

CONTROLLO QUALITA' (QC): LINEARITA'

SPHERO™ Calibration Particles

SPHERO™ Calibration Particles are designed for routine calibration of flow cytometers. They are used extensively by many laboratories for QC and long term performance tracking of the flow cytometer. In addition, they are also used for routine alignment and calibration in fluorescence and confocal fluorescence microscopy.

SPHERO™ Rainbow Calibration Particles

- Contains multiple fluorophores incorporated in the same particle to be used in multiple channels of the flow cytometer.
- Available with different fluorescent intensities on the same size particles.
- Stable for several years when stored properly
- Withstand freeze-thaw cycles; diluted particles can be stored frozen for later use.
- Can be sanitized by treating with 70% ethanol or other antibiotic agents.

Particle Type and Surface	Size, μm	Catalog No.	Unit
Rainbow Calibration, 4 peaks, $10^7/\text{mL}$	1.8-2.2	RCP-20-5	5 mL
Rainbow Calibration, 6 peaks, $10^7/\text{mL}$	3.0-3.4	RCP-30-5	5 mL
Rainbow Calibration, 8 peaks, $10^7/\text{mL}$	3.0-3.4	RCP-30-5A	5 mL
Rainbow Calibration, 6 peaks, $10^7/\text{mL}$	3.2 (+/-0.1)	RCP-32-5	5 mL
Rainbow Calibration, 4 peaks, $10^7/\text{mL}$	3.5-4.0	RCP-35-5	5 mL
Rainbow Calibration, 6 peaks, $10^7/\text{mL}$	6.0-6.4	RCP-60-5	5 mL

IN USO

The Rainbow Calibration Particles (RCPs) contain a mixture of several similar size particles with different fluorescence intensities. Every particle contains a mixture of fluorophores that allows excitation at any wavelength from 365 to 650 nm. As a result, most channels in the flow cytometer can be calibrated using the same set of particles.

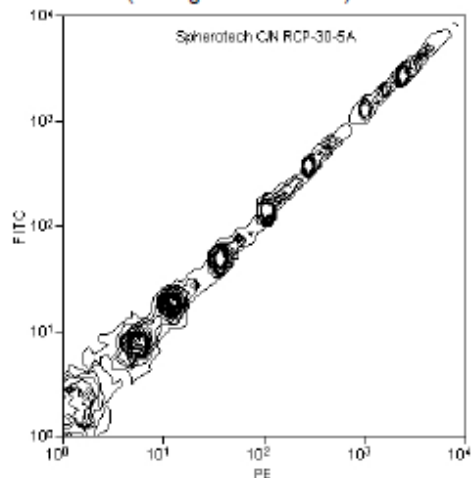
These particles are also used to determine the relative voltage range for each flow cytometry detector. This will determine the dynamic range of specific PMT detectors*.

*Perfetto, S.P., D.Ambrozak, et al. (2006). "Quality assurance for polychromatic flow cytometry." *Nat. Protocols* 1(3): 1522-1530.

The RCPs provide a reliable and reproducible particle mixture for calibrating flow cytometers. They are very stable since the fluorochromes are entrapped within the particles instead of being located on the surface. In addition, Spherotech uses fluorophores that are non-spectral matching to the commonly used fluorophores such as FITC, PE or PE-Cy5. As a result, the RCPs are stable in terms of fluorescence.

The RCPs are convenient and affordable to use for long term performance tracking or routine calibration. They are packaged in a dropper bottle to facilitate the dispensing and storage. The diluted particles can be stored in the freezer for later use if desired to reduce costs. Dilution of a few drops of the particles from the dropper bottle to 1 mL of a diluent will provide adequate particle concentration for flow cytometer calibration. The diluted Rainbow Calibration Particles remain stable following repeated freezing and thawing.

Figure 1 The contour plot below displays the bead distributions of the Rainbow Calibration Particles in FITC vs PE. (Catalog No. RCP-30-5A).



QC: LINEARITA' 8 Peaks Rainbow

(#Lotto RCP-30-5A, Spherotech)

LASER BLUE

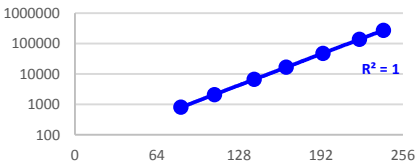
PMT LINEARITY QC RECORD		
RIFERIMENTO		
PEAK #	CH #	MEFL
1	23,98	
2	82,63	792
3	108,85	2079
4	139,92	6588
5	164,94	16471
6	193,56	47497
7	222,14	137049
8	240,75	271647
R ² =		1

PMT LINEARITY QC RECORD		
RIFERIMENTO		
PEAK #	CH #	MEPE
1	11,27	
2	71,08	531
3	99,60	1504
4	131,08	4819
5	156,92	12506
6	185,76	36159
7	215,87	109588
8	238,47	250892
R ² =		1

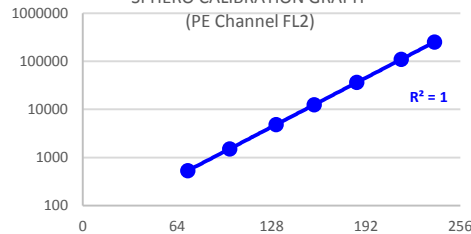
PMT LINEARITY QC RECORD		
RIFERIMENTO		
PEAK #	CH #	MEPTR
1	5,07	
2	67,86	233
3	95,23	669
4	126,55	2179
5	152,86	5929
6	182,39	18219
7	215,27	63944
8	243,62	188785
R ² =		1

PMT LINEARITY QC RECORD		
RIFERIMENTO		
PEAK #	CH #	MECY
1	7,51	
2	62,84	1614
3	87,37	4035
4	117,83	12025
5	144,96	31896
6	175,52	95682
7	211,83	353225
8	242,79	1077421
R ² =		1

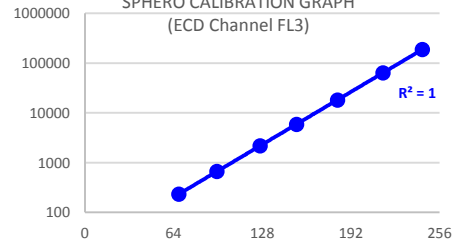
SPHERO CALIBRATION GRAPH
(FITC Channel FL1)



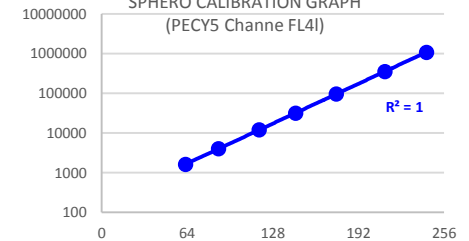
SPHERO CALIBRATION GRAPH
(PE Channel FL2)



SPHERO CALIBRATION GRAPH
(ECD Channel FL3)

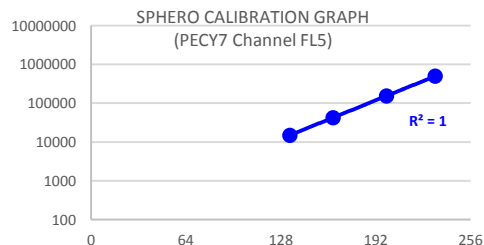


SPHERO CALIBRATION GRAPH
(PECY5 Channe FL4)



PMT LINEARITY QC RECORD

RIFERIMENTO		
PEAK #	CH #	MEPCY7
1		
2		
3		
4		
5	134,08	14916
6	163,25	42336
7	199,32	153840
8	231,96	494263
R ² =		1



QC: LINEARITA' 8 Peaks Rainbow (#Lotto RCP-30-5A, Spherotech)

