

Photon interaction database
of CeBr_3 Scintillator

Total mass attenuation coefficient database
of CeBr_3 Scintillator

CeBr₃

Photon Energy (MeV)	With Coherent Scattering (cm ² /g)	Photon Energy (MeV)	With Coherent Scattering (cm ² /g)	Photon Energy (MeV)	With Coherent Scattering (cm ² /g)	Photon Energy (MeV)	With Coherent Scattering (cm ² /g)	Photon Energy (MeV)	With Coherent Scattering (cm ² /g)
0.001	5238	0.006549	324.7	5	5	800	0.07412		
0.001089	4298	0.008	194.6	6	6	1000	0.07479		
0.001185	3527	0.01	107.8	7	7	1500	0.07576		
0.001185	3888	0.01347	48.67	8	8	2000	0.07629		
0.001228	3592	0.01347	127.7	9	9	3000	0.07686		
0.001273	3318	0.015	96.93	10	10	4000	0.07717		
0.001273	3461	0.02	45.45	11	11	5000	0.07736		
0.001352	3030	0.03	15.19	12	12	6000	0.0775		
0.001437	2654	0.04	6.91	13	13	8000	0.07768		
0.001437	2741	0.04044	6.706	14	14	10000	0.0778		
0.0015	2489	0.04044	14.56	15	15	15000	0.07795		
0.00155	2307	0.05	8.299	16	16	20000	0.07804		
0.00155	4444	0.06	5.115	18	18	30000	0.07812		
0.001573	4150	0.08	2.383	20	20	40000	0.07818		
0.001596	3879	0.1	1.335	22	22	50000	0.07821		
0.001596	4831	0.15	0.5035	24	24	60000	0.07822		
0.001686	4260	0.2	0.2803	26	26	80000	0.07826		
0.001782	3757	0.3	0.1501	28	28	100000	0.07826		
0.001782	4088	0.4	0.1099	30	30				
0.002	3112	0.5	0.09096	40	40				
0.003	1140	0.6	0.07973	50	50				
0.004	544.4	0.8	0.06635	60	60				
0.005	303.8	1	0.05814	80	80				
0.005723	212.7	1.022	0.05742	100	100				
0.005723	342.3	1.25	0.05126	150	150				
0.006	305.3	1.5	0.04669	200	200				
0.006164	283.5	2	0.04122	300	300				
0.006164	343.7	2.044	0.04088	400	400				
0.006354	318.2	3	0.03641	500	500				
0.006549	294.6	4	0.03466	600	600				

CeBr₃

Photon Energy (MeV)	Without Coherent Scattering (cm ² /g)	Photon Energy (MeV)	Without Coherent Scattering (cm ² /g)	Photon Energy (MeV)	Without Coherent Scattering (cm ² /g)	Photon Energy (MeV)	Without Coherent Scattering (cm ² /g)	Photon Energy (MeV)	Without Coherent Scattering (cm ² /g)
0.001	5231	0.006549	321.4	5	5	800	0.07412		
0.001089	4291	0.008	191.8	6	6	1000	0.07479		
0.001185	3520	0.01	105.5	7	7	1500	0.07576		
0.001185	3881	0.01347	47.02	8	8	2000	0.07629		
0.001228	3585	0.01347	126.1	9	9	3000	0.07686		
0.001273	3311	0.015	95.48	10	10	4000	0.07717		
0.001273	3454	0.02	44.43	11	11	5000	0.07736		
0.001352	3024	0.03	14.61	12	12	6000	0.0775		
0.001437	2647	0.04	6.533	13	13	8000	0.07768		
0.001437	2734	0.04044	6.336	14	14	10000	0.0778		
0.0015	2482	0.04044	14.19	15	15	15000	0.07795		
0.00155	2300	0.05	8.035	16	16	20000	0.07804		
0.00155	4437	0.06	4.918	18	18	30000	0.07812		
0.001573	4144	0.08	2.262	20	20	40000	0.07818		
0.001596	3872	0.1	1.253	22	22	50000	0.07821		
0.001596	4825	0.15	0.4639	24	24	60000	0.07822		
0.001686	4254	0.2	0.2569	26	26	80000	0.07826		
0.001782	3751	0.3	0.1392	28	28	100000	0.07826		
0.001782	4082	0.4	0.1036	30	30				
0.002	3106	0.5	0.08692	40	40				
0.003	1135	0.6	0.07691	50	50				
0.004	539.8	0.8	0.06474	60	60				
0.005	299.8	1	0.05711	80	80				
0.005723	209	1.022	0.05643	100	100				
0.005723	338.5	1.25	0.05059	150	150				
0.006	301.7	1.5	0.04623	200	200				
0.006164	279.9	2	0.04096	300	300				
0.006164	340.2	2.044	0.04063	400	400				
0.006354	314.8	3	0.03629	500	500				
0.006549	291.2	4	0.0346	600	600				

