.93333	-3.530434	13.75362	1.782608	-5.527527	-0.953621	-2.391312	2.521729
3hr Roast T-3	15.64348	8.997101	5.713043	7.165222	12.48116	-7.411594	4.133334	-5.588406	-20.74782	9.481159	-8.631889	-19.31305	3.405797	2.443479	0.379715	9.495651	6.930435	-0.03479	5.194199	16.93623	-5.304348	14.15363	2.547821	-4.150726	-1.263763	-3.643478	0.423187
3hr Roast T-4	15.95073	10.60579	10.23769	14.09276	12.72465	-15.29276	4.73913	-5.463768	-19.77101	6.863768	-8.139122	-18.09566	0.510144	0.504348	1.704346	2.405807	0.878262	3.075363	23.70435	18.10144	-4.191303	16.57101	13.19711	4.962311	-1.652176	-3.559418	1.504349
3hr Roast T-5	[illegible]	[illegible]	9.057968	15.44347	12.33043	-15.28695	7.075362	-7.171017	-16.89276	9.939131	-9.124641	-17.14781	2.785507	2.753623	[illegible]	[illegible]	[illegible]	3.350723	7.733337	17.68697	-5.423187	21.67827	19.03189	7.144928	-0.292755	-1.408691	8.240585

	R28	G28	B28	R29	G29	B29	R30	G30	B30	R31	G31	B31	R32	G32	B32	R33	G33	B33	R34	G34	B34	R35	G35	B35	R36	G36	B36
Control T-1	-2.037689	-0.804349	-0.695074	-0.585798	-0.476522	-0.367247	-0.257971	-0.148696	-0.03942	-0.005797	0.280001	0.313624	0.347247	0.38087	0.414494	0.86377	-0.034783	0.301449	0.86377	0.86377	-0.034783	-0.150726	-0.153625	-0.098549	0	-0.284058	-0.710144
Control T-2	-1.026093	0.779713	0.662901	0.546089	0.429277	0.312465	0.195653	0.078841	-0.037971	0.008696	-0.489566	-0.442899	-0.396233	-0.349566	-0.3029	-0.368118	-0.237681	0.228985	-0.368118	-0.368118	-0.237681	-0.156525	0.504349	-0.263771	0.049275	-1.246378	-1.246376
Control T-3	-2.27536	-0.121442	-0.10782	-0.094198	-0.080576	-0.066953	-0.053331	-0.039709	-0.026087	0.04058	-0.069568	-0.002902	0.063765	0.130432	0.197099	0.686951	-0.292754	0.373913	0.686951	0.686951	-0.292754	0.17971	0.753616	-0.373917	0.121739	-5.281158	-6.208694
Control T-4	-3.214493	2.996662	2.544634	2.092606	1.640577	1.188549	0.736521	0.284492	-0.167536	0.008696	-1.909273	-1.733041	-1.556809	-1.380577	-1.204345	-0.759415	-1.649275	0.113045	-0.759415	-0.759415	-1.649275	-0.194199	0.72464	-0.237679	-0.176812	0.336231	-0.562321
Control T-5	0.359421	-1.72843	-1.449585	-1.170741	-0.891897	-0.613052	-0.334208	-0.055364	0.223481	0.005797	1.443206	1.225523	1.007839	0.790156	0.572472	0.753632	-0.359421	-0.284058	0.002899	0.753632	-0.359421	2.495651	1.194199	-2.976807	0	-0.344927	-0.408695
EOCCR T-1	-1.176804	-2.831879	-3.240578	7.144928	26.86957	0	4.350723	19.21449	-13.83478	9.837677	5.640579	-4.6	5.353622	6.794205	6.875351	1.773911	12.51595	-0.704348	17.0058	3.379715	0	2.750725	-0.226089	11.64348	-4.466666	5.597099	7.142029
EOCCR T-2	3.904343	-2.069565	-5.594204	4.631882	17.0087	0	7.350723	24.65218	-18.94493	9.976807	5.463768	-4.101449	3.950729	3.417389	4.976822	0.715942	9.72464	-0.605798	9.185516	0.950714	0	0.356524	0.008698	12.62608	-5.947826	4.695652	4.315948
EOCCR T-3	14.56522	1.492752	-7.066667	4.240585	13.89275	0	7.553635	24.88985	-20.37392	7.704346	5.852173	-3.147827	8.591309	9.150711	10.77101	1.713043	10.16522	-0.852173	12.9884	1.50145	0	1.371016	0.779709	9.159424	-5.927536	2.895653	3.147827
EOCCR T-4	-0.339127	-3.066666	-3.643478	7.866669	31.0087	0	5.930435	24.31305	-16.22319	2.113037	6.026089	-4.4	13.50435	13.12174	14.72173	3.286957	11.88406	-2.017391	21.22319	5.828995	0	2.939129	-1.191303	9.817398	-0.698551	6.779709	4.304352
EOCCR T-5	1.284058	-0.646378	-4.136234	5.495651	25.69565	-0.072464	5.278259	18.26378	-12.9913	9.733322	5.68116	-3.756521	6.991302	7.284058	10.13915	2.623184	10.87537	-0.246376	15.40581	4.753616	-0.02029	2.452173	0.31884	12.08116	-5.197101	5.226089	4.77681
FCR T-1	2.6203	-0.872467	-5.515945	8.678268	26.82029	0	3.269562	21.36522	-12.31595	8.834778	6.136234	-5.463768	8.747833	11.04637	5.327545	0.011581	9.191299	0.081159	14.9971	0.547821	0	3.698551	-0.286957	4.889862	2.860869	6.38261	2.22319
FCR T-2	-0.13623	-1.837677	-2.881161	9.023193	28.82029	0	3.078262	17.77681	-10.02609	9.944916	4.733334	-4.982608	11.70435	10.52174	13.95073	3.208694	8.953613	-1.530434	16.31015	1.600006	0	3.82029	0.301449	5.907242	2.872464	4.892754	2.437683
FCR T-3	0.959427	-0.402893	-3.347824	8.649277	29.65508	0	3.956528	18.94783	-11.11594	8.855072	6.547825	-3.826088	7.611588	8.246368	6.973907	0.36232	8.840591	-0.263769	18.829	5.27536	0	4.91884	0.228985	4.91304	2.356522	5.118839	2.211594