LASER ROSSO

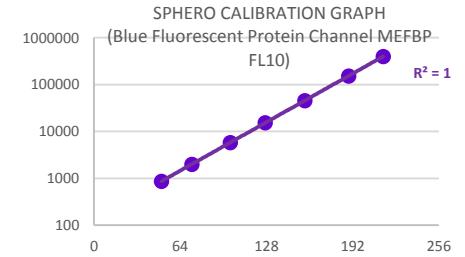
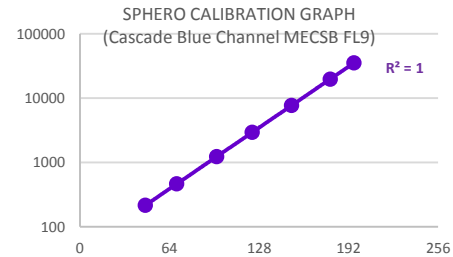
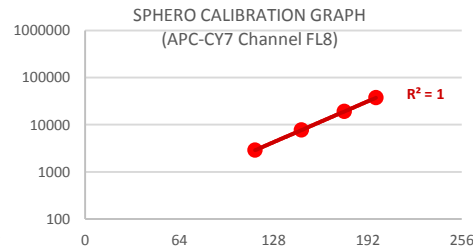
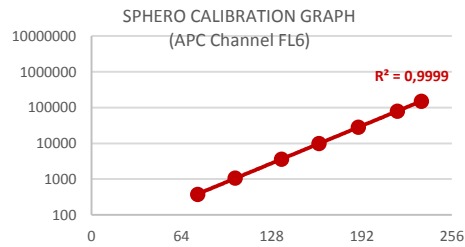
LASER VIOLA

PMT LINEARITY QC RECORD		
RIFERIMENTO		
PEAK #	CH #	MEAP
1	10,33	
2	75,49	373
3	102,13	1079
4	135,05	3633
5	161,59	9896
6	189,60	28189
7	217,33	79831
8	234,36	151008
R ² =		1

PMT LINEARITY QC RECORD		
RIFERIMENTO		
PEAK #	CH #	MEAPCY7
1		
2		
3		
4		
5	115,43	2864
6	146,89	7644
7	176,21	19081
8	197,65	37258
R ² =		1

PMT LINEARITY QC RECORD		
RIFERIMENTO		
PEAK #	CH #	MECSB
1	11,27	
2	46,77	216
3	69,14	464
4	97,70	1232
5	123,12	2940
6	151,17	7669
7	178,92	19812
8	195,96	35474
R ² =		1

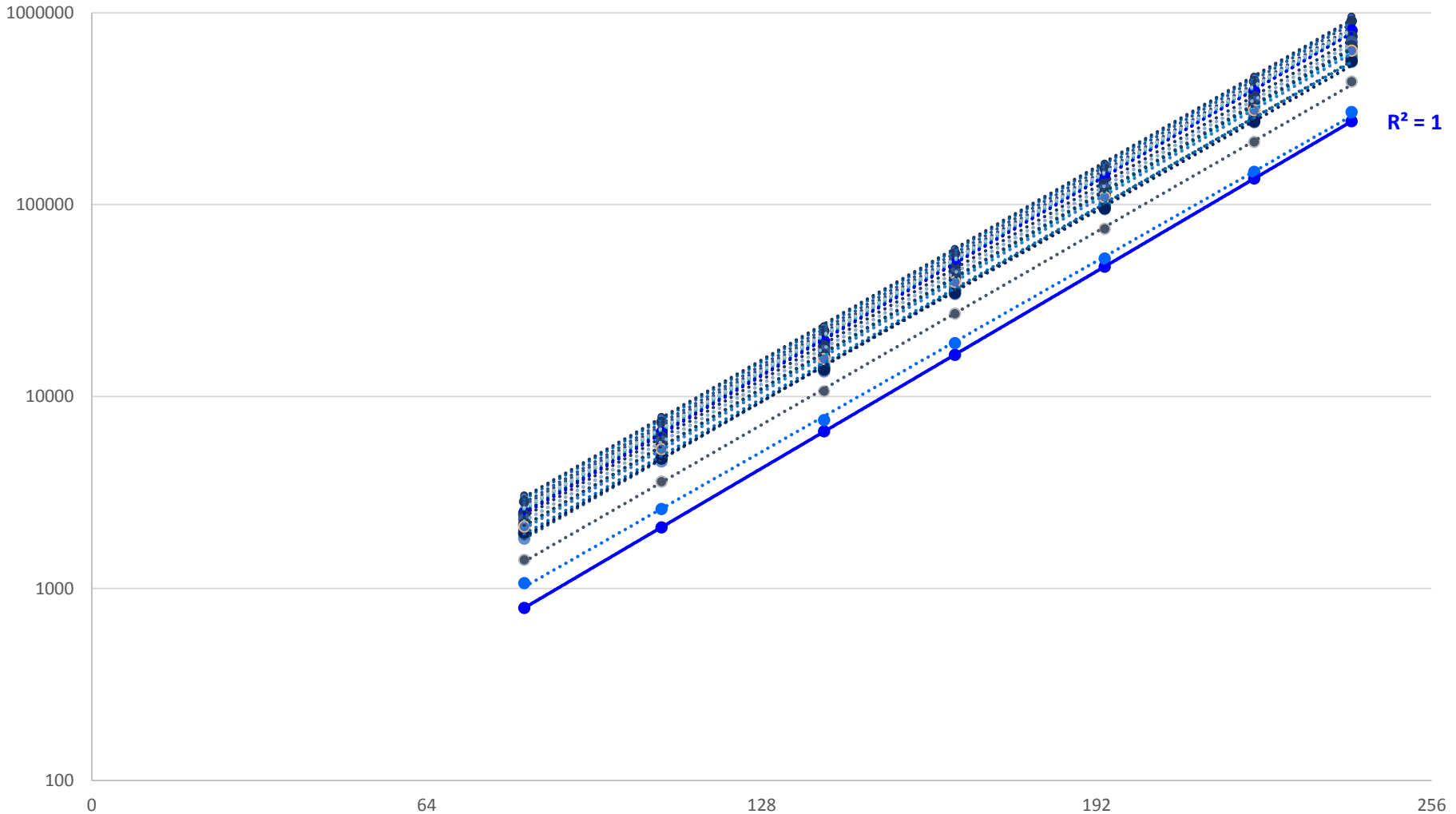
PMT LINEARITY QC RECORD		
RIFERIMENTO		
PEAK #	CH #	MEBFP
1	14,09	
2	50,03	861
3	72,61	1997
4	101,11	5776
5	127,13	15233
6	156,43	45389
7	188,97	152562
8	214,62	396759
R ² =		1