Compton scattering database
of CeBr_3 Scintillator

CeBr₃

Photon Energy (MeV)	Compton scattering Coherent (cm ² /g)	Photon Energy (MeV)	Compton scattering Coherent (cm ² /g)	Photon Energy (MeV)	Compton scattering Coherent (cm ² /g)	Photon Energy (MeV)	Compton scattering Coherent (cm ² /g)	Photon Energy (MeV)	Compton scattering Coherent (cm ² /g)
0.001	6.997	0.006549	3.374	5	5	800	1.63E-09		
0.001089	6.925	0.008	2.854	6	6	1000	1.04E-09		
0.001185	6.851	0.01	2.298	7	7	1500	4.63E-10		
0.001185	6.851	0.01347	1.647	8	8	2000	2.61E-10		
0.001228	6.819	0.01347	1.647	9	9	3000	1.16E-10		
0.001273	6.785	0.015	1.452	10	10	4000	6.52E-11		
0.001273	6.785	0.02	1.017	11	11	5000	4.17E-11		
0.001352	6.721	0.03	0.583	12	12	6000	2.9E-11		
0.001437	6.651	0.04	0.3762	13	13	8000	1.63E-11		
0.001437	6.651	0.04044	0.3698	14	14	10000	1.04E-11		
0.0015	6.597	0.04044	0.3698	15	15	15000	4.63E-12		
0.00155	6.554	0.05	0.2641	16	16	20000	2.61E-12		
0.00155	6.554	0.06	0.1963	18	18	30000	1.16E-12		
0.001573	6.535	0.08	0.1208	20	20	40000	6.52E-13		
0.001596	6.515	0.1	0.08188	22	22	50000	4.17E-13		
0.001596	6.515	0.15	0.03959	24	24	60000	2.9E-13		
0.001686	6.438	0.2	0.02331	26	26	80000	1.63E-13		
0.001782	6.358	0.3	0.01084	28	28	100000	1.04E-13		
0.001782	6.358	0.4	0.006232	30	30				
0.002	6.171	0.5	0.004039	40	40				
0.003	5.354	0.6	0.002826	50	50				
0.004	4.657	0.8	0.001605	60	60				
0.005	4.081	1	0.001032	80	80				
0.005723	3.728	1.022	0.000989	100	100				
0.005723	3.728	1.25	0.000663	150	150				
0.006	3.604	1.5	0.000461	200	200				
0.006164	3.533	2	0.00026	300	300				
0.006164	3.533	2.044	0.000249	400	400				
0.006354	3.453	3	0.000116	500	500				
0.006549	3.374	4	6.51E-05	600	600				