FCR T-4	-3.333328	-2.944916	-1.063766	10.77101	33.89276	0	3.89856	11.60869	-6.762314	8.318848	7.043476	-5.513044	9.950714	9.092743	10.84059	2.269562	10.07826	1.281158	19.35072	4.046371	0	5.715942	0.373913	6.542023	2.223188	4.336227	3.440567
FCR T-5	2.333328	-1.118851	-3.34203	10.3855	30.72174	-0.011594	3.878265	20.56232	-10.78261	9.144928	8.228989	-4.49855	8.197098	9.231888	0.495651	1.162308	8.924637	-1.440579	12.18262	1.214493	0	5.510144	0.113045	6.399994	0.211594	6.211594	2.356522
SER T-1	-2.849274	-2.939133	-3.54493	8.008698	28.63188	0	3.011597	19.02319	-8.831879	6.107254	6.715942	-4.971016	8.072464	8.417404	1.289856	1.026093	8.440582	0.849276	18.24347	2.565216	0	5.26087	1.475365	0.91304	2.773913	6.486958	1.710144
SER T-2	-6.147827	-2.910141	-2.550728	9.591309	28.48696	0.046377	2.988403	20.83478	-10.19421	9.539124	9.211594	-4.489855	9.246384	10.03188	1.582611	0.86377	8.188416	0.507246	13.92464	3.944931	0	5.052174	0.924637	2.730423	2.849276	6.281162	3.330444
SER T-3	-11.08695	-5.855072	-1.834784	10.09856	31.26377	0	3.797104	22.27826	-9.36232	10.86377	8.327538	-4.791305	9.408707	9.600006	7.756531	-0.368118	9.234787	1.55652	15.41159	0.881149	0	4.226088	-0.2029	6.997101	3.828986	4.634785	1.840576
SER T-4	-10.41449	-6.159424	-1.72464	9.495651	32.8029	0	2.875366	19.93044	-10.54204	7.811584	10.98261	-2.994202	6.944916	9.026077	7.704346	0.686951	8.744934	0.168117	18.07246	3.168121	0	4.6	0.799999	4.324631	3.397102	4.70145	0.614502
SER T-5	-11.65218	-5.733337	1.220287	9.405792	33.71885	0	3.46376	18.86377	-9.649277	8.655075	6.828983	-4.014492	7.953629	7.542038	8.994202	-0.759415	7.394196	1.373913	22.26376	6.53334	-0.026087	5.202898	0.950726	5.115936	3.863769	5.040577	0.857971
SSR T-1	-6.698547	-2.50145	-1.078262	2.944931	41.26667	-0.524638	1.263779	10.59419	-6.573914	4.843475	9.823189	-3.17971	5.744919	5.263779	6.205795	0.753632	7.197113	-0.582607	19.24059	6.742035	-0.933333	8.02029	3.101448	-4.205811	1.933334	5.495659	-4.034775
SSR T-2	-6.886963	-4.420303	-0.571014	3.623184	43.13623	-0.631884	0.89856	9.072464	-3.791306	4.486954	14.33624	-2.49276	8.542038	9.449265	3.478256	0.002899	7	1.176811	18.18552	4.255081	-0.055072	7.869564	3.333336	1.736221	1.898552	4.686958	-0.020294
SSR T-3	-4.423187	-2.371002	0.620285	5.344925	42.57681	-0.463768	2.817383	10.43768	-5.023193	6.599991	10.37682	-2.710144	6.98262	6.889847	6.840576	1.640579	7.484055	1.910145	20.59711	6.797104	-3.788406	9.368114	6.243477	-2.573914	2.052174	6.979713	-3.692749
SSR T-4	-9.318848	-4.153625	-0.173912	6.284058	42.23768	-1.104348	1.417404	8.608688	-2.446381	6.017395	12.57391	-3.510147	4.023193	2.342026	4.339127	0.092758	7.53624	1.234783	18.26956	4.481155	-1.997101	6.982609	1.301453	1.655075	2.50145	5.040581	1.072464
SSR T-5	-11.23477	-5.066666	0.994202	4.313034	47.29565	-0.475362	0.849289	9.510147	-4.515945	7.069565	15.46087	1.249275	9.489853	9.504333	1.452179	0.565216	8.040588	1.066666	20.9942	7.582611	-6.927536	8.150726	2.072464	0.014496	2.759418	6.139137	0.68985
SCR T-2	-5.118835	-4.394211	-0.857971	13.59131	28.38841	0	4.066666	17.24928	-7.889862	11.33914	7.098553	-7.055075	12.68985	12.81448	12.15073	2.339127	8.91304	1.069565	18.60291	4.214493	-0.008696	5.684059	2.805798	-0.127533	4.649275	5.50145	1.121735
SCR T-1	-5.991302	-5.486954	0.252174	12.22029	28.13623	-0.057971	3.318832	18.91304	-10.00288	10.77681	7.959419	-4.33913	11.1768	11.71014	9.115952	2.12175	10.33913	-0.124638	20.51305	4.736237	0	7.721739	4.805798	-8.443481	11.50725	11.50725	2.5942
SCR T-3	-9.773911	-5.643478	-1.475363	16.65797	25.11304	0.008696	5.347824	23.11305	-9.34494	13.31885	7.481163	-6.347824	9.484055	10.43768	1.281158	2.495651	10.97391	-0.397101	11.09564	6.634781	0	5.347826	2.834782	3.466675	6.115942	6.718842	4.533333
SCR T-4	-7.823196	-5.13623	3.223186	13.9971	35.17101	-0.521739	4.510147	18.25218	-8.199997	7.527542	7.605797	-4.249275	6.194199	6.765213	6.94783	2.365204	8.800003	0.356524	22.40579	7.489853	0	8.855072	4.156521	-8.521744	11.03768	9.779709	1.226089