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIMENTO			15/12/17	02/01/18	15/01/18	01/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	03/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/28	30/11/18	17/12/18		
PEAK #	CH #	MEFL																											
1	23.98		350	374	381	375	271	259	274	296	302	298	238	305	253	201	303	297	330	359	405	418	323	312	292	297	302		
2	82.63	792	2776	2976	3053	2976	2282	2158	2531	2628	2666	2832	2467	1067	1853	1409	1962	1817	1913	1910	2009	1952	2412	2292	2130	2168	2097		
3	108.85	2079	7091	7660	7830	7661	5861	5561	6576	6775	6885	7353	6472	2596	4737	3603	4974	4592	4836	4790	4901	4746	6154	5822	5410	5513	5316		
4	139.92	6588	21099	22749	23279	22751	17424	16564	19679	20203	20562	22006	19412	7537	14089	10670	14799	13512	14332	14051	14298	13785	18295	17295	16006	16371	15688		
5	164.94	16471	53353	57622	58781	57628	44137	41956	49806	51110	51966	55625	49259	18982	35717	26994	37396	34244	36300	35505	35943	34636	46314	43666	40423	41460	39549		
6	193.56	47497	147988	160087	163302	160092	122285	116185	138279	141809	144301	154372	136957	52455	98977	74730	103696	94832	100512	98074	99348	95688	128430	120815	111905	114753	109519		
7	222.14	137049	419585	453598	463405	453623	347073	329654	392558	402795	409698	438653	389432	148058	281024	212061	294512	268982	284776	278690	281348	271012	364005	342470	316712	324695	310447		
8	240.75	271647	865287	933712	954737	933878	714710	679469	809229	830176	846272	906435	808568	304028	578729	437195	608448	553632	587797	574308	579588	558476	750005	704349	652085	668225	635138		
R ² =			1	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9997	0,9999	0,9999	0,9999	0,9999	0,9999	0,9998	0,9997	0,9997	0,9999	0,9999	0,9999	0,9999	0,9999		

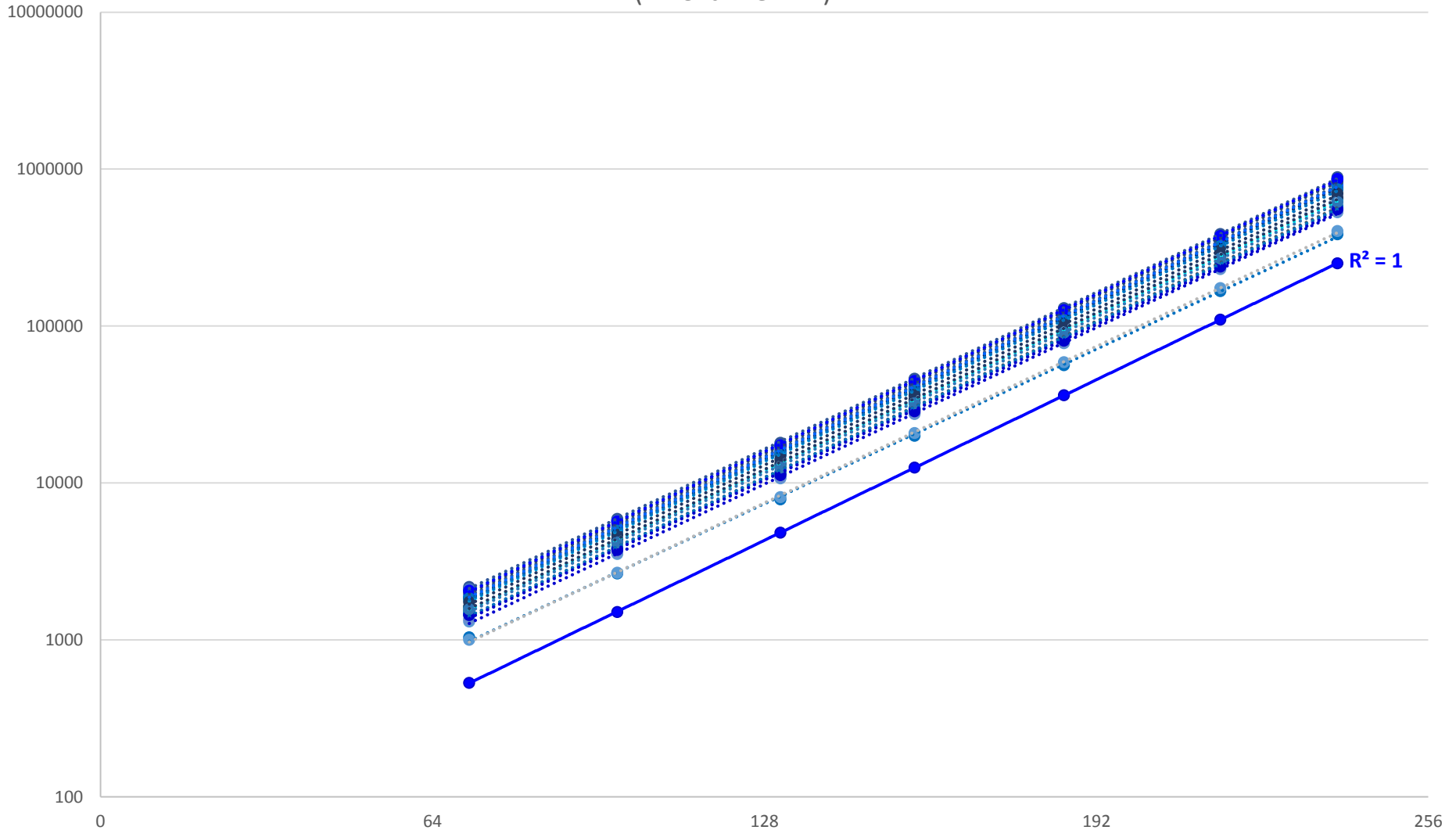
SPHERO CALIBRATION GRAPH
(FITC Channel FL1)



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIMENTO			15/12/17	02/01/18	15/01/18	01/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	03/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/18	30/11/18	17/12/18
PEAK #	CH #	MEPE																									
1	11,27		345	365	375	365	270	263	268	281	281	287	254	361	254	207	338	329	352	361	367	363	346	343	322	323	322
2	71,08	531	1962	2104	2173	2105	1607	1539	1795	1854	1904	2020	2053	1036	1309	999	1464	1353	1442	1448	1491	1438	1838	1742	1612	1630	1563
3	99,60	1504	5313	5713	5902	5714	4390	4170	4919	5070	5189	5536	5680	2649	3520	2677	3893	3618	3827	3800	3866	3742	4961	4651	4283	4360	4165
4	131,08	4819	16134	17338	17973	17341	13330	12663	14938	15437	15826	16878	17355	7856	10704	8111	11771	10857	11505	11396	11631	11188	15031	14107	12895	13222	12528
5	156,92	12506	41476	44573	46064	44576	34216	32546	38422	39709	40695	43455	44649	19975	27490	20782	30123	27831	29532	29253	29666	28591	38605	36150	33109	33996	32113
6	185,76	36159	117091	125816	130094	125823	96856	91984	108651	112232	114877	122746	126251	56312	77637	58743	85105	78544	83415	82428	83731	80593	108914	102182	93573	95934	90551
7	215,87	109588	346996	372875	385361	372897	287305	272778	322087	333097	340523	364076	374388	166622	230178	174286	252525	232944	247349	245319	248466	239340	322529	302591	277123	283861	268615
8	238,47	250892	800398	859392	887117	859655	662290	629722	743205	767637	785544	839897	864912	384075	531318	402797	583915	538357	572379	567320	575204	554656	742928	697702	639861	655472	616634
$R^2 =$			1	0,9999	0,9999	1	0,9999	0,9999	0,9999	1	1	1	1	0,9997	0,9999	0,9999	0,9999	0,9999	0,9999	0,9998	0,9998	0,9998	0,9999	0,9999	0,9999	0,9999	0,9999