CeBr₃

Photon Energy (MeV)	Compton scattering Incoherent (cm ² /g)	Photon Energy (MeV)	Compton scattering Incoherent (cm ² /g)	Photon Energy (MeV)	Compton scattering Incoherent (cm ² /g)	Photon Energy (MeV)	Compton scattering Incoherent (cm ² /g)	Photon Energy (MeV)	Compton scattering Incoherent (cm ² /g)
0.001	6.997	0.006549	3.374	5	5	800	1.63E-09		
0.001089	6.925	0.008	2.854	6	6	1000	1.04E-09		
0.001185	6.851	0.01	2.298	7	7	1500	4.63E-10		
0.001185	6.851	0.01347	1.647	8	8	2000	2.61E-10		
0.001228	6.819	0.01347	1.647	9	9	3000	1.16E-10		
0.001273	6.785	0.015	1.452	10	10	4000	6.52E-11		
0.001273	6.785	0.02	1.017	11	11	5000	4.17E-11		
0.001352	6.721	0.03	0.583	12	12	6000	2.9E-11		
0.001437	6.651	0.04	0.3762	13	13	8000	1.63E-11		
0.001437	6.651	0.04044	0.3698	14	14	10000	1.04E-11		
0.0015	6.597	0.04044	0.3698	15	15	15000	4.63E-12		
0.00155	6.554	0.05	0.2641	16	16	20000	2.61E-12		
0.00155	6.554	0.06	0.1963	18	18	30000	1.16E-12		
0.001573	6.535	0.08	0.1208	20	20	40000	6.52E-13		
0.001596	6.515	0.1	0.08188	22	22	50000	4.17E-13		
0.001596	6.515	0.15	0.03959	24	24	60000	2.9E-13		
0.001686	6.438	0.2	0.02331	26	26	80000	1.63E-13		
0.001782	6.358	0.3	0.01084	28	28	100000	1.04E-13		
0.001782	6.358	0.4	0.006232	30	30				
0.002	6.171	0.5	0.004039	40	40				
0.003	5.354	0.6	0.002826	50	50				
0.004	4.657	0.8	0.001605	60	60				
0.005	4.081	1	0.001032	80	80				
0.005723	3.728	1.022	0.000989	100	100				
0.005723	3.728	1.25	0.000663	150	150				
0.006	3.604	1.5	0.000461	200	200				
0.006164	3.533	2	0.00026	300	300				
0.006164	3.533	2.044	0.000249	400	400				
0.006354	3.453	3	0.000116	500	500				
0.006549	3.374	4	6.51E-05	600	600				

Photoelectric Absorption database
of CeBr_3 Scintillator

CeBr₃

Photon Energy (MeV)	Photoelectric Absorption (cm ² /g)	Photon Energy (MeV)	Photoelectric Absorption (cm ² /g)	Photon Energy (MeV)	Photoelectric Absorption (cm ² /g)	Photon Energy (MeV)	Photoelectric Absorption (cm ² /g)	Photon Energy (MeV)	Photoelectric Absorption (cm ² /g)
0.001	5231	0.006549	321.3	5	5	800	8.59E-07		
0.001089	4291	0.008	191.7	6	6	1000	6.87E-07		
0.001185	3520	0.01	105.4	7	7	1500	4.58E-07		
0.001185	3881	0.01347	46.95	8	8	2000	3.43E-07		
0.001228	3585	0.01347	126	9	9	3000	2.29E-07		
0.001273	3311	0.015	95.4	10	10	4000	1.72E-07		
0.001273	3454	0.02	44.34	11	11	5000	1.37E-07		
0.001352	3024	0.03	14.5	12	12	6000	1.14E-07		
0.001437	2647	0.04	6.42	13	13	8000	8.57E-08		
0.001437	2734	0.04044	6.222	14	14	10000	6.86E-08		
0.0015	2482	0.04044	14.07	15	15	15000	4.57E-08		
0.00155	2300	0.05	7.918	16	16	20000	3.43E-08		
0.00155	4437	0.06	4.801	18	18	30000	2.29E-08		
0.001573	4144	0.08	2.144	20	20	40000	1.71E-08		
0.001596	3872	0.1	1.138	22	22	50000	1.37E-08		
0.001596	4825	0.15	0.3559	24	24	60000	1.14E-08		
0.001686	4254	0.2	0.1561	26	26	80000	8.57E-09		
0.001782	3751	0.3	0.04997	28	28	100000	6.86E-09		
0.001782	4082	0.4	0.02302	30	30				
0.002	3106	0.5	0.01297	40	40				
0.003	1135	0.6	0.008309	50	50				
0.004	539.7	0.8	0.004305	60	60				
0.005	299.7	1	0.002689	80	80				
0.005723	208.9	1.022	0.00257	100	100				
0.005723	338.5	1.25	0.001733	150	150				
0.006	301.7	1.5	0.001241	200	200				
0.006164	279.9	2	0.000756	300	300				
0.006164	340.2	2.044	0.000729	400	400				
0.006354	314.7	3	0.000401	500	500				
0.006549	291.2	4	0.000266	600	600				