SCR T-5	-7.965225	-3.886948	-1.240582	11.52754	31.46957	-0.002899	3.834778	17.95363	-7.869568	8.133331	9.773911	-5.324636	13.25217	12.43189	4.831894	2.588409	10.28116	-0.846377	21.44058	8.527542	-0.034783	8.6	4.22319	-6.289856	7.266667	9.08696	-1.266678
EOCHN T-1	-7.420288	-3.507248	0.623192	4.53624	37.15363	-0.223188	1.768112	11.59419	-7.32753	4.489853	6.736237	-4.663769	3.562317	3.466675	6.228989	1.553635	9.121735	0.234783	17.77971	5.901459	-0.237681	2.008694	-0.507248	4.281158	-4.782608	3.901451	1.713043
EOCHN T-2	-5.162308	-2.32753	-1.127533	3.368118	36.36232	-1.055073	1.388397	9.921738	-6.469559	6.655075	8.976814	-5.278263	4.014496	5.46376	4.023193	1.281158	8.718842	-0.704346	23.1913	8.426086	-0.292754	4.078262	1.524635	4.640579	-4.4	4.347824	3.521744
EOCHN T-3	-6.799988	-3.014496	-0.875359	2.942032	39.1913	-1.947826	1.773926	11.64638	-7.704346	3.692764	8.759422	-4.486958	3.678268	4.220291	4.843475	0.420288	7.736221	0.866665	16.93622	6.620285	-1.649275	2.982609	0.191307	4.03479	-5.130432	3.153618	1.640579
EOCHN T-4	-2.266663	-1.715942	-2.417397	4.084061	33.65218	-1.069565	1.31015	12.72754	-8.171005	6.211594	10.30725	-3.646378	5.907242	6.979721	6.423187	0.278259	8.710144	-0.411594	20.69275	7.150726	-0.049275	2.944927	0.527542	5.878265	-4.695652	4.208702	0.791306
EOCHN T-5	-3.605804	-2.118851	-0.495651	5.74202	42.1942	-2.214493	3.684067	11.41449	-6.313049	6.669571	10.8174	-6.081154	5.715942	6.426086	1.10144	1.515945	9.133331	-0.31884	15.43478	7.515945	-11.82029	4.744926	1.284058	4.513046	-3.2029	4.127533	2.011581
MHORD T-1	-0.959427	-0.547821	-1.472458	7.026077	41.03478	-2.617391	4.768127	11.28406	-4.266663	9.023193	10.46377	-3.649277	8.814484	8.481171	5.791306	4.591293	9.915939	-1.469566	24.28116	10.24928	-1.04058	10.10145	5.394203	-5.831894	1.272465	7.90435	-2.069565
MHORD T-2	-3.553619	-0.718842	-2.246376	6.623199	41.06667	-1.249275	5.365219	17.53912	-11.05217	7.846375	19.13623	5.263767	5.600006	5.695648	5.872452	2.086945	9.663757	-0.788406	21.38841	7.944931	-6.628985	8.742031	4.834785	-5.808701	-0.45507	7.17971	-3.330429
MHORD T-3	-5.417389	-2.469574	-0.988403	6.915955	45.90145	-2.185507	3.327545	12.47247	-6.623184	9.617401	10.24348	-5.495655	10.16812	10.46668	2.373901	1.855072	10.62608	0.02319	16.45508	6.124634	-4.466667	6.043476	2.492752	-2.147827	-2.84058	4.368111	-4.388397
MHORD T-4	-4.144913	-1.423187	-1.695648	5.028976	39.18261	-3.408696	2.785507	12.88986	-5.837677	7.286957	9.376816	-4.837681	7.130432	7.249283	6.643478	3.571014	10	-1.072464	21.51305	6.773911	-0.452174	6.97971	3.718842	-4.205795	-0.855072	5.982605	-4.286957
MHORD T-5	-5.72464	-2.794189	-1.49855	5.962311	42.03188	-2.51884	1.008682	13.06087	-6.095657	9.226089	16.4087	0.933334	10.30145	8.675354	4.727539	0.524628	8.927536	-0.118839	19.92464	9.53334	-0.284058	6.794205	2.73333	0.857956	0.579712	5.892754	0.353638
FGSD T-1	2.489868	-1.350723	-2.17971	5.27536	19.58841	-0.028986	2.727524	14.31593	-9.171021	7.211594	5.26667	-4.620289	3.072464	4.194214	3.878265	1.089859	7.759415	-0.843479	8.202896	-2.646378	0	-0.284058	-0.710144	4.49855	-3.30145	2.217392	1.426086
FGSD T-2	8.22319	0.533325	-5.289854	10.20869	19.86377	-0.168116	8.005798	27.71304	-17.91014	9.657959	4.915943	-6.29855	6.05217	6.043472	6.475357	2.373917	10.3855	-3.113045	11.44058	0.657974	0.049275	-1.246378	-1.246376	7.037674	-1.744928	4.368114	1.469566
FGSD T-3	7.597092	0.202911	-4.040581	6.220291	16.44348	0	3.05217	20.40869	-17.28696	11.09856	6.402897	-4.02029	6.165222	6.298553	7.837692	0.94783	8.744934	-5.655073	15.46956	5.695648	0.121739	-5.281158	-6.208694	3.773911	-3.707246	2.985508	-0.298546
FGSD T-4	1.043472	-1.159424	-2.301449	7.449265	27.06377	-0.005797	4.353622	21.85507	-14.05507	10.47826	7.788406	-4.063768	7.539124	8.65506	5.771011	2.185516	11.78551	-4.089855	17.13913	2.469574	-0.176812	0.336231	-0.562321	6.423187	-4.382608	4.098549	2.13913
FGSD T-5	12.77391	1.289856	-5.997101	7.002899	15.91304	-0.026087	5.973923	28.44058	-20.0029	7.811584	5.101448	-3.171015	5.066666	5.292755	6.686951	0.89566	8.87825	-1.411593	2.768112	-5.301453	0	-0.344927	-0.408695	7.13913	-1.026087	5.214493	0.608696