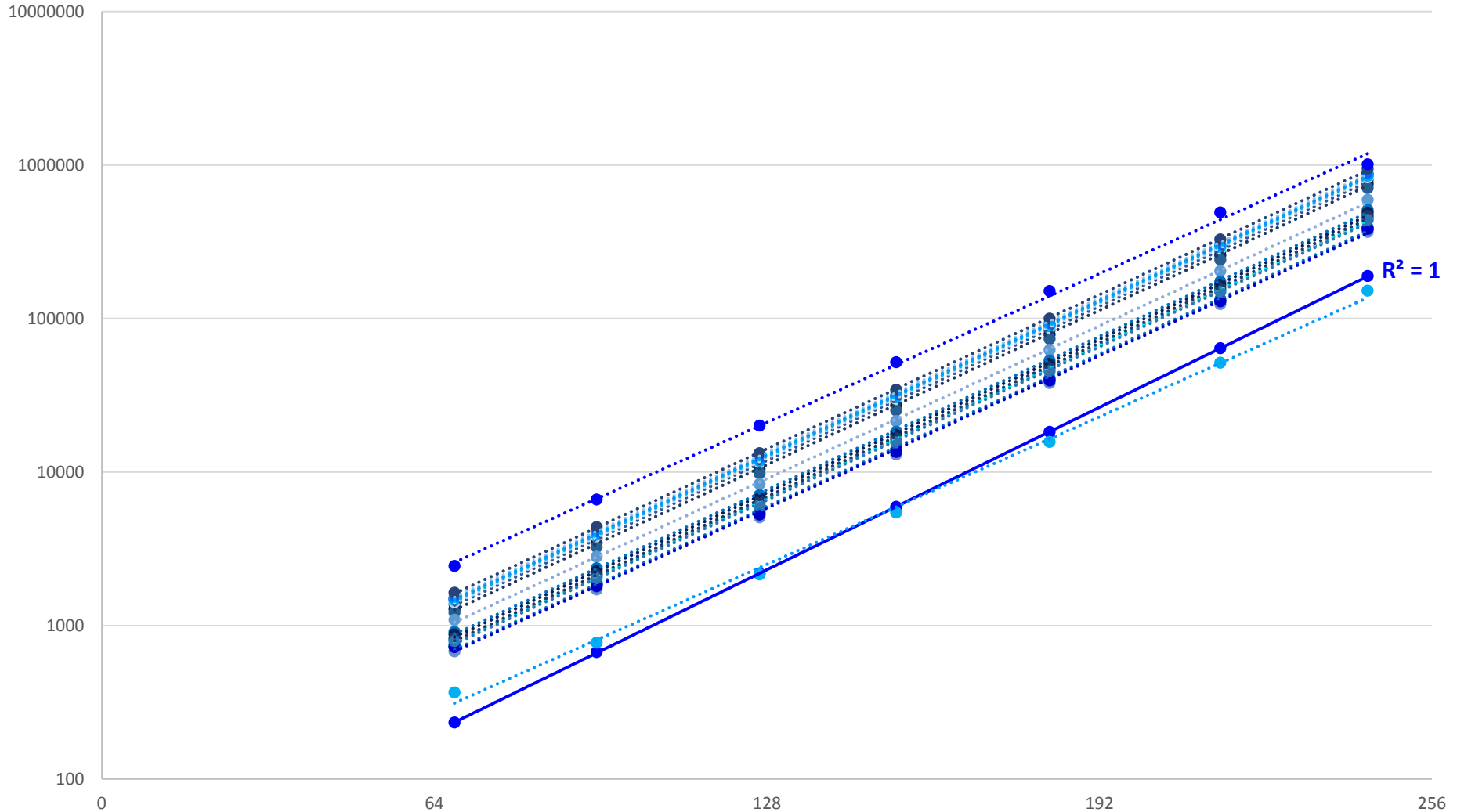
SPERO CALIBRATION GRAPH
(PE Channel FL2)



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIMENTO			15/12/17	02/01/18	15/01/18	01/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	03/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/18	30/11/18	17/12/18
PEAK #	CH #	MEPTR																									
1	5.07		243	247	245	246	197	207	209	218	224	222	248	224	278	226	221	232	232	242	239	232	212	220	204	203	208
2	67.86	233	1373	1491	1541	1491	1279	1216	1418	1458	1498	1631	2438	366	1090	818	731	679	722	724	752	722	907	875	802	825	791
3	95.23	669	3680	3979	4137	3980	3451	3235	3808	3907	4015	4373	6609	774	2804	2101	1843	1712	1808	1794	1849	1801	2363	2261	2064	2137	2034
4	126.55	2179	11136	12048	12504	12050	10426	9766	11528	11815	12132	13274	20063	2146	8342	6239	5467	5063	5345	5284	5422	5271	7080	6762	6168	6393	6044
5	152.86	5929	28828	31251	32366	31255	27036	25224	29828	30626	31382	34332	51861	5444	21487	16068	14076	13029	13770	13611	13933	13530	18306	17442	15899	16524	15559
6	182.39	18219	83956	90811	94013	90813	78768	73551	86856	89213	91388	99798	151009	15725	62387	46813	40899	37971	40131	39567	40578	39422	53245	50817	46453	48200	45340
7	215.27	63944	274753	297346	307709	297361	258297	240992	284685	292496	299084	326857	491302	51437	203941	153050	133378	124309	131427	129661	132683	129352	174090	166532	151964	157820	149024
8	243.62	188785	800062	866977	895001	867210	754454	706125	830329	850601	869159	949602	1011813	151524	593263	449199	389881	366731	386928	381493	390574	383080	509320	489965	448937	466316	438442
R² =			1	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9999	0,9998	1	0,9984	0,998	0,9998	0,9998	0,9998	0,9997	0,9997	0,9996	0,9996	0,9996	0,9999	0,9998	0,9998	0,9998	0,9998

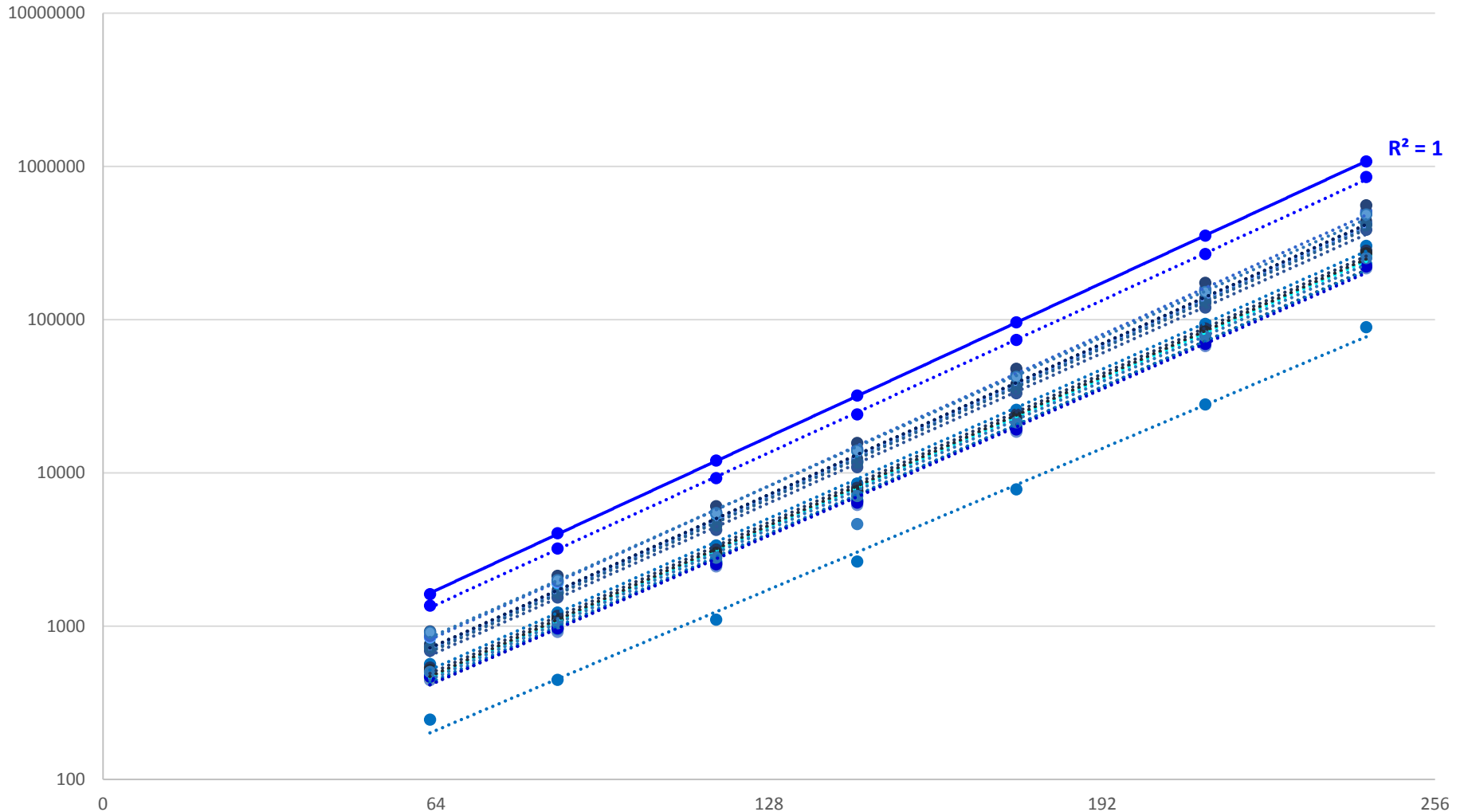
SPHERO CALIBRATION GRAPH
(ECD Channel FL3)