Pair Production database
of CeBr_3 Scintillator

CeBr ₃									
Photon Energy (MeV)	In nuclear Field (cm ² /g)	Photon Energy (MeV)	In nuclear Field (cm ² /g)	Photon Energy (MeV)	In nuclear Field (cm ² /g)	Photon Energy (MeV)	In nuclear Field (cm ² /g)	Photon Energy (MeV)	In nuclear Field (cm ² /g)
0.001	0	0.006549	0	5	5	800	0.07188		
0.001089	0	0.008	0	6	6	1000	0.07258		
0.001185	0	0.01	0	7	7	1500	0.07359		
0.001185	0	0.01347	0	8	8	2000	0.07415		
0.001228	0	0.01347	0	9	9	3000	0.07474		
0.001273	0	0.015	0	10	10	4000	0.07505		
0.001273	0	0.02	0	11	11	5000	0.07526		
0.001352	0	0.03	0	12	12	6000	0.0754		
0.001437	0	0.04	0	13	13	8000	0.07558		
0.001437	0	0.04044	0	14	14	10000	0.07571		
0.0015	0	0.04044	0	15	15	15000	0.07586		
0.00155	0	0.05	0	16	16	20000	0.07595		
0.00155	0	0.06	0	18	18	30000	0.07603		
0.001573	0	0.08	0	20	20	40000	0.07609		
0.001596	0	0.1	0	22	22	50000	0.07612		
0.001596	0	0.15	0	24	24	60000	0.07613		
0.001686	0	0.2	0	26	26	80000	0.07617		
0.001782	0	0.3	0	28	28	100000	0.07617		
0.001782	0	0.4	0	30	30				
0.002	0	0.5	0	40	40				
0.003	0	0.6	0	50	50				
0.004	0	0.8	0	60	60				
0.005	0	1	0	80	80				
0.005723	0	1.022	0	100	100				
0.005723	0	1.25	0.000144	150	150				
0.006	0	1.5	0.000683	200	200				
0.006164	0	2	0.002364	300	300				
0.006164	0	2.044	0.002528	400	400				
0.006354	0	3	0.006097	500	500				
0.006549	0	4	0.009437	600	600				

CeBr₃

Photon Energy (MeV)	In electron Field (cm ² /g)	Photon Energy (MeV)	In electron Field (cm ² /g)	Photon Energy (MeV)	In electron Field (cm ² /g)	Photon Energy (MeV)	In electron Field (cm ² /g)	Photon Energy (MeV)	In electron Field (cm ² /g)
0.001	0	0.006549	0	5	5	800	0.001871		
0.001089	0	0.008	0	6	6	1000	0.001903		
0.001185	0	0.01	0	7	7	1500	0.00195		
0.001185	0	0.01347	0	8	8	2000	0.001977		
0.001228	0	0.01347	0	9	9	3000	0.002007		
0.001273	0	0.015	0	10	10	4000	0.002024		
0.001273	0	0.02	0	11	11	5000	0.002035		
0.001352	0	0.03	0	12	12	6000	0.002042		
0.001437	0	0.04	0	13	13	8000	0.002052		
0.001437	0	0.04044	0	14	14	10000	0.002059		
0.0015	0	0.04044	0	15	15	15000	0.002067		
0.00155	0	0.05	0	16	16	20000	0.002072		
0.00155	0	0.06	0	18	18	30000	0.002077		
0.001573	0	0.08	0	20	20	40000	0.00208		
0.001596	0	0.1	0	22	22	50000	0.002082		
0.001596	0	0.15	0	24	24	60000	0.002082		
0.001686	0	0.2	0	26	26	80000	0.002084		
0.001782	0	0.3	0	28	28	100000	0.002085		
0.001782	0	0.4	0	30	30				
0.002	0	0.5	0	40	40				
0.003	0	0.6	0	50	50				
0.004	0	0.8	0	60	60				
0.005	0	1	0	80	80				
0.005723	0	1.022	0	100	100				
0.005723	0	1.25	0	150	150				
0.006	0	1.5	0	200	200				
0.006164	0	2	0	300	300				
0.006164	0	2.044	0	400	400				
0.006354	0	3	1.04E-05	500	500				
0.006549	0	4	4.25E-05	600	600				