MHOR T-1	-0.840591	-1.289856	-2.397102	10.90434	29.31305	-0.107246	4.96521	20.66087	-10.86087	9.179718	4.333336	-7.997101	14.93333	15.6348	14.26666	2.411591	8.031876	-0.698551	20.07246	5.092758	0	2.228985	0.15942	4.571014	0.594203	4.489857	2.718842
MHOR T-2	-0.915939	-1.515945	-3.63768	9.060867	30.14493	-0.646377	4.452179	18.80579	-10.50723	7.544922	5.872467	-7.002899	6.991302	9.678268	6.976807	1.315948	9.730438	0.573914	11.43768	-2.353622	-0.017391	1.33913	0.579708	2.092743	-4.321739	3.747829	1.246376
MHOR T-3	-1.605804	-1.623184	-2.310146	9.597107	27.77681	0	5.121735	19.9942	-7.617386	7.875366	5.414497	-6.713043	7.791306	8.631882	5.153625	1.376816	9.692749	-3.608695	15.53912	1.208694	0	0.698551	0.121738	3.113037	-1.133333	4.072464	2.165222
MHOR T-4	3.820282	-1.365219	-4.646376	10.81448	20.56522	0	7.44928	30.65797	-20.27536	9.289856	5.086956	-6.585508	8.66357	8.13913	6.901443	1.771011	10.32465	-2.991303	13.29855	0.440567	0	0.939129	1	3.924637	-0.776812	4.081158	0.953621
MHOR T-5	-0.3797	-2.640579	-1.840576	10.62029	29.35943	-0.428986	5.107254	23.90724	-14.24059	11.1768	7.556519	-6.675362	11.6377	12.28986	6.211594	1.092758	10.68117	0.828985	15.0145	1.953629	0	1.515942	0.962322	6.539124	-2.02029	4.33913	2.075363
CMT T-1	-4.521744	-4.944931	-3.191307	6.513046	24.0029	-0.005797	4.307236	26.82318	-19.56232	10.22029	6.052174	-4.449276	3.304337	4.823181	5.562317	0.159424	9.684067	0.121738	9.852173	-0.950714	-0.002899	1.944927	0.539131	12.12175	-2.142029	6.008694	6.527534
CMT T-2	-10.46086	-5.794205	-0.953625	7.991318	27.66957	0	5.417404	22.16522	-13.62898	9.828979	7.973911	-5.18261	4.797104	6.063766	7.121735	1.107239	11.15073	-1.513043	16.69565	3.521744	0	2.724638	-0.643478	12.35942	-1.950724	5.182606	5.069565
CMT T-3	-11.40581	-6.156525	-0.556522	4.67247	35.46377	-0.072464	3.655075	17.31593	-10.41739	8.046371	8.008694	-5.333332	7.197113	8.240585	7.266663	1.527542	9.869568	-0.608696	17.11014	7.081161	-0.130435	2.2029	-0.579712	11.05217	-3.504349	5.953621	5.127533
CMT T-4	-13.50145	-7.562317	-1.121742	7.168106	24.95363	0	4.86377	26.1826	-14.75943	8.513046	9.350727	-5.136232	7.681152	9.008698	8.359421	2.069565	10.48985	-0.97681	14.72464	0.750732	0	2.298552	-0.315941	15.35652	-1.91884	5.904346	7.49855
CMT T-5	-12.07536	-7.078247	-0.237682	7.202896	33.55072	-0.034783	3.171021	20.03188	-11.75072	7.139145	11.72753	-4.907249	3.020294	3.188416	0.220291	0.092758	10.1768	1.05797	4.718842	0.901443	-6.028986	0.973915	-1.423187	10.48985	-1.373913	6.649277	7.301453

Roasting Temperature Test

	R28	G28	B28	R29	G29	B29	R30	G30	B30	R31	G31	B31	R32	G32	B32	R33	G33	B33	R34	G34	B34	R35	G35	B35	R36	G36	B36
NR T-1	8.481155	0.484055	-6.257973	3.495651	57.17392	0.918841	4.933334	25.84638	-9.428986	10.29274	8.188408	-3.718842	9.504349	9.971008	11.40579	-0.779709	0.478271	3.556522	26.25797	7.31015	0.005797	1.078259	-2.434784	16.13913	-3.533333	4.90435	6.36232
NR T-2	3.124634	0.660873	-5.234779	2.431885	56.8	3.994202	3.402893	25.15651	-3.052185	8.550735	8.475361	-4.831886	4.68985	5.571014	9.150726	0.269562	0.646378	0.136232	12.9855	2.084061	-1.684058	1.347828	-2.915947	11.81738	-4.834782	5.950729	7.347824
NR T-3	11.51593	2.617386	-7.394203	6.41449	51.02029	-1.75942	6.568115	27.22319	-7.063766	12.35652	12.85217	0.098551	10.38841	11.94782	9.866669	2.411591	2.046387	0.046377	16.95361	3.704346	-0.005797	2.171017	-1.423195	16.2	-5.171015	6.04348	6.388412
NR T-4	11.48695	3.269562	-5.481163	2.269562	51.23478	2.739131	4.481155	25.64638	-3.794205	11.11014	9.278259	-3.260868	9.489853	11.92174	3.788406	2.127533	0.881165	0.098551	15.85797	4.301453	-0.017391	2.750725	-1.324631	12.44928	-5.823189	5.626083	5.173904
NR T-5	8.684052	0.901443	-7.371014	0.956528	48.22898	1.150723	5.020294	26.93333	-9.457977	10.96811	11.87536	-2.481159	9.031876	10.15653	6.991302	1.428986	1.750717	-0.110145	13.35942	8.171021	-0.228985	0.742031	-2.391304	15.58839	-4.652172	3.73333	4.997101
180C T-1	16.68985	9.072464	-11.37102	4.915955	53.09275	1.336232	4.881165	20.66086	-2.820297	10.51595	11.31304	0.776812	13.16231	11.9913	13.0174	0.040573	3.350723	0	20.84927	17.88117	-0.008696	2.927536	0.127533	11.50435	-1.707247	6.8116	4.05217