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIME			15/12/17	02/01/18	15/01/18	01/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	03/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/18	30/11/18	17/12/18			
PEAK #	CH #	MECY																												
1	751		185	195	199	195	186	188	186	193	208	195	239	139	276	159	155	161	171	176	183	178	160	162	155	159	158			
2	62.84	1614	689	739	763	739	764	723	841	843	861	921	1360	245	912	509	458	443	463	466	479	467	565	535	503	517	501			
3	87.37	4035	1533	1659	1697	1659	1732	1630	1901	1927	1965	2122	3206	446	1995	1101	964	915	957	950	989	964	1226	1164	1080	1106	1043			
4	117.83	12025	4238	4645	4744	4646	4823	4527	5368	5408	5550	6051	9225	1100	5458	2983	2609	2454	2559	2556	2634	2529	3352	3152	2914	2996	2796			
5	144.96	31896	10879	11897	12231	11899	12442	11633	13859	13987	14342	15677	24054	2638	13937	7559	6606	6180	6480	4633	6615	6388	8525	7968	7332	7614	7049			
6	175.52	95682	33045	36287	37319	36286	37948	35488	42425	42675	43737	47661	73475	7794	42138	22849	19889	18549	19512	19342	19934	19166	25765	24061	22259	23029	21371			
7	211.83	353225	119632	132476	135690	132482	138267	128898	154048	154467	158405	173559	267812	27868	151405	82501	71575	67005	70103	69733	71362	69177	93545	87324	80848	83395	77781			
8	242.79	1077421	385453	427038	437201	427145	444585	414131	493021	494661	509088	556098	850404	89270	484646	265960	229927	216315	225350	224551	228310	222159	302666	281764	263338	270628	251608			
R ² =			1	0,9995	0,9996	0,9995	0,9996	0,9996	0,9997	0,9997	0,9997	0,9998	0,9999	0,9965	0,9994	0,9992	0,9991	0,9988	0,9989	0,9940	0,9988	0,9987	0,9993	0,9992	0,999	0,9991	0,9988			

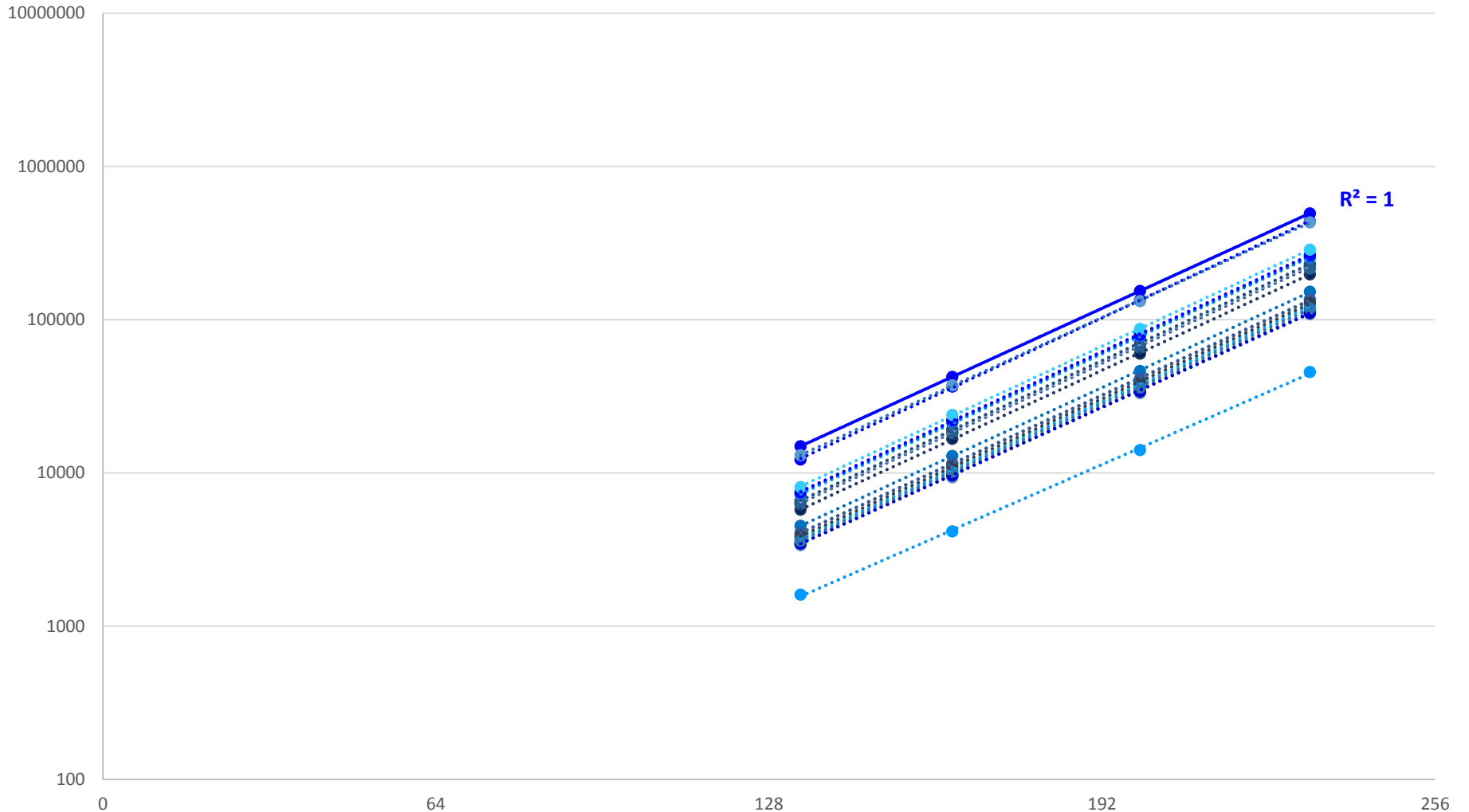
SPHERO CALIBRATION GRAPH
(PECY5 Channe FL4I)