180C T-2	15.38261	7.765213	-10.82029	3.869568	55.86377	2.226087	3.617401	19.49277	-1.411591	8.857971	7.408695	-4.826084	10.33043	10.33044	6.997101	-0.243484	1.527542	-0.104348	18.70146	14.66376	-0.046377	1.034782	-2.582611	11.40289	-3.730434	4.478256	4.205811
180C T-3	16.47246	10.48985	-12.88116	2.962311	50.9942	2.284059	3.817383	19.62898	-5.168121	5.536224	8.255074	-3.594204	8.515945	8.385513	12.34782	-2.023178	0.939133	0.008696	20.13623	12.2029	-0.014493	0.602901	0.886955	12.55942	-2.614494	5.121735	4.956528
180C T-4	18.69276	12.77683	-17.86956	8.797104	54.32754	0.686956	1.713043	18.51305	-4.118835	9.713043	12.87536	-5.417389	12.57391	13.07536	10.14491	1.1884	2.46376	-0.208696	19.16812	11.93044	-0.356522	-0.623188	-4.875366	9.03479	-3.52174	2.486961	2.559418
180C T-5	17.65508	13.75652	-16.29565	9.063766	55.11594	0.971015	3.199997	21.2058	-5.649277	10.25507	11.82319	-4.118843	16.42319	14.35652	14.23479	2.707245	2.440582	-0.173913	23.35652	10.73914	0	1.228985	-2.837685	10.94493	-2.231882	4.408699	6.669556
200C T-1	16.72174	0.489853	-13.67246	2.620285	58.05507	2.243479	6.179703	25.23477	-7.623184	11.97682	8.944927	-2.855072	10.83768	15.56522	9.892761	4.318832	1.324646	0.028986	7.869568	-1.046387	-0.04058	4.849274	-0.17971	1.339142	-0.275364	4.91304	-0.069565
200C T-2	17.91306	0.228989	-15.30725	4.043472	55.24638	-2.681159	4.50145	27.72754	-10.23189	12.24059	5.310143	-4.142029	11.51885	15.95361	7.281158	2.550735	-0.194199	0.252174	6.36232	-1.028976	0	6.08116	1.257973	3.846375	0.695652	5.834778	1.701447
200C T-3	20.0058	8.110153	-13.53043	6.866669	54.64638	-4.231884	7.504349	27.371	-4.098557	10.71014	5.82029	-5.052174	13.23769	17.31593	8.478271	8.13913	-0.217392	-0.701449	9.652176	-2.29274	-0.495652	5.550728	-1.107246	3.423187	1.869564	4.771011	1.295654
200C T-5	26.44637	2.162323	-13.08406	9.921738	54.33044	-3.826087	5.895645	27.34203	-5.617401	13.10146	6.347824	-3.959421	12.93912	14.58261	12.9884	8.36232	2.002899	-1.643478	9.51593	-7.118835	0	5.171013	0.13623	1.199997	1.171015	4.063766	0.675354
200C T-4	22.41159	5.965225	-13.25797	4.226089	56.0145	-1.866667	5.237686	27.82318	-7.394196	12.62608	2.759418	-9.284058	11.0058	10.29565	4.759415	9.26088	0.257965	-0.550725	9.994202	-4.31015	-0.208695	2.753622	-2.310146	2.663757	2.092754	6.173912	1.87825
210C T-1	0.162323	-0.834778	-1.237679	4.008698	58.82899	-5.304348	4.069565	20.70725	-9.68985	8.095642	3.571014	-5.353626	6.571014	7.686966	0.736237	1.25798	1.205795	-0.704348	6.652176	-2.823181	-5.788405	2.730434	-0.721741	1.318848	-0.136232	4.379707	2.544922
210C T-2	-0.907242	-2.53334	-0.620285	0.649277	55.6116	-1.933334	0.252182	15.10724	-7.600006	7.321732	5.005798	-4.110146	5.463776	7.94783	7.692764	-0.36232	-0.718842	0.063768	15.57391	4.527542	-4.910145	3.333332	-0.727539	0.811584	-0.275362	4.063766	4.576813
210C T-3	3.901443	-1.968124	-3.385509	8.86377	48.51305	-5.701448	7.32753	31.44928	-14.53333	11.08406	3.197102	-3.495651	7.371017	8.246384	7.185501	0.915955	2.03479	-0.475362	8.023178	4.489853	-1.397101	4.611595	3.15942	6.255081	1.144928	4.849277	6.217392
210C T-4	2.072464	-1.031891	-0.200001	4.617386	56.4029	-4.313044	5.495651	26.9884	-11.15073	11.40289	5.315941	-3.034782	7.660873	10.22609	2.660858	-0.359421	-1.295654	-0.75942	19.11014	12.0174	-0.771014	4.420288	1.91304	3.805801	-1.272465	2.733337	2.228973
210C T-5	3.481155	-0.759415	-2.692753	4.069565	54.48116	-3.979711	5.081161	26.15653	-9.681168	10.87827	4.147827	-3.257973	9.1884	9.884048	7.782623	1.307236	1.075363	0.110145	21.2	8.428986	-0.443478	6.226089	1.933334	4.524628	-0.463768	2.510139	2.486954
220C T-1	6.417389	5.773911	-3.327534	1.44928	53.96232	3.089855	5.376816	23.72754	-8.556519	9.982605	5.199997	-6.365215	6.55072	7.805786	7.01738	2.034775	-0.084045	0.107246	20.02609	8.101456	-2.576812	9.721741	5.852173	-8.01738	0.217392	3.507248	-5.600006
220C T-2	7.008698	6.791306	-4.834785	4.443481	55.72174	-3.46087	5.197098	22.98552	-7.718826	8.330429	4.028984	-6.663765	11.66956	11.90724	9.379715	9.182602	2.040573	-0.249275	19.32463	6.104355	-0.692754	7.66087	3.959419	-9.266663	2.423187	5.426086	-2.591293
220C T-3	5.510147	8.701447	-5.492752	4.142029	57.7971	-2.136231	3.701447	22.07826	-7.13623	6.782608	4.727531	-6.962318	12.90726	12.72754	11.64058	11.91884	0.791306	-0.849275	13.26956	2.228973	-3.463768	8.026085	3.402901	-5.727539	2.515942	4.976807	-0.544922