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIME NTO			15/12/17	02/01/18	15/01/18	03/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	03/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/18	30/11/18	17/12/18	
PEAK #	CH #	MEPCY7																										
1			406	428	448	427	410	430	430	438	465	432	537	273	993	316	332	331	349	360	364	363	335	335	326	339	346	
2			698	748	775	748	748	742	791	794	825	848	1126	356	1774	550	513	520	543	542	550	551	601	573	540	547	552	
3			1120	1214	1223	1214	1227	1182	1318	1324	1348	1424	2019	475	2715	860	771	750	772	779	797	796	935	868	813	841	810	
4			2484	2708	2768	2707	2766	2644	3023	3081	3121	3364	4976	809	5747	1817	1561	1535	1554	1560	1576	1566	1974	1830	1671	1718	1641	
5	134,08	14916	5748	6335	6466	6335	6577	6225	7203	7343	7498	8080	12243	1603	13064	4056	3481	3375	3449	3439	3458	3465	4518	4082	3727	3865	3608	
6	163,25	42336	16699	18423	18923	18425	19224	18113	21313	21643	22073	23942	36578	4151	37258	11460	9768	9367	9645	9628	9714	9662	12896	11560	10480	10934	10168	
7	199,32	153840	60026	66718	68390	66723	70051	65462	77459	78247	80101	86948	134119	14099	132164	40868	34568	33189	33869	33882	34198	34075	46199	41120	37178	38816	35995	
8	231,96	494263	197837	220501	225308	220558	230693	215140	253938	253300	264203	286298	438185	45598	431505	133713	112553	108474	110865	110451	110762	110837	151980	135508	122816	127981	118111	
	R² =	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	0,9999	1,0000	1,0000	0,9999	0,9999	0,9996	1,0000	1,0000	1,0000	0,9999	0,9999	0,9999	1,0000	0,9999	1,0000	0,9999	0,9999	0,9999	0,9999	

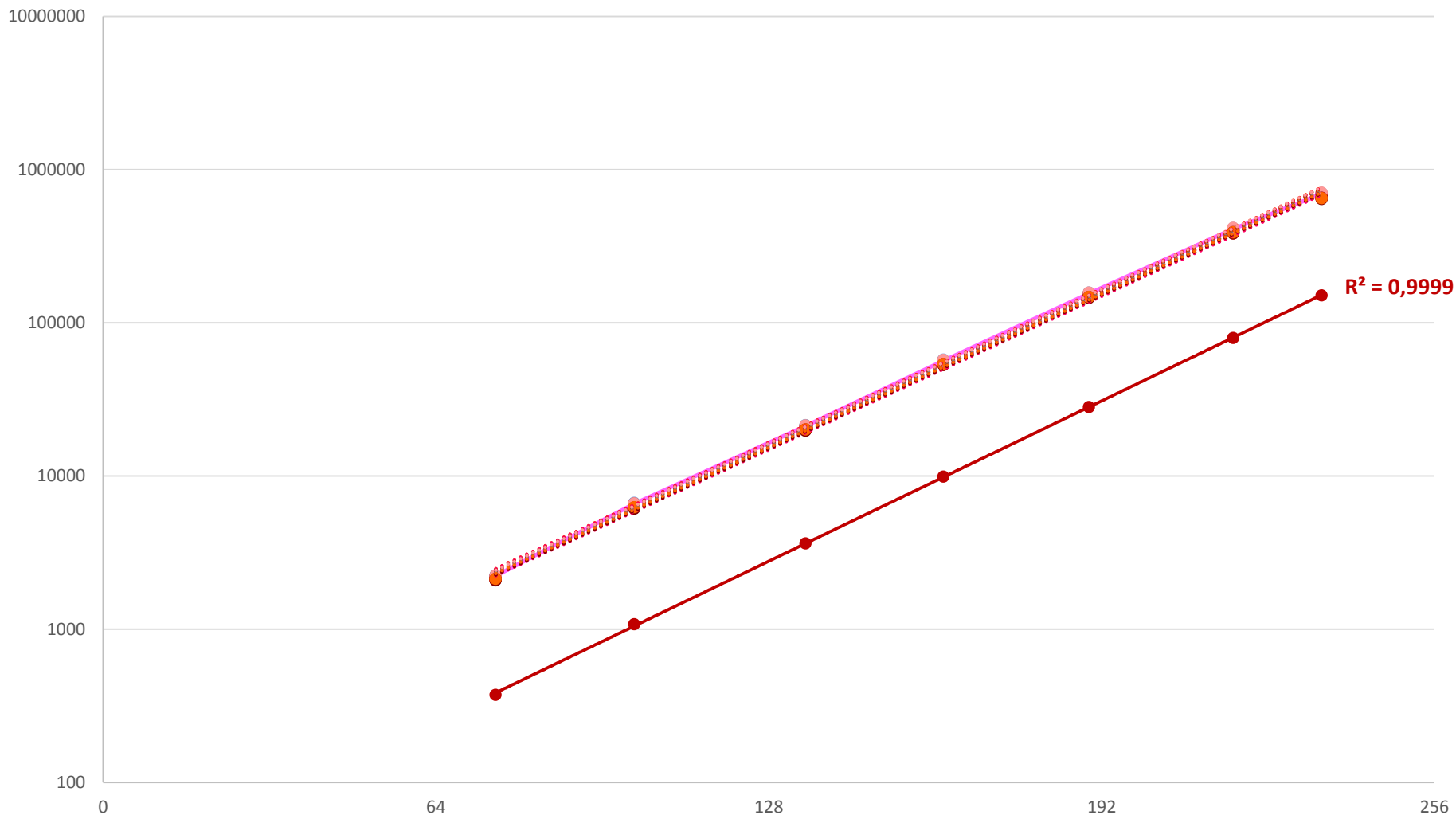
SPHERO CALIBRATION GRAPH
(PECY7 Channel FL5)



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIME			15/12/17	02/01/18	15/01/18	01/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	03/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/18	30/11/18	17/12/18		
PEAK #	CH #	MEAP																											
1	10.33		145	159	152	159	155	218	196	146	149	142	153	144	138	145	137	144	145	145	146	142	137	138	135	137	137		
2	75.49	373	2211	2281	2288	2281	2205	2233	2142	2081	2129	2058	2144	2229	2183	2245	2166	2250	2218	2221	2092	2153	2244	2130	2113	2083	2133		
3	102.13	1079	6523	6726	6763	6727	6472	6447	6197	6115	6292	6061	6310	6562	6474	6635	6440	6672	6592	6571	6174	6368	6633	6227	6192	6121	6253		
4	135.05	3633	20941	21616	21763	21619	20830	20563	19772	19677	20252	19461	20305	21212	20879	21378	20720	21488	21205	21147	19885	20505	21397	20107	19901	19787	20134		
5	161.59	9896	55960	57856	58138	57859	55804	54807	52806	52629	54159	52149	54301	56750	55892	57156	55432	57450	56572	56540	53082	54769	57304	53894	53263	53078	53882		
6	189.60	28189	153574	158813	159674	158818	152997	150014	144574	144125	148587	142683	148703	156317	153472	157116	152631	157692	155671	155405	145782	150092	157721	147888	146696	145605	147858		
7	217.33	79831	404805	418092	421086	418102	402331	394300	380018	379435	392741	375516	390634	412702	405577	414653	403554	415524	409108	409610	383794	394662	417315	390406	386873	383156	389741		
8	234.36	151008	679538	694865	703066	695109	670276	652940	633140	636172	663306	627768	650283	702844	693162	704571	692787	702579	694160	694053	648839	660579	709102	656066	651007	642962	649943		
R ² = 1			0.9993	0.9992	0.9992	0.9992	0.9992	0.9993	0.9993	0.9993	0.9993	0.9992	0.9992	0.9992	0.9994	0.9994	0.9993	0.9994	0.9993	0.9993	0.9993	0.9992	0.9994	0.9993	0.9993	0.9993	0.9993		

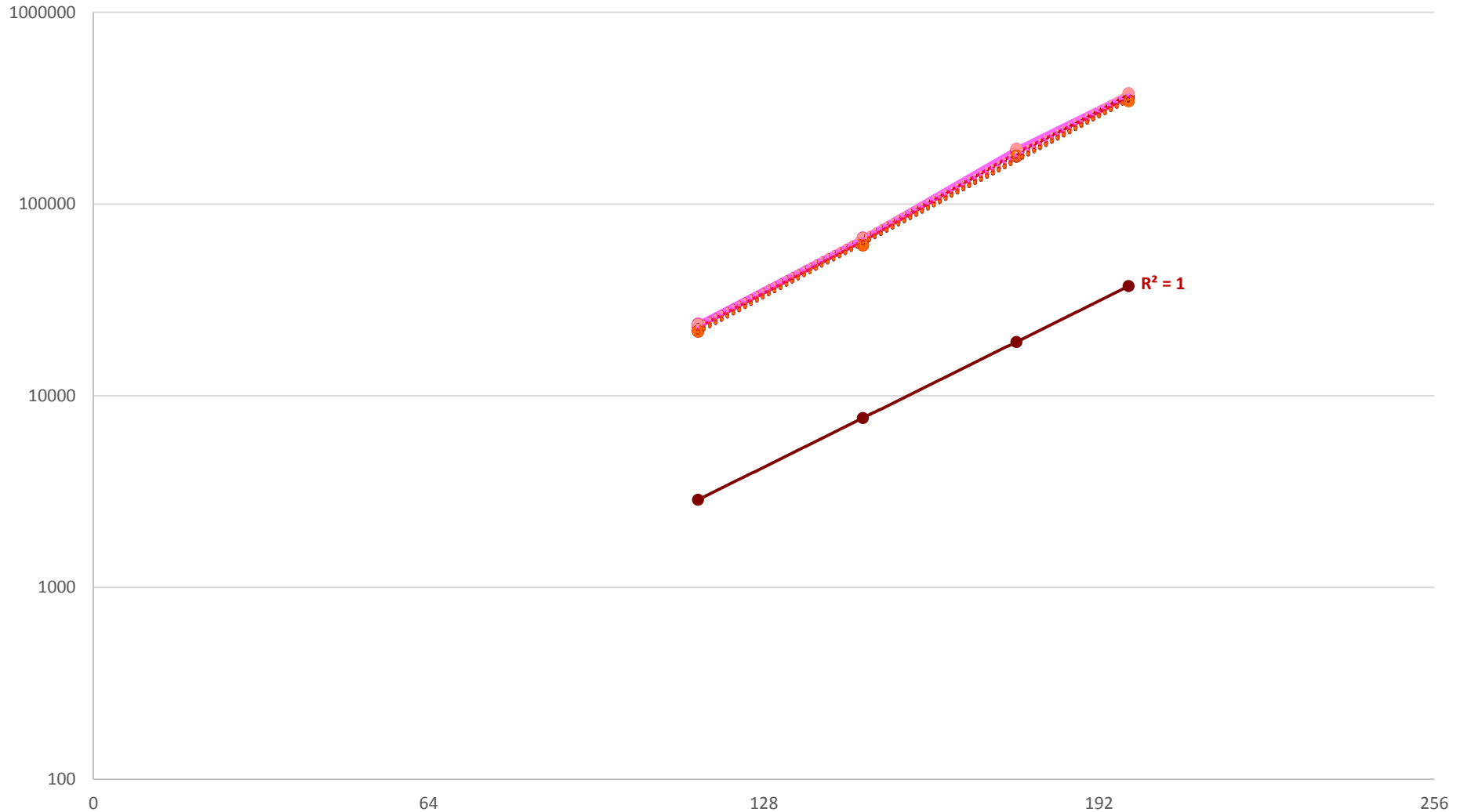
SPHERO CALIBRATION GRAPH
(APC Channel FL6)



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIMENTO			15/12/17	02/01/18	15/01/18	01/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	03/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/18	30/11/18	17/12/18		
PEAK #	CH #	MEAPCY7																											
1			521	538	530	539	524	530	517	519	525	509	533	514	501	515	527	534	532	544	534	538	531	524	512	500	516		
2			1128	1161	1153	1161	1130	1131	1121	1087	1114	1087	1127	1132	1083	1131	1088	1169	1139	1180	1124	1176	1182	1109	1099	1091	1107		
3			2818	2888	2858	2889	2783	2791	2736	2675	2773	2662	2778	2829	2690	2851	2681	2929	2836	2948	2787	2936	2917	2698	2695	2700	2715		
4			8409	8712	8626	8713	8391	8324	8231	8072	8362	8088	8420	8576	8194	8644	8145	8905	8573	8961	8395	8852	8849	8228	8140	8146	8174		
5	115,43	2864	22387	23117	22914	23118	22369	22074	21880	21404	22191	21520	22342	22846	21758	23048	21668	23713	22809	23824	22272	23571	23545	21789	21581	21719	21662		
6	146,89	7644	63151	65131	64393	65132	63034	62139	61410	60187	62322	60406	62832	64451	61311	65041	60861	66727	64311	67025	62807	66544	66423	61294	61002	61131	61101		
7	176,21	19081	183273	189067	187409	189066	182736	180219	177923	174782	181413	174978	181793	187126	177882	188779	176641	193848	185860	194230	181246	192218	193710	178682	177657	177590	177990		
8	197,65	37258	354708	360042	360562	360189	351638	342447	339645	338165	352534	336527	346114	367125	348329	368672	346235	378032	361766	376057	349196	366286	377911	347987	345362	344611	343732		
R² = 1			0,9993	0,9991	0,9992	0,9991	0,9992	0,999	0,9991	0,9993	0,9993	0,9992	0,9991	0,9994	0,9994	0,9994	0,9994	0,9993	0,9994	0,9993	0,9993	0,9991	0,9993	0,9993	0,9993	0,9993	0,9992		