220C T-4	4.602905	7.017395	-4.544926	4.576813	55.63188	-3.971016	5.144928	23.33333	-8.092758	6.249283	5.052177	-7.347824	11.64348	8.031876	12.6087	12.69856	2.628983	0	18.41451	3.199997	-0.202899	5.579708	0.727539	-1.77681	4.29855	5.026085	1.834778
220C T-5	4.202896	9.176804	-8.86087	4.002899	54.78551	-2.649275	3.414505	20.68117	-6.223175	6.321747	7.466667	-5.147827	12.16232	11.75653	13.40579	12.62318	2.217392	-0.017391	14.55072	3.278275	-0.8	7.571014	6.301445	-3.060867	5.907246	6.918846	0.240585
230C T-1	5.072464	-1.03479	-7.45507	6.368118	48.02319	-3.347826	5.695648	28.91306	-11.17392	12.49855	6.715942	-6.02029	7.559418	8.428986	6.32753	-0.191299	1.142029	-0.257971	22.10436	13.17392	-0.034783	9.692757	7.460869	-2.530441	3.13913	7.684059	-8.536224
230C T-2	2.324646	-0.510147	-5.113045	1.391312	56.44638	1.11884	2.744919	19.59419	-6.028992	11.14783	8.269562	-7.36232	6.982605	6.556519	5.107239	1.405792	1.768112	-0.278261	13.89276	2.298553	-0.17971	8.626085	6.150723	-8.504349	1.182608	8.597107	-4.272461
230C T-3	1.965225	-1.750717	-3.086952	3.50145	53.26377	0.304348	5.379715	29.05797	-8.939133	12.0145	6.556522	-5.510143	5.014496	5.750717	5.855072	-0.272461	2.246368	1.286957	14.47536	-0.005783	-0.055072	9.330433	6.481163	-7.58551	1.704348	9.45797	-10.33043
230C T-4	1.373901	0.028992	-5.704346	4.620285	57.74493	2.518841	5.927536	23.48117	-3.243469	10.75653	9.356522	-8.660866	8.544922	8.13913	9.342026	-0.075363	0.927536	0.773913	16.1797	3.550735	-3.313044	7.556522	4.823189	-7.547821	2.573914	6.704346	-6.857971
230C T-5	5.266678	-0.113052	-7.118839	3.49855	56.61739	0.849276	5.107239	26.77101	-7.918839	12.10725	7.782608	-4.373913	8.930435	9.605804	7.646378	-0.855072	0.753616	-0.249275	21.84059	10.11594	0.066667	9.866665	5.82029	-3.576813	4.762318	9.350723	-10.28986
240C T-1	0.315948	4.10434	-6.994209	3.286957	54.77972	1.811594	3.675354	21.30725	-5.014496	7.205795	6.727539	-10.58841	14.09566	11.62029	11.34493	8.075363	1.582611	-0.092754	15.86957	3.753616	-0.257971	4.246376	1.631882	2.614502	1.289856	5.643478	-8.292755
240C T-2	-7.814499	-3.426086	-2.753624	2.484055	58.90724	4.982609	4.797089	21.55652	-5.388412	11.71304	11.97971	-5.892754	7.524643	7.820297	10.51885	-0.689865	0.049271	0.44058	11.36522	-1.098557	-0.011594	3.950722	0.539131	6.005798	4.226088	8.713043	-4.284058
240C T-3	2.040588	-0.171021	-5.226086	6.840591	52.91304	-3.602899	5.376801	29.04349	-8.94783	14.85797	8.286957	-6.037682	8.440582	10.34493	6.266663	-0.118851	0.834778	-0.133333	19.08986	8.31015	0.037681	4	1.608696	1.800003	1.672463	6.347828	-3.698563
240C T-4	-1.6203	0.744934	-5.904343	4.936234	54.92754	3.773912	3.020294	20.48987	-7.605789	13.43478	18.41159	-0.205799	6.965225	7.553619	7.997101	-1.252167	0.846375	0.837681	14.50145	1.600006	-2.292754	6.168114	-0.475365	0.89856	1.524635	5.562317	-5.556519
240C T-5	0.918839	4.046371	-6.840584	10.26666	57.41449	3.915941	4.39711	18.33623	-3.339127	12.97971	10.92754	-7.744926	13.64928	13.50145	9.730423	12.89275	4.544922	-3.06087	12.72174	-1.623184	-2.875362	2.675362	-0.599998	6.113037	-0.017391	3.73333	-4.075363

Roasting Time Test

	R28	G28	B28	R29	G29	B29	R30	G30	B30	R31	G31	B31	R32	G32	B32	R33	G33	B33	R34	G34	B34	R35	G35	B35	R36	G36	B36
1min Roast T-1	3.368118	0.130432	-6.675362	0.768112	41.6058	0.388405	4.313049	20.64058	-10.7971	8.36232	6.008698	-3.715942	5.286957	5.553635	4.582596	-0.495651	1.171021	-0.782609	8.255066	-6.762314	-0.005797	1.040581	1.171021	9.915939	-4.353624	5.286957	4.582611
1min Roast T-2	7.997101	1.930435	-6.353622	0.979706	42.9971	1.115942	5.257965	23.06667	-10.85217	7.266663	3.695652	-3.481161	3.243469	4.336227	6.72464	0.411591	2.698547	-0.692754	6.486954	-5.721725	-0.002899	-0.484055	-0.417389	12.31303	-4.191305	4.055069	5.89566
1min Roast T-3	3.759415	-0.023178	-5.153625	0.901443	43.92754	-1.565217	3.817383	23.87535	-10.829	8.698563	6.304352	-2.191303	4.289856	1.681168	7.63768	-1.098541	1.446381	-0.144927	5.907242	-7.292755	-0.127536	0.228985	0.402901	11.66376	-6.423191	3.660866	5.886948