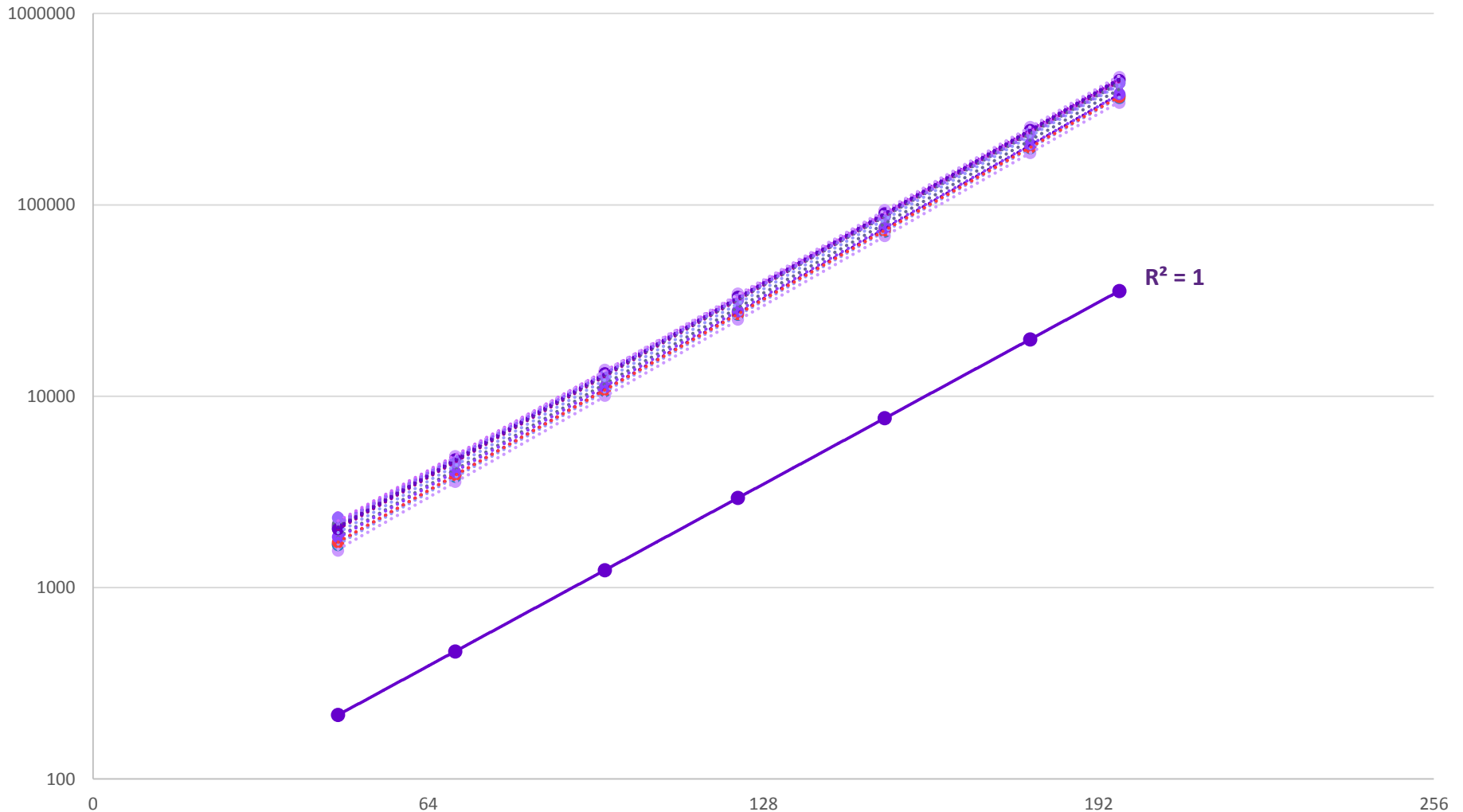
SPHERO CALIBRATION GRAPH
(APC-CY7 Channel FL8)



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIME			15/12/17	02/01/18	15/01/18	01/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	09/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/18	30/11/18	17/12/18			
PEAK #	CH#	MECSB																												
1	11,27		223	224	228	225	226	220	218	224	217	213	209	208	239	206	187	182	197	227	367	266	226	224	216	215	220			
2	46,77	216	2074	2098	2098	2098	2236	2003	2390	2057	2032	1983	2014	1803	1894	1720	1688	1559	1678	1667	1724	1840	2103	2025	2143	2027	2315			
3	69,14	464	4772	4828	4828	4829	4733	4607	4654	4731	4671	4564	4632	4144	4362	3956	3886	3570	3873	3790	3873	4012	4861	4663	4520	4667	4525			
4	97,70	1232	13466	13583	13621	13587	13327	12971	13139	13350	13192	12866	13066	11726	12320	11141	10960	10054	10899	10631	10783	11164	13730	13149	12725	13185	12762			
5	123,12	2940	33740	34034	34104	34037	33352	32504	32903	33393	33021	32216	32756	29334	30836	27878	27437	25174	27384	26618	26925	27826	34360	32906	31862	33037	31912			
6	151,17	7669	91949	92869	93079	92874	91098	88729	89889	91207	90087	87975	89488	80088	84148	76192	74918	68713	74666	72459	73506	75848	93836	89794	87064	90218	87100			
7	178,92	19812	249618	252308	252867	252310	247383	241259	244170	247712	244837	239329	243315	217634	228545	207350	203718	186851	203027	197854	199884	206850	255180	244336	236765	245589	237331			
8	195,96	35474	454368	459123	460022	459349	450115	439640	445074	450924	445721	436252	443769	396734	416701	378281	372172	341357	371086	362416	366543	379162	465720	446269	433334	448922	433407			
R² =			1	1	1	1	1	0,9999	1	0,9996	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0,9999	1	0,9996			

SPHERO CALIBRATION GRAPH
(Cascade Blue Channel MECSB FL9)



QC: LINEARITA' DICEMBRE 2017 – DICEMBRE 2018

RIFERIME			15/12/17	02/01/18	15/01/18	01/02/18	13/02/18	01/03/18	15/03/18	03/04/18	16/04/18	27/04/18	14/05/18	01/06/18	04/06/18	18/06/18	23/07/18	03/08/18	17/08/18	03/09/18	17/09/18	01/10/18	15/10/18	06/11/18	16/11/18	30/11/18	17/12/18			
PEAK #	CH #	MEFBP																												
1	14,09		150	149	155	149	154	137	132	148	146	139	137	139	140	127	120	114	129	146	278	189	144	146	145	142	145			
2	50,03	861	931	947	949	947	968	903	983	909	896	886	886	802	824	749	726	673	714	719	761	800	894	873	891	878	934			
3	72,61	1997	1949	1978	1982	1978	1937	1890	1890	1905	1878	1855	1862	1673	1729	1574	1521	1409	1498	1481	1525	1583	1880	1829	1784	1841	1802			
4	101,11	5776	5262	5326	5341	5328	5202	5089	5095	5135	5057	4994	5020	4517	4658	4229	4099	3786	4019	3940	4002	4143	5068	4920	4787	4952	4847			
5	127,13	15233	13349	13517	13550	13519	13179	12921	12930	13028	12847	12673	12751	11447	11831	10744	10405	9619	10219	9976	10050	10394	12857	12490	12136	12572	12280			
6	156,43	45389	40082	40610	40714	40612	39615	38830	38842	39151	38575	38077	38309	34419	35599	32312	31320	28928	30698	29894	30094	31078	38684	37497	36511	37791	36921			
7	188,97	152562	143386	145130	145826	145131	142019	138769	138869	140070	138087	136203	137025	123171	127175	115826	112102	103509	109904	107296	107459	111255	138539	134426	130904	135286	132492			
8	214,62	396759	423632	428418	430771	428621	419522	409828	409639	413393	407582	402083	404302	364395	376262	343270	333093	307718	326342	319235	319273	330178	409780	398043	388614	400256	392563			
R ² =			1	0,9986	0,9985	0,9985	0,9985	0,9981	0,9985	0,9978	0,9986	0,9985	0,9985	0,9986	0,9985	0,9986	0,9985	0,9985	0,9985	0,9982	0,9978	0,9977	0,9986	0,9985	0,9981	0,9985	0,9977			

SPHERO CALIBRATION GRAPH
(Blue Fluorescent Protein Channel MEFBP FL10)