1min Roast T-4	5.110138	1.481155	-6.788406	-0.011597	43.67826	1.113043	4.466675	21.04349	-9.359421	8.582596	5.701447	-4.017391	7.771027	2.559418	6.002899	0.565231	0.08696	0.321739	7.194199	-3.530426	-0.043478	2.927536	-0.420288	11.6087	-5.713043	5.284058	3.286957
1min Roast T-5	5.110153	-0.081161	-5.875362	0.672455	46.52753	-2.046376	4.518845	21.79131	-10.94493	9.713043	5.289852	-2.376812	6.052185	3.165222	7.185501	1.142029	0.788406	0	6.171021	-5.075363	0	2.069565	0.510147	11.14203	-4.255072	4.478256	3.544922
5min Roast T-1	10.92754	1.478256	-7.431885	4.884064	46.32464	-3.373913	4.492752	25.60579	-8.886948	10.66667	5.168118	-5.452175	11.02028	9.628983	10.2029	-0.431885	0.055069	0.231884	12.78841	0.104355	0.052174	1.046377	0.104347	9.820282	0.246376	5.805794	4.049271
5min Roast T-2	11.96233	1.521744	-7.089855	2.214493	49.91595	-0.875362	5.773911	25.32173	-7.571014	11.92464	7.26667	-7.18261	12.72173	7.669571	11.46376	2.437683	0.602905	-0.031884	11.69855	0.171005	-0.272464	0.02029	0.68116	6.252167	-3.182609	4.973911	4.701447
5min Roast T-3	8.736237	0.623199	-8.423187	3.034775	50.13334	0.385508	4.747833	25.03188	-8.371017	10.24927	7.956524	-5.443481	8.510147	8.968109	12.6145	1.826096	0.918839	-0.17971	10.1797	-1.049271	-0.165217	3.910145	0.234787	7.49855	-1.371014	4	3.231888
5min Roast T-4	8.153625	-0.901443	-7.939133	0.573914	51.17971	2.391304	3.556519	26.16522	-7.698547	9.318832	6.81739	-5.539127	10.22609	9.298553	8.591293	0.321732	1.930435	-0.501449	6.133331	-1.753616	0.173913	1.092754	-0.327538	8.973907	-4.057972	4.620285	4.191299
5min Roast T-5	11.15942	2.350739	-8.086956	2.205811	53.63189	1.133333	4.553635	25.48695	-8.365204	9.133331	8.623184	-5.162319	10.02898	12.73624	10.85797	-1.478256	-0.513046	0.382609	14.97101	1.150711	-0.527536	4.959419	2.066673	8.788406	-1.918842	5.214493	2.553619
10min Roast T-1	4.843475	-0.278259	-3.953629	2.420288	46.63478	-1.11884	3.130432	21.91594	-9.176819	7.582611	5.573914	-5	4.973923	5.565216	2.837677	-0.582611	2.333328	-0.150725	7.24057	-6.782608	-0.066667	3.45507	2.54203	1.25798	-4.272463	4.420296	1.289841
10min Roast T-2	8.3797	0.626083	-7.826088	2.739136	46.18551	-3.910146	4.86087	23.76231	-10.91304	11.04927	5.243481	-3.513042	7.939133	8.91304	6.371017	0.214493	2.040588	-0.515942	12.21159	-1.240585	-0.005797	-2.49855	-2.5942	5.356522	-4.066668	3.898552	0.924637
10min Roast T-3	11.16522	0.994202	-9.063766	5.486954	43.10435	-3.599999	4.060883	21.26086	-8.081146	8.791306	4.791306	-4.440578	6.121735	5.081161	5.50145	0.379715	3.063766	0	13.41739	1.098557	0	2.869568	1.23188	6.226089	-2.727535	4.211594	4.339127
10min Roast T-4	6.304352	0.446381	-6.469566	0.515945	51.37102	2.037682	3.217392	21.57101	-4.559433	8.023178	6.107243	-3.736233	2.411606	1.197098	0.562332	-0.994202	1.460876	0.414493	14.40291	4.94783	0.043478	5.336231	4.159416	4.620285	-1.118841	6.289856	0.521744
10min Roast T-5	6.037674	0.623184	-5.826088	1.910141	50.53623	-2.147826	4.356522	21.68117	-5.889847	8.556519	7.536232	-5.379707	8.315933	8.147827	3.478271	0.402908	3.368103	-0.263768	14.6087	1.307251	-0.046377	3.220291	2.875366	10.34203	-4.127535	3.86377	3.49855
15min Roast T-1	6.417389	5.773911	-3.327534	1.44928	53.96232	3.089855	5.376816	23.72754	-8.556519	9.982605	5.199997	-6.365215	6.55072	7.805786	7.01738	2.034775	-0.084045	0.107246	20.02609	8.101456	-2.576812	9.721741	5.852173	-8.01738	0.217392	3.507248	-5.600006
15min Roast T-2	7.008698	6.791306	-4.834785	4.443481	55.72174	-3.46087	5.197098	22.98552	-7.718826	8.330429	4.028984	-6.663765	11.66956	11.90724	9.379715	9.182602	2.040573	-0.249275	19.32463	6.104355	-0.692754	7.66087	3.959419	-9.266663	2.423187	5.426086	-2.591293
15min Roast T-3	5.510147	8.701447	-5.492752	4.142029	57.7971	-2.136231	3.701447	22.07826	-7.13623	6.782608	4.727531	-6.962318	12.90726	12.72754	11.64058	11.91884	0.791306	-0.849275	13.26956	2.228973	-3.463768	8.026085	3.402901	-5.727539	2.515942	4.976807	-0.544922
15min Roast T-4	4.602905	7.017395	-4.544926	4.576813	55.63188	-3.971016	5.144928	23.33333	-8.092758	6.249283	5.052177	-7.347824	11.64348	8.031876	12.6087	12.69856	2.628983	0	18.41451	3.199997	-0.202899	5.579708	0.727539	-1.77681	4.29855	5.026085	1.834778
15min Roast T-5	4.202896	9.176804	-8.86087	4.002899	54.78551	-2.649275	3.414505	20.68117	-6.223175	6.321747	7.466667	-5.147827	12.16232	11.75653	13.40579	12.62318	2.217392	-0.017391	14.55072	3.278275	-0.8	7.571014	6.301445	-3.060867	5.907246	6.918846	0.240585
20min Roast T-1	5.052185	0.626083	-5.942032	4.721741	49.85797	-3.631884	4.469559	23.24348	-4.611588	10.60001	6.086956	-5.588406	9.68985	10.02319	7.646378	1.455078	1.284058	0.11884	14.51885	2.188416	-0.298551	19.9971	16.22898	-39.15073	5.852173	13.78841	-21.15942
20min Roast T-2	4.756516	0.704361	-4.68116	3.736237	56.43768	2.069567	4.828979	20.46088	-1.008698	8.507248	9.237679	-3.837681	6.617401	6.637695	7.918839	1.744919	3.159409	-0.8	16.9971	4.011597	-1.034783	18.75942	14.33334	-32.15363	11.77102	16.43478	-24.42319
20min Roast T-3	2.24057	-0.533325	-5.866669	3.744919	47.86956	-1.165217	4.49855	24.74492	-5.933334	9.75943	6.040581	-4.446377	2.304352	3.228989	4.753616	1.037689	3.055069	0.014493	18.02319	5.350739	0.023188	11.76522	11.6116	-28.62318	6.597101	15.63188	-21.71883
20min Roast T-4	11.03767	1.530441	-5.107246	6.704346	53.19421	-3.321739	7	26.06377	-7.857971	11.93623	6.918842	-3.182606	5.304352	3.904343	-0.469574	3.101456	3.36232	-0.171015	18.83188	2.379715	0	17.7971	12.0058	-33.35652	9.823189	11.10725	-23.78551
20min Roast T-5	3.918839	-0.260864	-7.904343	3.524628	57.68987	3.52174	5.742035	22.76811	-9.460876	10.23189	10.89565	-1.849274	3.443481	4.298553	11.21739	1.698563	0.547821	0.02029	18.6261	3.971008	0.304348	13.47536	12.73623	-32.66376	6.376812	12.29275	-21.27828
45min Roast T-1	-17.33914	-7.063766	1.959419	2.785507	60.04058	4.414494	3.571014	27.24638	-7.643478	10.42029	12.02319	-5.072464	8.118835	8.005798	1.463776	-1.663773	0.237686	-0.069565	9.466675	-3.304352	-0.278261	13.71884	9.875366	-24.84058	14.8029	17.73624	-30.25217
45min Roast T-2	-18.89854	-7.295654	1.481163	2.281174	63.86087	3.255074	4.626083	27.16522	-6.092758	10.56232	10.16811	-6.971016	6.518845	7.060867	6.382614	-0.663773	-0.144928	0.878261	11.1855	-7.762329	0.031884	3.469566	0.889854	6.695648	1.28116	6.255074	-0.391296
45min Roast T-3	-15.24927	-6.382599	-1.44928	4.678253	62.75942	-0.634783	5.028976	28.34493	-11.50435	15.22029	10.35073	-6.107246	3.281158	4.611603	3.77681	0.408707	0.571014	-0.843478	13.46957	0.295639	-1.565217	5.791306	4.857971	-14.14493	3.837681	11.63478	-14.31884
45min Roast T-4	-15.97971	-4.144928	-1.228981	1.156525	60.99421	1.127536	1.173904	27.02028	-10.03188	7.672455	12.83189	-10.67826	4.730438	4.950714	4.371017	-3.055069	-1.194214	0.655072	17.49277	-4.469574	-5.321738	9.921741	5.936234	-14.50725	15.26956	10.0087	-24.09856
45min Roast T-5	-13.85797	-6.579712	-4.356522	6.620285	64.07246	0.408695	7.092758	27.42609	-8.779709	12.69855	14.91885	-7.011593	9.739136	10.02029	7.423187	1.727524	0.527542	-0.921739	17.23769	2.898544	-0.585507	3.069565	-0.536232	12.19711	0.107246	3.605797	0.176804
3hr Roast T-1	-12.63188	-5.321732	-1.176819	4.168121	61.43479	1.608696	6.513046	20.47536	-7.32753	13.31015	12.49566	-9.113045	8.544922	7.684052	0.072464	1.573914	3.243469	-0.637681	5.852173	0.257965	-0.942029	3.672462	1.255074	6.921738	3.788406	8.324638	-5.898544
3hr Roast T-2	-11.87537	-4.089859	1.776817	5.142029	59.87248	1.620289	5.681168	22.42029	-5.075363	12.55072	12.33624	-7.515942	6.24057	5.730438	4.944916	1.855072	0.431885	0.982609	13.86957	0.171021	0.008696	5.713043	1.771019	8.608688	2.402899	6.463768	-0.231888
3hr Roast T-3	-11.28406	-4.298538	-0.446373	7.002899	59.50435	1.695652	6.197098	22.8232	-7.22319	12.22029	14.68406	-4.504349	7.336227	6.492752	6.875366	1.800003	1.817398	1.011594	12.76233	-0.295654	0.333333	-0.469563	-4.414497	6.666656	0.371017	4.13623	-3.817398
3hr Roast T-4	-11.33333	-4.672455	-2.234787	2.24057	55.64927	2.65797	3.205795	21.95363	-6.634781	10.93044	12.02899	-9.255074	12.04059	11.44058	4.397095	0.840591	2.072464	-0.417391	9.107254	-3.026077	0.162319	0.634781	-0.620293	10.06088	-2.144928	4.631882	1.240585
3hr Roast T-5	[illegible]	[illegible]	-5.852173	7.405792	61.89854	0.428986	6.388412	22.92754	-7.556534	14.05507	12.50435	-5.550724	17.42899	18.29565	[illegible]	[illegible]	[illegible]	-0.46087	14.36812	-2.426086	0.055072	3.434784	0.73333	13.42609	-0.872465	5.066666	3.973907